



City of New London

Department of Finance-Purchasing Agent
13 Masonic Street • New London, CT 06320 • Phone (860) 447-5215 • Fax (860) 447-5297

Invitation for Bids

Specifications and Proposal Documents Attached

Bid No.: 2013-11

Opening Date and Time: April 1, 2013 at 2:00 P.M.

Bates Woods Park Phase II Building Improvements

Special Instructions: There will be a mandatory pre-bid meeting for all general contractors on Thursday, March 14, 2013 at 10:00 A.M. All interested parties are to meet in the Stanton Building Conference Room located at 111 Union Street, New London, CT. Late arrivals (more than fifteen (15) minutes after the scheduled start time) will not be given credit for attendance at the meeting and will not be able to submit a bid for this project.

The following information must appear in the lower left hand corner of the envelope:

Sealed Bid No.: 2013-11

Not to be opened until April 1, 2013 at 2:00 P.M.

Return Bid to:

William R. Hathaway, Purchasing Agent
City of New London
13 Masonic Street
New London, CT 06320

Bids shall not be accepted after the Opening Date and Time indicated above.



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PLEASE RETURN THIS FORM IMMEDIATELY

Acknowledgement: Receipt of Invitation for Bids

Bid No.: 2013-11

Bates Woods Park Phase II Building Improvements

Please take a moment to acknowledge receipt of the attached documents. Your compliance with this request will help us to maintain proper follow-up procedures and will ensure that you receive any addendum that may be issued.

Date Issued: 03/08/2013
Date documents received: ____/____/____
Do you plan to submit a response? Yes ____ No ____

Print or type the following information:

Company Name: _____
Address: _____

Telephone: _____ Fax: _____
E-mail: _____
Received by: _____

Note: Faxed or e-mailed acknowledgements are requested.

Fax No.: (860)447-5297

E-mail: whathaway@ci.new-london.ct.us

Fax this sheet only. A cover sheet is not required.



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Standard Invitation for Bids (IFB) and Contract Terms and Conditions

All Invitations for Bids issued by the City of New London (City) will bind Bidders to the terms and conditions listed below, unless specified otherwise in any individual Invitation for Bids.

Incorporated by reference into this contract are the provisions of Section 2-66 through 2-71 and Section 2-73 of the Code of Ordinances of the City of New London.

The contractor agrees to comply with the Code of Ordinances as they exist on the date of the contract and as they may be adopted or amended from time to time during the term of this contract and any amendments thereto.

Submission of Bids

1. Bids must be submitted on forms supplied by the City of New London. Telephone, facsimile or e-mail bids will not be accepted in response to an Invitation for Bids. An original and one (1) copy of the Proposal Form shall be returned to the Purchasing Agent.
2. The date and time bids are to be opened are given in each Invitation for Bids issued. Bids received after the specified date and time of the bid opening given in each Invitation for Bids will not be considered. Bid envelopes must clearly indicate the bid number as well as the date and time of the bid opening. The name and address of the bidder should appear in the upper left-hand corner of the envelope.
3. Incomplete proposal forms may result in the rejection of the bid. Amendments to bids received by the Purchasing Agent after the date and time specified for the bid opening shall not be considered. Bids shall be computer prepared, typewritten or handwritten in ink. Bids submitted in pencil shall be rejected. A person duly authorized to sign bids for the bidder shall sign all bids. Unsigned bids shall be rejected. The person signing the Proposal Form or their authorized designee must initial errors, alterations or corrections on both the original and copy of the Proposal Form to be returned. In the event an authorized designee initials a correction, there must be written authorization from the person signing the Proposal Form to the person initialing the erasure, alterations or corrections. Failure to do so shall result in rejection of the bid for those items erased, altered or corrected and not initialed.
4. Conditional bids are subject to rejection in whole or in part. A conditional bid is defined as one that limits, modifies, expands or supplements any of the terms and conditions and/or specifications of the Invitation for Bids.
5. Alternate bids will not be considered. An alternate bid is defined as one that is submitted in addition to the bidder's primary response to the Invitation for Bids.
6. Prices should be extended in decimal, not fraction, to be net and shall include delivery and transportation charges fully prepaid by the Contractor to the destination specified in the Invitation for Bids and subject only to cash discount.
7. Pursuant to Sections 12-412 and 12-412(1) of the Connecticut General Statutes, the City of New London is exempt from the payment of excise, transportation and sales taxes imposed by the Federal Government and/or the State. Such taxes must not be included in the bid prices.
8. In the event of a discrepancy between the unit price and the extension, the unit price shall govern.
9. By its submission the Bidder represents that the bid is not made in connection with any other Bidder submitting a bid for the same commodity or commodities and is in all respects fair and without collusion or fraud.

Standard Invitation for Bids (IFB) and Contract Terms and Conditions

10. All bids will be opened and read publicly and upon award are subject to public inspection.

Guaranty or Surety

11. Bid bonds, performance bonds, and labor and material bonds will be required as specified below. Guaranty or surety may be in the form of certified check. Bonds must meet the following requirements: Corporation – must be signed by an official of the corporation above their official title and the corporate seal must be affixed over the signature; Firm or Partnership - must be signed by all of the partners and indicate they are “doing business as”; Individual – must be signed by the owner and indicated as “Owner”. The surety company executing the bond or countersigning must be licensed in Connecticut and an official of the surety company must sign the bond with the corporate seal affixed over the signature. Signatures of two (2) witnesses for both the principal and the surety must appear on the bond. Power of attorney for the official signing the bond for the surety company must be submitted with the bond.

Bid Bond – Ten percent (10%) due at time of bid for all contract services and public works/construction projects that exceed twenty thousand dollars (\$20,000.00)

Performance Bond – One hundred percent (100%) of contract price for projects that exceed fifty thousand dollars (\$50,000.00).

Labor and Material Payment Bonds – One hundred percent (100%) of contract price for projects that exceed fifty thousand dollars (\$50,000.00).

Award

12. Award of this contract will be made to the lowest responsible, qualified bidder and will be based on net cost and City specifications. The City of New London reserves the right to award this contract to other than the low bidder and to make multiple awards if deemed in the best interest of the City.
13. The City of New London allows a fifteen percent (15%) local vendor preference. A New London based business will be considered the lowest responsible bidder if its bid is within fifteen percent (15%) of the low bid and it is willing to accept the award at the low bid price. Any bidder claiming to be a New London based business must provide documentation that all of its motor vehicles are registered in New London and that payment of all of its property and motor vehicle taxes are current.
14. The City of New London may reject any bidder in default of any prior contract or guilty of misrepresentation or any bidder with a member of its firm in default or guilty of misrepresentation.
15. The Purchasing Agent may correct inaccurate awards resulting from clerical or administrative errors.

Other Requirements

16. The City has an employment preference goal that jobs be offered to local residents on public prevailing wage projects with thresholds great than \$100,000 for renovation and \$400,000 for new construction. For such projects, it is understood that contractors shall make a good faith effort to employ a participating workforce comprised of twenty-five (25%) local residents of New London County, CT, with residents of the City of New London, CT getting a priority representing fifty percent (50%) of said participation, which will include twenty-five percent (25%) female and minority.
17. The City has an employee training preference goal that apprenticeship opportunities be made available for state licensed trades on public prevailing wage projects with thresholds greater than \$100,000 for renovation and \$400,000 for new construction. For such projects, it is understood that contractors shall make a good faith effort to employ a minimum of ten percent (10%) of the workforce per state licensed trade as apprentices and, of this number, a minimum of fifty percent (50) shall be in the first year of apprenticeship training.

Standard Invitation for Bids (IFB) and Contract Terms and Conditions (con't)

Contract

18. The existence of a contract shall be determined in accordance with the requirements set forth above.
19. The Contractor shall not assign or otherwise dispose its contract or its right, title or interest, or its power to execute such contract to any other person, firm or corporation without the prior written consent of the City of New London.
20. Failure of a Contractor to deliver commodities or perform services as specified will constitute authority for the City of New London to purchase these commodities or services on the open market. The contractor agrees to promptly reimburse the City of New London for excess cost of these purchases. The purchases will be deducted from the contracted quantities.
21. The Contractor agrees to hold the City of New London harmless from liability of any kind for the use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention furnished or used in the performance of the Contract; Guarantee its products against defective material or workmanship; repair damages of any kind, for which it is responsible to the premises or equipment, to its own work or to the work of other contractors; obtain and pay for all licenses, permits, fees etc., and to give all notices and comply with all requirements of the City of New London, the State of Connecticut and the U.S. Government.
22. Insurance requirements generally apply to contract services, professional services and public works improvement/construction projects. The Contractor will carry commercial general liability insurance to protect the City of New London from loss. The following minimum limits shall be met:

Bodily Injury and Property Damage – One million dollars (\$1,000,000.00) each occurrence; two million dollars (\$2,000,000.00) aggregate

Products or Completed Operations - One million dollars (\$1,000,000.00) each occurrence; two million dollars (\$2,000,000.00) aggregate

Professional Liability (Errors and Omissions) Coverage appropriate to the contractor's operations – Two million dollars (\$2,000,000.00) each occurrence

Commercial Automobile Coverage including owned, non-owned, leased and hired vehicles (if used on City of New London property) – One million dollars (\$1,000,000.00) combined single limit for each accident.

Workers' Compensation Coverage - Will be in accordance with State of Connecticut requirements at the time of bid.

Any deductible or self-insured retention must be disclosed and any claim payments falling within the deductible shall be the responsibility of the contractor.

The Contractor shall require all subcontractors to carry the same forms and minimum coverages that it is required to provide. Evidence of these coverages must be provided to the City of New London Purchasing Agent prior to the contractor or subcontractor coming onto the work site.

All insurance policies shall be endorsed to the City of New London, its officers and employees as additional insured, and shall not be reduced or cancelled without thirty (30) days prior written notice to the Purchasing Agent. In addition, the contractor's insurance shall be primary as respects the City of New London, and any other insurance maintained by the City of New London shall be excess and not contributing insurance with the contractor's insurance.

23. Notwithstanding any provision or language in this contract to the contrary, the City Manager may terminate this contract upon approval by the City Council, whenever he/she determines that such termination is in the best interest of the City of New London. Any such termination shall be effected by delivery to the Contractor of a

Standard Invitation for Bids (IFB) and Contract Terms and Conditions (con't)

written notice of termination. The notice of termination shall be sent by registered mail to the Contractor address furnished to the City of New London for purposes of correspondence or by hand delivery. Upon receipt of such notice, the Contractor shall both Immediately discontinue all services affected (unless the notice directs otherwise) and deliver to the City of New London all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Contractor in performing its duties under this contract, whether completed or in progress. All such documents, information and materials shall become the property of the City of New London. In the event of such termination, the contractor shall be entitled to reasonable compensation as determined by the City Manager, however, no compensation for lost profits shall be allowed.

Delivery

24. All products and equipment delivered must be new unless otherwise stated in the proposal specifications.
25. All deliveries will be to the locations specified by the City of New London. The City of New London does not have a loading dock therefore all Contractors will be responsible for inside delivery without assistance from City of New London personnel.
26. Payment terms are net 45 days after receipt of goods or invoice, whichever is later, unless otherwise specified.
27. Charges against a Contractor shall be deducted from current obligations. Money paid to the City of New London shall be payable to the Treasurer, City of New London.

Saving Clause

28. The Contractor shall not be liable for losses or delays in the fulfillment of the terms of the contract due to wars, acts of public enemies, strikes, fires, floods, acts of God or any other acts not within the control of or reasonably prevented by the Contractor. The contractor will give written notice of the cause and probable duration of any such delay.

Advertising

29. Contractors may not reference sales to the City of New London for advertising and promotional purposes without prior approval of the City of New London.

Rights

30. The City of New London has sole and exclusive right and title to all printed material produced for the City of New London and the Contractor shall not copyright the printed matter produced under this contract.
31. The Contractor assigns to the City of New London all rights, title and interests in and to all causes of action it may have under Section 4 of the Clayton Act, 15 USC 15, or under Chapter 624 of the Connecticut General Statutes. This assignment occurs when the contractor is awarded the contract.
32. The Contractor agrees that it is in compliance with all applicable federal, state and local regulations, including but not limited to Connecticut General Statutes Section 7-148i. The Contractor also agrees that it will hold the City of New London harmless and indemnify the City of New London from any action which may arise out of any act by the Contractor concerning lack of compliance with these laws and regulations. All purchases will be in compliance with Sections 22a-194 to 22a-194g of the Connecticut General Statutes related to product packaging.
33. This contract is subject to the provisions of Executive Order Number Three of Governor Thomas J. Meskill promulgated June 16, 1971, the provision of Executive Order Number Seventeen of Governor Thomas J. Meskill promulgated February 15, 1973 and Section 16 of Public Act 91-58, nondiscrimination regarding sexual orientation, and the provisions of Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999 regarding Violence in the Workplace Prevention Policy.

BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT

SPECIAL PROVISIONS

The Requirements of Special Provisions shall supercede all other contract provisions, General & Technical Specifications.

No separate payment for Special Provisions shall be made unless otherwise noted. All costs associated with implementing or completing the Special Provisions shall be incorporated into payment items in this contract.

1. GENERAL WORK

This item of the Proposal shall include all labor, materials, equipment, tools and work which are not otherwise paid for under specific items of the Proposal.

2. UNIT PRICES

All bid item unit prices shall include all cost to fully conform to the requirements of the Contract Documents necessary to perform the work and shall include the costs for all materials, equipment, tools, labor and work incidental thereto.

3. BID ITEMS

Should the Bidders have any question(s) regarding the scope of the work to be included within the Bid Items, said question(s) shall be directed to the Owner or the Engineer in writing sufficiently in advance of the bid date in order to allow for a proper response.

All work for this project shall be performed under the Bid Items listed in the Bid Proposal Form. The value of all the Bid Items when added together shall equal the Total Bid Price.

Payment for work within these Contract Documents will only be made under Items listed in the Bid Proposal Form and as described below. The cost for other work included in the Contract Documents and/ or on the Contract Drawings and not listed in the Bid Proposal Form and as described below shall be included in the cost of the various Items bid. All items shall include all materials, equipment and labor necessary to complete the work described in the Contract Documents.

Base Bid Items

#1 Concession Building Renovations – The work under this item will be paid for at the contract lump sum price complete in place which price shall include the complete renovation of the concession building all in accordance with the contract documents. Contractor shall be paid as a percentage of work completed as determined by the Engineer.

BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT

#2 Restroom Building Renovations – The work under this item will be paid for at the contract lump sum price complete in place which price shall include the complete renovation of the restroom building all in accordance with the contract documents. Contractor shall be paid as a percentage of work completed as determined by the Engineer.

4. MAINTENANCE AND PROTECTION OF TRAFFIC

Chester Street is to remain open for local traffic during construction. The road may be restricted during the construction period if required, but must be opened at the end of each work day. The roads must be made passable as soon as possible.

The Contractor shall coordinate all adjustments to traffic operations with the Local Traffic Authority (New London Police Department). The Contractor shall maintain and protect traffic in the project area in accordance with the requirements and regulations of the applicable State and Local Regulatory Agencies and these Specifications. It shall be the sole responsibility of the Contractor to warn the State and Local Regulatory Agencies (including but not limited to the Police, Fire, and Ambulance) at least 72 hours in advance of changes in traffic patterns due to the reduction of pavement widths or other traffic obstructions. The Contractor shall furnish, install, maintain, adjust, and remove all signs, suitable barricades, flashers, and traffic cones, as necessary to adequately notify and warn vehicular and pedestrian traffic. All of this work shall meet with the approval of all the State and Local Regulatory Agencies.

The Contractor shall reset in the same location any traffic control signs that are removed during construction. Any signs that are damaged shall be replaced at no cost to the City of New London.

5. CONTRACTOR SITE VISIT

Prior to bidding the Contractor shall visit the site and confirm existing field conditions. The Contractor shall complete the “Contractor Site Verification Form” and submit it with his base bid.

6. WORK SCHEDULE/PROJECT PHASING

All work under this contract shall be completed within 180 calendar days from the date of the issuance of the purchase order. A winter shut down from December 1st to April 1st will be permitted if conditions warrant. The winter shutdown shall be approved in writing by the Engineer. The winter shutdown shall not be included in the contract time frame.

At all times, one of the restroom facilities, both men’s and women’s, on site must be in safe and working order for public use. At no time during construction will there be no public restroom facility functioning on site.

**BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT**

Liquidated damages of two hundred dollars (\$200.00) per day shall be paid by the contractor to the City for each calendar day, or portion thereof, over the one hundred eighty (180) calendar day contract time frame that work is not completed.

The Contractor shall submit a detailed construction schedule prior to the start of any work. Construction schedule shall be updated by the Contractor on a monthly basis and copies submitted to the City Engineering Department.

7. CONSTRUCTION TRAILER

A construction trailer/site office is not required for or by the City of New London. If the Contractor wishes to install one all cost shall be borne by the Contractor. No separate or additional payment shall be made for a construction trailer.

8. SITE PREPARATION, CLEANUP & MISCELLANEOUS WORK

Work under this item shall consist of, but not be limited to, all labor, material, equipment, tools required for tree removal and disposal; clean-up and restoration; erosion/sediment control and water pollution control (soil erosion), supply, install and maintain siltation barriers; removal, storage, used during the construction process; disposal of materials; dust control using water or other approved means; mobilization and demobilization; clearing and grubbing; excavation supports; material testing; transport and placement of suitable excavated fill material within project limits and/or disposal of surplus materials; etc.; and all other work necessary to complete this Contract; as ordered by the Engineer.

Any items which are to be removed, stored, relocated, and/or replaced which are damaged by the contractor shall be replaced by the Contractor at no cost to the City.

Upon completion of the work under this contract, the entire work area shall be cleared of all construction debris and shall be restored to as near to the original condition as possible.

No separate payment will be made for any labor, equipment, materials or incidentals necessary for the performance of this work. The cost of this work should be included in the Lump Sum Price for other items in the Proposal.

9. PROJECT COORDINATION WITH OTHER ONGOING PARK ACTIVITIES

It is anticipated that portions of the park where construction activities are not taking place may remain open for use during the construction period. The Contractor must plan and coordinate construction activities with the Manager of Parks, Mr. David Denoia.

10. PROJECT COORDINATION WITH OTHER CONSTRUCTION PROJECTS

10.1 CELL TOWER:

BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT

Message Center Management (MCM) will be installing a 140 foot high Communication Tower at the existing light pole behind the first base outfield fence at Sal Amanti field. This work is not anticipated to occur until the spring of 2014.

MCM will be installing underground electrical conduit beginning at the above ground electrical transformer located adjacent to the large concession building/bathrooms and will continue down the area between both the softball and Sal Amanti baseball fields. The location of that underground conduit will need to be coordinated between MCM, the Contractor, and the City in order to ensure no site improvements will be disturbed when the cell tower work is performed.

A coordination meeting will be required between MCM, the Contractor, and the City prior to the beginning of any work.

10.2 SITE RENOVATIONS:

A separate contract for site improvements within Bates Woods Park may be ongoing during the construction period for the building renovations. A coordination meeting will be required between both projects' Contractors and the City prior to the beginning of any work.

11. SITE ACCESS AND PROTECTION OF SITE IMPROVEMENTS

The Contractor shall take all necessary precautions to protect existing site improvements to remain. Any damage to existing site improvements shall be brought to the attention of the City and the project engineer immediately. The Contractor will be responsible for the repair or replacement of damaged items to the satisfaction of the City.

12. COORDINATION WITH PUBLIC UTILITIES

If public utilities are encountered during the construction of the Contract, the Contractor will coordinate relocation and/or replacement of the pole, service, or main with the utility. The City will not provide additional compensation for lost time, down time or demobilization and remobilization due to conflicts from utilities.

No separate payment will be made for any labor, equipment, materials or incidentals necessary for the performance of this work. The cost of this work should be included in the price for the general cost of the work.

13. TESTING AND CONFORMANCE

The Contractor's attention is directed to the testing and conformance requirements for the various items, materials, and construction methods as specified throughout the specifications. All tests shall be conducted and a certified test report shall be submitted to the Engineer for his approval.

**BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT**

All tests will be made by a certified testing firm at the expense of the Contractor. Tests will be made in accordance with the latest revision to the standard method of American Association of State Highway and Transportation Officials, the American Society for Testing and Materials, or other standards as stated in the specifications.

Any materials incorporated in the work prior to the submission of materials certificates and certificates of compliance shall be considered as defective and unauthorized and shall be removed and replaced.

No separate payment will be made for Testing and Conformance. Any costs incurred from the performed tests should be included in the Lump Sum Price for other items in the Proposal.

14. UNAUTHORIZED EXCAVATION

If the bottom or side of any excavation has been removed below grade or beyond dimensions shown by the Contract Drawings, or that prescribed by the Engineer, it shall be brought up to the proper grade and dimensions at the Contractor's own expense by refilling with gravel or other material acceptable to the Engineer and well compacted. Replacement of surfaces, associated with unauthorized excavations shall be in accordance with these specifications and shall be at the Contractor's own expense.

15. SHOP DRAWINGS

Shop drawings shall be submitted for all materials to be utilized on the project. All shop drawings shall be provided at least two weeks prior to the start of work.

16. REMOVALS OF MISCELLANEOUS MATERIALS

The Contractor shall be responsible for the removal and off-site disposal of all removal items shown on the Contract Drawings, and miscellaneous materials identified not to remain on the Contract Drawings.

No separate payment will be made for any labor, equipment, materials or incidentals necessary for the performance of this work which cost shall be included in the Lump Sum Bid Items in the contract.

17. WORK SCHEDULE

The normal workday shall be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday; 8:00 a.m. through 5:00 p.m. Saturday. No construction activity shall take place on Sundays.

18. MATERIAL TESTING

The Contractor shall submit all materials certificates, and when required by the Engineer, submit samples, certified test reports, affidavits, etc., promptly after award of the Contract and

BATES WOODS PARK IMPROVEMENTS
PHASE II
NEW LONDON, CT

acceptance of the Contractor's bonds. The Contractor shall furnish the requested samples without charge.

The Owner reserves the right to retest all materials which have been tested and accepted at the source of supply, after the same have been delivered, and to reject all materials which, when retested, do not meet the requirements of the specification.

Approval of any materials shall be general only and shall not constitute a waiver of the Owner's right to demand full compliance with the Contract requirements.

The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken by the Engineer, and the Owner shall pay all other testing costs of said samples.

**PROJECT MANUAL
AND
SPECIFICATIONS**

**BATES WOODS PARK
BUILDING IMPROVEMENTS
PHASE II
CHESTER STREET
NEW LONDON, CT**

JANUARY 25, 2013

PREPARED BY:

ARCHITECT

STEIN | TROOST LLC
a r c h i t e c t u r e

one morgan ave norwalk CT 06851

**BATES WOODS PARK IMPROVEMENTS
PHASE II
CHESTER STREET
NEW LONDON, CT**

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**Bates Woods Park Improvements
Phase II
NEW LONDON, CT**

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**SUPPLEMENTARY GENERAL CONDITIONS
SECTION 01 00 00**

**Bates Woods Park Improvements
Phase II
NEW LONDON, CT**

01 11 00 SUMMARY OF WORK

- A. The work is located at Bates Woods Park, Chester Street, New London, CT. The project is the renovation & construction of toilets in the “restroom” building and “Concession” Building.

01 11 12 PROJECT DOCUMENTS

- A. The Specifications and the Drawings describe and illustrate the materials and labor necessary for the work of this Project. Do not scale drawings.
- B. The General Conditions and Supplementary General Conditions apply to each Section of the Specification.
- C. In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:
 - 1. The Agreement
 - 2. Addenda, with those of later date having precedence over those of earlier date.
 - 3. The Supplementary Conditions
 - 4. The General Conditions of the Contract for Construction
 - 5. Drawings and Specifications

In the case of any inconsistency between Drawings and Specifications, or within either Document not clarified by Addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect’s interpretation.

01 11 13 DOCUMENTS FURNISHED

- A. The General Contractor will be given one set of Blackline prints, of the Contract Documents including one copy of the specifications. If additional copies are needed, they will be available at additional cost, to the Contractor.

01 11 15 CONTRACTOR'S USE OF PREMISES

- A. The Contractor shall confine his operations, including storage of apparatus, equipment and materials to the contract limit lines and/as directed by the Owners Representative
- B. The areas and/or spaces, including their access, shall be maintained free and clear throughout the contract term.

01 11 40 COORDINATION

- A. Coordinate the work of the several trades to assure the efficient and orderly sequence of installation of construction elements.
- B. Verify that characteristics of interrelated equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting and placing equipment in service.
- C. See also General Conditions

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01 11 45 CUTTING AND PATCHING

- A. The Contractor shall install sleeves, inserts and hangers furnished by the trades as needed for the installation of the Work required with installation drawing, locating the work.
- B. Permission shall be obtained from the Architect before cutting beams, arches, lintels or other structural members.
- C. Do cutting and patching to integrate elements of work and to uncover ill-timed, defective and non-conforming work. Provide penetrations of existing surfaces. Provide samples for testing. Seal penetrations through floors, walls, ceilings and roofs, as applicable; restore or preserve fire-rated construction. Construction and finishes shall match original work.
- D. Repair any and all damage to work of other trades caused by cutting and patching operations, using skilled mechanics of the trades involved.
- E. See also General Conditions

01 11 50 FIELD ENGINEERING

- A. Provide field engineering services to establish and record grades, lines and elevations.
- B. The Contractor shall retain a Professional Engineer or Land Surveyor registered by the State of Connecticut to provide line, grades, elevations and control to lay out the building, underground utility lines and other site work from the horizontal and vertical control information furnished by the Owner and to establish and record the necessary elevations.
- C. The Contractor shall satisfy himself as to the accuracy of the horizontal and vertical control information furnished by the Owner, and shall not take advantage of errors which may be included in the control information. Stakes and markings shall be preserved.
- D. See also Article 01720 herein, paragraph B.

01 11 90 STANDARDS, CODES AND SPECIFICATIONS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. References to standard specifications and codes refer to the editions current at the bid due date. References include their addenda and errata, if any, and shall be considered a part of these specifications as if they were printed herein in full.
- C. The manufacturers' standard warranties or guarantees shall apply when their products are used on this project.
- D. Whenever miscellaneous items or work are not covered by these specifications, they shall be governed by the applicable provisions of these Supplementary General Conditions.

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- 01 31 19 PROJECT MEETINGS
- A. A schedule of regular project meetings will be established, once contract has been awarded.
- 01 31 20 PROJECT PHOTOGRAPHS
- A. General Contractor shall photograph the project weekly documenting key construction components. They shall be distributed to owner's representatives and Architect monthly. Photographs shall show progress of work, identify area in photo and each photo shall indicate date photographed.
- B. On the date the work is begun and on or about the first day of each month thereafter (until the work is at least 95 percent completed), the Contractor shall take photographs of the construction.
- C. Take a minimum of (24) photo in digital format each month. Deliver pictures to the Owners representative & Architect at the end of each month.
- 01 32 01 SCHEDULES & REPORTS
- A. Contractor shall provide close administrative and procedural coordination of scheduling and reporting requests with those of other Contractors. Contractor shall be responsive to overall coordination responsibilities of the Project. Maintain coordination and correlation between separate reports by updating at a monthly or bi-weekly time intervals.
- B. Contractor shall submit a Bar-Chart Schedule not more than seven days after the Date of Notice to Proceed. On the schedule, indicate a time bar for each major category of work to be performed at site, properly sequenced and coordinated with other elements of the work. Show completion of the work sufficiently in advance of the date of substantial completion of the work. The Bar-Chart shall be updated monthly.
- C. When there is 90 days remaining to the scheduled date of substantial completion a schedule showing the completion of each item with inspections that remains.
- 01 33 00 SUBMITTAL PROCEDURES
- A. Required numbers and distribution. Provide seven (7) originals/copies of shop drawings, product data, color charts etc. All submittals shall be sent to the Architect.
- B. Details shall be large scale or full size.
- C. The Contractor shall review the Shop Drawings, stamp with his approval and submit them with reasonable promptness and in orderly sequence so as to cause no delay in his work or in the work of any subcontractor. Shop Drawings shall be identified for item, material and project number. The Contractor shall inform the Architect, in writing, of any deviation in the Shop Drawings from the requirements of the Contract Documents. Shop drawings shall show adjacent and connected equipment and construction.
- D. The Architect will review and comment on Shop Drawings with reasonable promptness so as to cause no delay but only for conformance with the design concept of the project and with the

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information given in the Contract Documents. Promptness and reasonable promptness as stated shall be understood to mean: to enable the Architect to retain shop drawings, product data, and samples for review for at least 15 working days.

Contractor shall assume that the Architect will require 15 working days for review of submittals. If submittals need to be expedited for the contractor's purposes, then the Architect's overtime expenses will be billed to the Owner. The Owner will back charge these costs to the Contractor.

Submittals shall be submitted for review within 90 days after the award of the Contract

If the Contractor's submittals are not submitted for review within 90 days after award of the contract, the Architects review period of 15 working days is waived and additional review time shall not be considered a basis for the extension of the Contract Time or Contract Sum.

E. SAMPLES

1. Submit samples of items where specifically required. Furnish information and data for items or materials offered as equals to those specified to establish their equality.
2. Mark samples to show:
 - a. Name and number of project.
 - b. Name or trade, type, quality or grade and any further designation necessary to identify the items or materials.
 - c. Manufacturer's or producer's name.
 - d. Name of Contractor, and Subcontractor, if any.
3. Submit samples of size and/or number sufficient to show quality, type, range of color, finish and texture.
4. Furnished materials shall be equal to approved samples.
5. See also General Conditions

01 35 23 GENERAL SAFETY REQUIREMENTS

A FIRE PROTECTION

1. The Contractor, during construction, shall be responsible to provide suitable fire protection equipment during the course of the work.
2. Bitumen or tar shall be melted on the ground only. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the building at any time. The Contractor shall assign a responsible employee to be in charge of fire protection measures.

B CONSTRUCTION EQUIPMENT

1. Each Trade subcontractor shall furnish, for the proper and complete performance of its work, tools, apparatus and appliances, hoists and/or cranes and power for same, scaffolding, runways, ladders, temporary supports and bracing and similar work or material necessary to insure convenience and safety in the execution of the Contract except where this is specified in any Specification Section. All such items shall comply with OSHA regulations and applicable codes, statutes, rules and, regulations,

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including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by the A.G.C. and the standards of the State Labor Department.

2. Staging, exterior and interior, required for the execution of this Contract, shall be furnished, erected and relocated by each trade subcontractor requiring the same, if necessary, and removed by the General Contractor. Staging shall be maintained in a safe condition without charge to and for the use of all trades as needed.

C BARRIERS AND ENCLOSURES

1. Provide barriers to prevent public entry into construction areas and to protect existing facilities from damage by construction operations.
2. Provide barriers around trees and plants designated to remain. Protect against vehicular traffic, materials' dumping, chemically injurious materials, puddling or running water.
3. Provide temporary, insulated, weather tight closures at openings to the exterior to provide acceptable working conditions and protection for materials, to allow for temporary heating and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
4. Barriers and enclosures shall be in conformance with code requirements.
5. See also General Conditions

D PROTECTION

1. Protect building, equipment, furnishings, grounds and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the owner and in a time frame to be decided upon by the Owner.
2. Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finished to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
3. Provide protective coverings and barricades to prevent damage or physical injury. The Contractor shall be held responsible for, and must make good at his own expense, any water or other type of damage due to improper coverings. Protect the public and building personnel from injury.
4. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
5. Provide protective coverings for walls, projections, jambs, sills and soffits of openings. Protect finished floors from traffic, movement of heavy objects and storage. Prohibit traffic and storage on waterproofed and roofed surfaces and on lawn and landscaped areas.
6. See also General Conditions

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E SECURITY

1. Provide security program and facilities to protect work, from unauthorized entry, vandalism and theft.
2. The Contractor shall be solely responsible for damage, loss or liability due to theft or vandalism.

F TRAFFIC WAYS

1. The Contractor may use on-site paved roads and parking areas but shall not encumber same or their access. Public highways shall not be blocked by standing trucks, parked cars, material storage, and construction operations or in any other manner.
2. Contractor is to make arrangements to use flagmen to maintain traffic flow. Costs shall be paid for by the Contractor.
3. Public roads and existing paved roads, drives and parking areas on Owner's property shall be kept free from scrap or debris due to construction operations and any damage to their surface caused by the Contractor shall be repaired by him at his own expense.
4. If the Work of the Contract affects public use of any street, road, highway or thoroughfare, the contractor shall confer with the police authority having jurisdiction to determine if and how many police are needed for public safety, in addition to any barriers and signals that may be needed. The Contractor will be responsible for payment of any needed police services.

G CLEANING

1. Maintain areas under Contractor's control free of waste materials, debris, rubbish and unneeded construction material. Maintain in a clean and orderly condition.
 - a. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures and work done under this Contract, or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the Work, and the ditches, channels, drains, pipes, structures, and work, etc., shall upon completion of the Work, be left in a clean and neat condition.
 - b. On or before substantial completion of the Work, the Contractor shall, tear down and remove all temporary buildings and structures built by him; shall remove all temporary work, tools, and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around

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privies, houses, and other buildings used by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.

- c. The Contractor shall restore or replace, when and as directed, any public or private property damaged by his work, equipment, or employees to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall perform as required all necessary highway or driveway, walk and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration.
2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces before closing the space.
3. Control cleaning operations so that dust and other particulate will not adhere to wet or newly-coated surfaces.
4. Remove waste materials, debris and rubbish from site daily and dispose of off-site. No scrap/debris shall remain inside the building or anywhere on site upon final acceptance of the project.
5. The Contractor shall remove and replace all filters on all mechanical equipment prior to owner occupancy. The contractor shall remove and replace said filters during the course of the work to prevent any damage to the equipment. See also General Conditions

01 45 00 QUALITY CONTROL

- A. Comply with manufacturers' instructions and specifications for storage and use of their products.
- B. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures. They include manufacturer providing qualified personnel to observe field conditions; installation; quality of workmanship; to test, adjust and balance equipment, as applicable.
- D. Where required by the Specifications, submit certificates to the Owners rep. , executed by a responsible officer of the manufacturer, warranting that product meets or exceeds specified requirements.
- E. When required by the Specifications, submit manufacturer's data sheets, including instructions and recommendations.

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01 50 11 TEMPORARY ELECTRICITY AND LIGHTING

- A. Power and lighting may be taken from the power company's nearest pole with temporary poles, if needed, to extend the line to project. If permanent power lines have been installed before beginning project, then temporary lines can be brought in from the last pole. Upon completion of the project, remove temporary lines.
- B. Provide service required for construction with branch wiring and distribution boxes located to provide power and lighting by construction-type extension cords. Provide service to and connect general contractor's and owner's field offices.
- C. All costs of temporary power and lighting shall be paid by the Contractor.

01 50 13 TEMPORARY HEATING, COOLING AND VENTILATING

- A. Provide temporary heat during construction for work included in the Contract to counteract low temperatures or excessive dampness. Maintain until final completion of the Contract, unless otherwise approved by the Owner in writing. Windows, doors, ventilators and similar openings shall be temporarily closed. Provide heat and ventilation to maintain specified conditions for construction operations and to protect materials and finishes from damage by temperature or humidity. Costs shall be paid by the Contractor. Temporary heating methods shall comply with OSHA regulations and other applicable codes, statutes, rules and regulations.

01 50 14 TEMPORARY TELEPHONE

- A. General Contractor shall provide telephone service in his office. Telephone is to be made available to the Architect for use in connection with the Work. Local calls will be paid by the Contractor and toll calls by the respective users.

01 50 15 TEMPORARY WATER

- A. Water for construction purposes may be taken from the existing service. The Contractor shall provide connections, meter and pipe to the water main or nearest hydrant, subject to the approval of the Owner. Upon completion of work, the Contractor shall remove the temporary connections and back fill if necessary. If new water service is installed before construction is complete, the new system may be used provided it is returned to the Owner in as-new condition. The Contractor shall pay for water used, as metered.

01 50 16 TEMPORARY SANITARY FACILITIES

- A. The Contractor shall provide chemical toilets with toilet tissue. The Contractor shall maintain the facilities in a sanitary condition.
- B. If women are employed in the Work, provide separate, designated facilities for them of the same kind. Provide an adequate number of each kind of facility for each gender.

01 57 19 TEMPORARY CONTROLS

- A. The Contractor is to refer to governing codes, such as OSHA, EPA, and USDA covering most temporary environment controls.

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- B. Air quality and noise control: To reduce impact to air quality and noise during construction, the Contractor is to use water and /or calcium chloride for dust control, and construction equipment is to be maintained fully tuned and serviced.
- C. Soil erosion and sedimentation: The Contractor is to follow sedimentation and erosion control plan included in the Contract Documents.
- D. Pollution control: Construction impact from accidental spillage or discharge of hazardous substances is to be mitigated and or prevented by the Contractor maintaining equipment properly, by regular inspection for leaks, repairing all leaks immediately, and by containing and properly cleaning all leaks or spills.

01 60 00 SUBSTITUTIONS AND PRODUCT REQUIREMENTS

A. SUBSTITUTIONS AND PRODUCT REQUIREMENTS

- 1. Products are specified by reference standards, by manufacturer's name and model number or trade name. When specified only by reference standard, Contractor may select any product meeting this standard by any manufacturer. When several products or manufacturers are specified as being equally acceptable, Contractor has the option of choosing among those named. When proprietary products are specified, substitutions will be allowed only by substitution provisions specified herein.
- 2. If it is desired to use products different from those indicated in the Contract Documents, the party requesting the substitution shall make written application as described herein. The burden of proving equality of proposed substitutions rests on the party making the request for substitution.
 - a. Requests for substitution shall be made to permit adequate time for approval.
 - 1. Requests will be considered from Contractor only, following contract award.
 - 2. Contract sum shall be based only on products and system specified in the Contract Documents.
 - b. Requests for substitution shall be accompanied by technical data the party making the request desires to submit. Architect shall consider reports from independent testing laboratories, verified experience records from previous users and other printed or written information valid in the circumstances.
 - c. Requests for substitution shall indicate in what respects proposed materials or products differ from those specified.
 - d. Requests for substitution shall be accompanied by the manufacturer's dated product data describing the installation, use and care, as applicable, of proposed substitution.

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- e. Requests for substitution shall be accompanied by samples or product literature of that specified for comparison with the requested substitution if requested by the Architect.
 - f. Requests for substitution shall be accompanied by complete cost data, indicating material cost, installed cost and savings, if any, resulting from proposed substitution.
 - g. Determination as to acceptability of proposed substitution shall be made based only on data submitted.
3. The appropriate modification shall be issued to Contractor within 30 days after Contractor's submittal, if a proposed substitution is approved by Architect. Contractor shall be responsible for furnishing materials and products in accord with the Contract Documents, unless requests for substitutions are received and approved as described above.
4. Substitutions shown on shop drawings approved by the Architect does not constitute approval of Substitution.
5. Requests for substitutions shall include the following data:
- a. Date of request.
 - b. Project name.
 - c. Specification reference.
 - d. Specified item.
 - e. Proposed substitution.
 - f. Manufacturer.
 - g. Deviations from the specified item.
 - h. Manufacturer's recommendations for use and installation. List changes. Submit drawings if required for clarity.
 - i. Technical data to support request for approval. List reference standards met, submit testing laboratory reports and experience records.
 - j. Other supporting data such as brochures, samples and drawings.
 - k. Samples or product literature of specified product for comparison, if requested by Architect.
 - l. Cost data.
6. In the event that specified items cannot be delivered to the job site and incorporated into the work at such times and in such quantities as to cause no delay, then Contractor may request a substitution in the manner described above. Should the accepted substitution provide a cost savings, the contract price shall be adjusted by Change Order with Owner receiving the benefit of the net savings. No increase in the contract price shall be allowed on substitutions made after the 20-day substitution period.
7. Inability to obtain specified items due to Contractor's failure to place timely order shall not be considered reason for authorizing substitutions.

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B. DELIVERY, STORAGE AND HANDLING

1. Requirements of this section are general in nature. Refer to individual specification sections for additional, specific requirements.
2. Deliver manufactured products to project site in manufacturer's original packaging with labels and seals intact. Labels shall indicate manufacturer and product name, description, mixing and application instructions. Where applicable, labels shall indicate fire-resistive classifications.
3. Store materials and equipment under cover, off ground at least 6", except for materials not subject to damage or deterioration by contact with environmental conditions.
4. Prevent corrosion, soiling or breakage of materials or contact with deleterious materials.
5. Deliver finish materials only after spaces are enclosed and adequate indoor storage facilities are available. Deliver items such as millwork only after spaces approximate completed conditions.
6. Handle materials and equipment to prevent damage, deterioration or contamination. Install no materials which are physically damaged or stained prior to time for installation.

C TRANSPORTATION AND HANDLING

1. Materials and equipment shall be delivered, stored and handled to prevent intrusion of foreign matter and damage by weather or breakage. Packaged materials shall be delivered and stored in original, unbroken packages.
2. All materials must be stored within the Contract Limit Lines.
3. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.
4. Packages, materials and equipment showing evidence of damage will be rejected and replaced at no additional cost to the Owner.

D STORAGE AND PROTECTION

1. Store products in accordance with manufacturer's instructions with seals and labels intact and legible. Store sensitive products in weather tight enclosures; maintain within temperature and humidity range required by manufacturer.
2. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
3. Store loose granular material on solid surfaces in a well-drained area; prevent mixing with foreign matter.

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4. Arrange storage to provide access for inspection. Periodically inspect to insure products are undamaged and are maintained under required conditions. Keep log showing date, time and problems, if any.
5. Stone, masonry units and similar materials shall be stored on platforms or dry skids and shall be adequately covered and protected against damage.

01 70 00 CONTRACT CLOSEOUT

A. CLOSEOUT

1. Prior to requesting inspection by the Architect, use adequate means to assure that the Work is completed in accordance with the specified requirements and is ready for inspection.
2. Comply with procedures stated in the General Conditions of the Contract for issuance of Certificate of Completion.

B. FINAL CLEANING

1. Before final inspection, clean the work in readiness for occupancy.
2. Remove waste and surplus materials, rubbish and construction equipment and facilities from the site.

01 78 20 PROJECT RECORD DOCUMENTS

A. The Contractor shall keep one copy of the Specifications, Drawings, Addenda, approved Shop Drawings, Change Orders, Schedules and Instructions in good order at the site and marked to record all changes made during construction. The documents shall be available to the Architect/Engineer and Owner or their authorized representatives at all times. Update the documents for each job meeting.

B. Record Drawings During Construction:

1. The Contractor shall keep two sets of black (or blue) and white prints of the Contract Drawings at the site on which he shall record changes as they occur on the job. Maintain the record sets separate from documents used for construction.
2. Keep documents current; do not permanently conceal any work until required information has been recorded.
3. The Contractor shall also hire the services of an Engineer or Land Surveyor registered by the State of Connecticut to determine and record the location of exterior underground utility lines.
4. The record of exterior underground utilities shall be made at the time of installation on Mylar film. The drawing shall bear the seal of the Engineer or Land Surveyor and his statement of accuracy.
5. At the conclusion of construction, the Contractor shall turn one set of the drawings over to the Architect and one set to the owner.

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01 78 40 WARRANTIES AND GUARANTEES

- A. The Contractor shall guarantee all materials and workmanship for a period of one year from the date of acceptance of the work.. In addition, the Contractor shall furnish the warranties listed in these Specifications. Submit four copies of each to the Architect in the supplier's standard form.
- B. Submit certification that finish materials have fire rated finishes or treatment as specified.

END OF SECTION 01000

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**SECTION 03 20 01
CONCRETE REINFORCEMENT**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including the General and Supplementary Conditions, apply to the work specified in this Section.

1.02 DESCRIPTION OF WORK

- A. Furnish all labor, supervision, materials, tools and equipment necessary for, or incidental to completion of the concrete reinforcement for cast-in-place concrete as shown on the Contract Drawings and/or specified.

1.03 RELATED WORK

- A. Section 03 11 14 - Concrete Formwork
- B. Section 03 30 00 - Cast-in-Place Concrete

1.04 QUALITY ASSURANCE

- A. Allowable tolerances: Fabricating and placing tolerances as outlined in ACI 301, Chapter 5, except as modified by these specifications.

1.05 SUBMITTALS

A. Shop Drawings

- 1. The Contractor shall submit detailed drawings which clearly show location, splicing, cover, sizes, and spacing of all reinforcing and wire fabric. Schedules and diagrams shall indicate bends, sizes, and lengths of reinforcing members. All reinforcement in concrete walls and grade beams shall be shown in elevation one eighth inch equals one foot zero inch (1/8" = 1'-0") scale. All construction joints, as required on the Contract Drawings or requested by the Contractor, shall be shown with any additional reinforcement required. Show and locate all concrete openings, including those required for other Divisions. Any drawings submitted without showing construction joints and openings will be rejected and will not be reviewed.

- B. No reinforcing shall be cut, fabricated, shipped on the job site or placed before shop drawings are reviewed. Only shop drawings bearing the Engineer's stamp marked "Furnish as Submitted" or "Furnish as Corrected" shall be used in the field.

C. Certificate

- 1. The manufacturer shall submit to the Engineer certified test results stating that the reinforcing steel and welded wire fabric conform to the chemical composition and tensile and bending requirements as outlined in ASTM A615 and ASTM A185.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement to the project site in bundles, marked with metal tags indicating bar size,

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grade and length.

- B. Store reinforcing on skids or other supports above ground and protect from any damage or surface contamination, which would impair its bonding qualities.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All reinforcing bars shall conform to the requirements of ASTM A615, Grade 60.
- B. Welded wire fabric shall conform to the requirements of ASTM A185.
- C. Metal Accessories
 - 1. Provide all spacers, chairs, ties, clips and other devices required for proper placement.
- D. Epoxy adhesive shall be HIT HY 150 as furnished by Hilti, Inc., Tulsa, Oklahoma.

2.02 FABRICATION

- A. Bar reinforcing shall be fabricated cold to dimensions given on the Contract Drawings. Conform to ACI standards 318 and 315 for forming hooks and bends and for detailing, fabricating, and erecting reinforcement.
- B. Reinforcing shall be accurately formed to dimensions on drawings, details and schedules within the following tolerances:
 - Sheared Length √1 inch
 - Stirrups, Ties and Spirals √1/2 inch
 - All Other Bends √1/2 inch
- C. Reinforcing shall be bent cold and shall not be straightened or bent in a manner that will injure the materials.

PART 3 - EXECUTION

3.01 INSPECTION

- A. The Contractor shall notify the Engineer twenty-four (24) hours prior to placing concrete to inspect secured reinforcing. No concrete shall be placed until reinforcing has been inspected.

3.02 INSTALLATION

- A. Placement
 - 1. Reinforcement shall be free of paint, dirt, oil, or excessive scale or rust that might reduce its bond strength with concrete.
 - 2. Reinforcement shall be accurately placed and secured against displacement before and during the placing of concrete. Provide metal chairs, supports, and spacers to secure steel in correct horizontal and vertical position. Conform to "Recommended Practice for Placing Reinforcing Bars" (CRSI) in spacing of bolsters for slab and beam bottom reinforcing and in spacing of support bars on continuous high chairs for top slab reinforcement. The use of

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individual high chairs is prohibited.

3. No welding of bars will be allowed.
4. For exposed concrete in soffits or ceilings, bar supports shall be stainless steel, plastic, or have plastic ends of an approved type in contact with forms.
5. Reinforcement shall stop at expansion joints and continue through construction joints.
6. All reinforcing bars shall be supported and wired together to prevent displacement by construction loads or the placing of concrete beyond the tolerances specified below. On ground, solid concrete blocks, made of 3000 psi concrete, shall be used to support any reinforcing bars in slabs. Surfaces of blocks shall be sufficiently rough to insure proper bond with cast-in-place concrete. Reinforcement shall be secured against displacement with annealed iron wire ties or suitable clips at all intersections, except reinforcing for footings may be wired at alternate intersections.

B. Cast-in-Place Concrete Reinforcing Cover

- | | |
|--|--------|
| 1. Footing and grade beams cast against and permanently exposed to earth | 3" |
| 2. Walls, #6 bars and larger..... | 2" |
| 3. Piers, #5 bars, 5/8 in., wire and smaller | 1 1/2" |
| 4. Structural Slabs: | |
| a. Not exposed to weather or in contact with the ground..... | 3/4" |
| b. Exposed to weather or in contact with the ground..... | 1" |
| 5. Beams, girders, columns: Principal reinforcement, ties, stirrups or spirals | 1 1/2" |

C. Reinforcing Placing Tolerances

1. Place reinforcing as shown on drawings and schedules within the following tolerances:

Cast-in-Place Concrete Cover
to Formed Surfaces + 1/4 inch

Depth to Steel Reinforcing of:
24" or Less + 1/4 inch
More than 24" + 1/2 inch

Longitudinal Location of Bends
and Ends of Bars, Except at
Ends of Members + 2 inches

D. Splicing

1. Lap splices - tie securely with wire to prevent displacement during placement of concrete.
2. Splice bars only at the locations and to the lengths shown on the Contract Drawings or as accepted on the Shop Drawings.

E. Welded Wire Fabric

1. Fabric shall be shipped in flat sheets.
2. Wire fabric end and side laps shall be even multiple of wiring spacing and shall be not less

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than six (6") inches.

3. Wire fabric reinforcement for structural slabs shall be supported on continuous high chairs at all slab support member locations.
4. Wire fabric reinforcement for slabs on grade shall be placed in the upper third of slab depth.
5. Wire fabric for slabs on grade shall be supported on masonry blocks or other suitable supports at a spacing not to exceed four feet zero inch (4'-0") on center.
6. All exterior slabs on grade shall contain welded wire fabric unless otherwise noted.

END OF SECTION 03 20 01

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**SECTION 03 30 00
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including the General and Supplementary Conditions, apply to the work specified in this Section.

1.02 DESCRIPTION OF WORK

- A. Furnish all labor, supervision, materials, tools and equipment necessary for or reasonably incidental to completion of all cast-in-place concrete as shown on the Contract Drawings and/or specified herein.
- B. Work shall include all footings, piers, walls, slabs on grade, retaining walls, grade beams, structural slabs, concrete stairs and platforms and beams shown on the Contract Drawings.
- C. Pads and miscellaneous concrete as required for Mechanical and Electrical Divisions.
- D. Set anchor bolts and leveling plates specified in Division 5, Structural Steel.
- E. Place all anchors, inserts, dovetail slots, hangers, sleeves, and etc. which must be encased in concrete for other Divisions.
- F. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions and Supplementary General Conditions.
 - 2. Section 03 20 01 – Concrete Reinforcement
Section 07 26 00 – Vapor Barriers

1.03 QUALITY ASSURANCE

A. Testing Agency

- 1. The Owner will engage and pay for an independent commercial testing laboratory to test concrete used on this project.
- 2. Testing required under Section 2.02, Proportions, shall be by an independent commercial laboratory as approved by the Engineer, and at the Contractor's expense.

B. Quality Control

1. Compression Tests

- a. Tests shall be made in conformance with ASTM C39. Each test shall consist of four (4) cylinders made and tested by the laboratory during the progress of the project, testing as follows:
 - i. One (1) - after curing seven (7) days in the field.
 - ii. Three (3) - after curing twenty-eight (28) days in the laboratory.

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- b. At least one (1) test shall be made every one hundred (100 cy) cubic yards of concrete or fraction thereof, placed in any one concreting operation on any given day.
 - c. Concrete for each set of cylinders shall be from any one (1) sample, representative of the entire batch.
 - d. Specimens shall be made, cured and tested in accordance with ASTM C31.
 - e. When concrete is pumped, test cylinders shall be made from concrete taken at the discharge end of the pumping train.
2. Additional tests as follows shall be made from the concrete taken to mold the cylinders.
 - a. Slump test: in accordance with ASM C143.
 - b. Air-entrainment test: in accordance with ASTM C173 or ASTM C231.
 3. The Contractor shall notify the Engineer and the testing laboratory twenty-four (24) hours before concrete placement and shall cooperate in making of cylinders by the testing laboratory.

1.04 SUBMITTALS

A. Test Reports

1. Report of tests shall be submitted to the Engineer and shall include: name of job, date and location of placement, class of concrete, mix data, and slump, air content, compressive strength, age and condition of test cylinders, type of fracture, and method of curing.
2. One (1) copy of all test reports shall be promptly forwarded by the testing laboratory to the Engineer, plus one (1) copy each to the Architect, Contractor and Concrete Supplier.

B. Test Results

1. The average of the tests for any portion of the structure shall equal or exceed the specified twenty-eight (28) day compressive strength (fc).
2. No single strength test shall have a value less than 90% of the specified compressive strength (fc).
3. Where the concrete does not comply with these requirements, the Engineer may require other tests, such as cored cylinders (in conformance with ASTM C42) or load tests, all at the Contractor's expense. Should the concrete fail to pass such tests, it shall be removed and replaced at no additional cost to the Owner. In addition, the Contractor may be required to remove and replace sound portions of structure as necessary to insure safety, appearance, and durability of the structure. Additional load tests strengthening or removal and replacement of parts of structure and any costs associated with delay of projects shall be at Contractor's expense.

C. Concrete Proportions

1. See Section 2.02A thru 2.02J for additional requirements.

PART 2 - PRODUCTS

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2.01 MATERIALS

- A. Cement: domestic Portland cement conforming to ASTM C150, Type I or Type II.
- B. Fine aggregate: natural sand conforming to ASTM C33.
- C. Coarse aggregate: crushed stone or crushed washed gravel conforming to ASTM C33.
- D. Water: clean, potable.
- E. Admixtures: Each admixture shall be approved by the Engineer. No admixtures containing calcium chloride or other water soluble chlorides will be allowed. Each manufacturer shall submit a written notarized statement to the Engineer of the chloride content of each admixture. Formulate admixtures to avoid an increase in water-cement ratio or loss of strength.
 - 1. Air entraining agent: ASTM C-260.
 - 2. Retarder - Densifier: ASTM C-494, Type D.
 - 3. Accelerator: ASTM C-494 Type C.
 - 4. Water-reducing agent: ASTM C-494, Type A.
- F. Non-shrink non-metallic grout: CE CRD C-621.
- G. Curing and sealing compound: Fed. Spec. TT-C-800A Type I, ASTM C-309.
- H. Polyethylene film: See Section 07 26 00 – Vapor Barriers
- I. Curing paper shall be the approved equal of Sisalkraft Paper "Orange Label" that conforms with ASTM C171, Type I.
- J. Premolded joint filler shall be a preformed bituminous expansion type that conforms to ASTM D-994. Joint material thickness shall be one-half (1/2) inch thick, except as otherwise indicated on the drawings.

2.02 PROPORTIONS

- A. Concrete mix proportions shall be selected to produce an average compressive strength exceeding the required twenty-eight (28) day compressive strength (f_c) in accordance with ACI 318 Section 4.3, proportioning on basis of field experience; or laboratory trial batches, Section 4.4. The Contractor shall submit to the Engineer the concrete strength to which the materials were proportioned, and copies of any records that the concrete supplier may have showing standard deviations in previous mixes.
- B. Mix proportions shall be made in accordance with Method 2, as outlined in ACI 301 by the testing laboratory.
- C. Where a concrete production facility has a record, based on at least thirty (30) consecutive strength tests that represent similar materials and conditions to those expected, required average compressive strength used as the basis for selecting concrete proportions shall exceed required f_c at designated test age by at least:

- 400 psi if standard deviation is less than 300 psi
- 550 psi if standard deviation is 300 to 400 psi
- 700 psi if standard deviation is 400 to 500 psi
- 900 psi if standard deviation is 500 to 600 psi

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1. If standard deviation exceeds 600 psi, concrete proportions shall be selected to produce an average strength at least 1200 psi greater than required f_c .
- D. Strength test data for determining standard deviation shall be considered to comply with Section 2.02C, if data represents either a group of at least thirty (30) consecutive tests or a statistical average for two (2) groups totaling thirty (30) or more tests.
- E. Strength tests used to establish standard deviation shall represent concrete produced to meet a specified strength or strengths within 1000 psi of that specified for the proposed work.
- F. Changes in materials and proportions within the population of background tests used to establish standard deviation shall not have been more closely restricted than for the proposed work.
- G. After sufficient experience and test data become available from the job, using ACI 211 methods of evaluation, the standard deviation may be reduced when the probable frequency of tests more than 500 psi below required compressive strength will not exceed one in ten (1 in 100), and that probable frequency of an average of three (3) consecutive tests below required compressive strength will not exceed one in one hundred (1 in 100).
- H. If it is intended to place any concrete by pumping, a corresponding mix shall be designed for such placement and so designated.
- I. No concrete shall be placed until tests of design mixes show a twenty-eight (28) day average compressive strength at least equal to the specified design compressive strength or until the concrete design mix proportions have been accepted by the Engineer.
- J. Contractor shall submit the following data:
 1. Fine aggregate - organic content, sieve analysis, fineness modulus and specific gravity.
 2. Coarse aggregate - sieve analysis and average weight loss in accordance with ASTM C-33.
 3. Mix design, including cement brand, proportions of aggregate by weight, slump, water-cement ratio, percentage of air.
 4. Thirty (30) twenty-eight (28) day compressive test results on proposed mix that comply with Section 2.02C.
 5. Admixture-types, brand and quantity.

2.03 SPECIFIC REQUIREMENTS

- A. Concrete for Slab on Grade and exterior flatwork shall be 4,500 psi at twenty-eight (28) days and meet the values shown in the following Table:

Min. compressive strength @ 28 days (psi).....	4,500
Slump (inches)	2 1/2 - 4
Max. size coarse aggregate (inches)	1 1/2
Max. size coarse aggregate for suspended slabs and pumped concrete (inches)	1
Max. size coarse aggregate for minimum 5 inch thick slab on grade (inches)	1 1/2
Min. cement factor (sacks per cy)	7 1/2

1. Water content shall include surface water in aggregates.

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- B. All pumped concrete and concrete exposed to the weather, including site work, shall be air-entrained as follows:

Maximum Size Aggregate	Air Content % by Volume
1 1/2 inch	4 - 7
1 inch	4.5 - 7.5
3/4 inch	4.5 - 7.5
1/2 inch	5.5 - 8.5
3/8 inch	6 - 9

- C. Variations of proportions may be permitted to produce more workable materials on approval by the Engineer.

PART 3 - EXECUTION

3.01 PRIOR TO PLACING CONCRETE

- A. Soil bottoms for footings and slabs shall be accepted by the Engineer before placing concrete. The subgrade shall be free of frost before concrete placing begins.
- B. All debris, sawdust, ice, etc., is to be cleaned from place of deposit before concrete is placed.
- C. All water is to be removed from place of deposit before concrete is placed. Provide drainage or pumping as required to maintain dry excavation until concrete has taken initial set.
- D. All conduits and piping are to be dug into subgrade sufficiently so as to provide uniform slab thickness.
- E. Prior to placing any concrete, the Contractor shall notify the Engineer twenty-four (24) hours in advance so that formwork and reinforcing may be inspected. Do not place concrete until inspection has been made or waived.
- F. All dowels, anchor bolts, sleeves, inserts and other embedded items shall be set with the aid of templates and shall be securely positioned in place prior to the placement of concrete.

3.02 MIXING

- A. Concrete shall be ready-mixed in conformance with the requirements of ASTM C94 for measurement of materials, batching, mixing and delivery, and shall be discharged within one and one-half (1 1/2) hours after water is first added to the mix, except that in unusually hot weather, this maximum time may be reduced.
- B. Mixing and conveying equipment shall be thoroughly clean and free from hardened concrete and foreign materials before concrete operation is started.
- C. All materials including water shall be added to ready-mixed concrete at the batching plant. Water shall not be added to the mix on the project site. Mixing shall be continued for at least one and one-half (1 1/2) minutes prior to its use.
- D. Mixer shall produce thoroughly mixed, uniform mass, and discharge mixture without segregation. Entire batch shall be discharged before mixer is recharged.

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- E. Partially hardened concrete shall not be retempered or used.
- F. Delivery Tickets
 - 1. One (1) copy of all concrete delivery tickets shall be furnished to the Engineer on request. Contractor shall note on tickets location of placement. Delivery tickets shall provide the following information:
 - a. Date and truck number
 - b. Name of ready-mix batch plant
 - c. Contractor and job location
 - d. Cement brand, type mix number and weight in pounds
 - e. Fine aggregate weight in pounds
 - f. Maximum size of aggregate
 - g. Coarse aggregate weight in pounds
 - h. Water in gallons
 - i. Admixture, name and amount in concrete, if any
 - j. Amount of concrete in cubic yards
 - k. Time mix left plant

3.03 DEPOSITING CONCRETE

- A. Depositing of all concrete shall be in accordance with ACI 304.
- B. Concreting shall conform to the requirements of ACI 305 or ACI 306 in hot or cold weather as required. See Section 3.08.
- C. All Contractors whose work is related to the concrete or must be supported by it shall be given ample notice and opportunity to introduce and/or furnish embedded items before the concrete is placed.
- D. Unless adequate protection is provided, and approved by the Engineer, concrete shall not be placed during rain, sleet, or snow.
- E. Concrete shall be conveyed from the mixer to the place of final deposit in a practically continuous flow by methods which will prevent the separation or loss of the ingredients. It shall be placed in the forms or on grade as nearly as practicable to its final position and shall be thoroughly vibrated around all reinforcing bars and mesh to assure complete absence of voids. Under no circumstances shall partially hardened concrete be placed in the work. Concrete shall be prohibited from free-falling in excess of four (4) feet.
- F. Concrete may be pumped. Use of aluminum alloys in the pumping train is prohibited.
- G. Concrete shall be thoroughly compacted and worked into the forms and around the reinforcing by means of suitable mechanical vibrators. Sufficient vibrators shall be on hand to allow for breakdowns. Vibrators shall be run deep into the concrete and shall remain in one position until the concrete is thoroughly compacted, but not long enough to cause segregation of the aggregates.
- H. Vertical lifts shall not exceed eighteen (18") inches. Vibrate through successive lifts to avoid pour lines. Vibrate first lift thoroughly until top of lift glistens to avoid stone pockets, honeycomb, and segregation.
- I. Concrete shall be deposited continuously, and in layers of such thickness that no concrete will

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be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within section. If section cannot be placed continuously between planned construction joints, as specified, field joint and additional reinforcement shall be introduced so as to preserve structural continuity. Engineer shall be notified in any such case.

- J. Unless otherwise permitted, the work shall be so executed that a section begun on any day shall be completed in daylight on the same day.
- K. Cold joints, particularly in exposed concrete, including "honeycomb", are unacceptable. If they occur in concrete surfaces exposed to view, Engineer may require that entire section in which blemish occurs be removed and replaced with new materials at Contractor's expense.

3.04 CONSTRUCTION AND CONTROL JOINTS

A. Walls, Columns, Beams, and Slab on Grade, and Structural Slab

1. No additional construction joints, except those shown on the Contract Drawings, accepted on the shop drawings, or accepted by the Engineer will be allowed.
2. The surface of the concrete at all joints shall be hard and thoroughly cleaned prior to placing adjoining concrete.
3. The cured or partially cured concrete of construction joints, except at locations noted below, shall be dampened (but not saturated) immediately prior to the placing of fresh concrete.
4. The face of hardened concrete joints in exposed work and joints in the middle of beams, girders and slabs shall be dampened (but not saturated) and then thoroughly covered with a coat of neat cement grout of similar proportions to the mortar in the concrete. The grout shall be as thick as possible on vertical surfaces and at least one-quarter (1/4") inch thick on horizontal surfaces. The fresh concrete shall be placed before the grout has attained its initial set.
5. Construction joints shall be constructed with reinforcing continuous through joint unless otherwise shown. All key bulkhead joints shall be constructed with a key depth of one-third (1/3) the total thickness unless otherwise shown.
6. Sawcut control joints in slabs shall be saw cut within twenty-four (24) hours of concrete placement. Control joint shall be sawed to depth of one-quarter (1/4) of the slab thickness.
7. Unless otherwise shown on the Drawings, slabs on grade shall be broken down into sections with control and/or construction joints that do not exceed six hundred fifty (650 sf) square feet area and whose dimensions do not exceed a one and one half to one (1 1/2 to 1) ratio.

3.05 FINISHED CONCRETE SURFACES

A. Walls

It is the intent of this Specification that forming operations be performed in a manner which will produce sound concrete surfaces, free of bulges and offsets, with a minimum of fins, blemishes due to form defects and honeycomb areas.

1. Any exposed concrete which is not formed as shown on the Plans, or for any reason is out of alignment or level beyond tolerance specified, or shows a defective surface, shall be considered as not conforming with the intent of these Specifications; and shall be removed

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from the job by the Contractor, at his expense, unless the Engineer grants permission to patch the defective area.

2. Immediately after removing forms, all concrete surfaces shall be inspected and any pour joints, voids, pockets, or other surface defects shall be repaired at once, before the concrete is thoroughly dry.
3. Cut out surface defects which do not impair structural strength to one (1") inch depth and refill with fresh concrete. Thoroughly wet cuts immediately prior to filling with stiff concrete of approximately the same mix as the adjoining work. After a partial set, compress and rub to produce a finish similar in texture and color to adjoining work.
4. Clean all exposed surfaces, concrete and adjoining work stained by the leakage of concrete.
5. Remove wood cones remaining after the rods are snapped off, and fill holes with a concrete mortar finished to the same color and texture of surrounding concrete.
6. All surfaces on both the interior and exterior, which are exposed or are within six (6") inches of being exposed in the completed building, shall have a rubbed finish (i.e., smooth rubbed finish, or grout cleaned finish). Parging will not be accepted. Finish all rubbed concrete surfaces in accordance with ACI 301, Chapter 10.
7. Do not clean, rub or patch in freezing temperatures, or when frost is on concrete surface.
8. Permission to patch does not imply waiver of Engineer's right to require complete removal and replacement of said work if, in Engineer's opinion, said patching does not satisfactorily restore quality and appearance of work.

B. Slabs Finishing

1. All interior concrete slabs shall be finished by screeding floating, floated finish, and steel troweled to a smooth even surface in accordance with ACI 301, Section 11.7, unless otherwise noted.
2. All exterior steps and slabs and interior slab scheduled for toppings shall be finished by screed floating, floated finish and broom finish in accordance with ACI 301, Section 11.7.
3. Any slab surface finish not specified shall be finished in accordance with ACI 301, Section 11.8.
4. No dry cement or other materials shall be applied to surface of any concrete slab to absorb moisture prior to finishing.
5. Provide a positive pitch to all floor drains as shown. Pitch exterior slabs away from the building as shown on the Drawings.
6. Provide one-eighth (1/8") inch radius tooled edging at all exposed slabs and/or sidewalk edges.
7. Provide proper depression in concrete to accept specified finish floor materials.

3.06 CURING

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- A. All concrete shall be kept constantly moist and protected against any drying action for not less than seven (7) days after placing of the concrete, and shall be accomplished in the following manner:
1. Walls, Beams and Columns
 - a. Formwork shall not be removed for a minimum of three (3) days.
 - b. For the remainder of the curing period, the concrete shall be kept moist by the application of absorptive mats or other moisture retaining covering as accepted by the Engineer, kept continuously wet or curing compounds. Application of curing compound is to follow immediately behind form removal to prevent surface from drying out.
 2. All slabs, either slab on grade, shall be cured by one of the following methods and in accordance with the provisions of ACI 301, Section 12.
 - a. Wet covering such as burlap
 - b. Sprinkling, ponding
 - c. Curing compounds (note: only curing compounds approved by epoxy flooring Manufacturer are to be used)
 - d. Polyethylene film
 - e. Waterproof curing paper
 3. At slabs which are to be treated with a concrete hardener, use wet curing or other curing compounds which will not leave a film are acceptable.
 4. Where concrete is cured by employing polyethylene film or curing paper, cover surface immediately after finishing. Joints shall be lapped twelve (12") inches and all joints taped securely. Repair all rips and tears until end of curing period.
 5. The use of curing compounds on exterior slab on grade construction (sidewalks) is not permitted.

3.07 CONCRETING PRECAUTION FOR WEATHER EXTREME

- A. Cold weather: Precautions shall be taken when the temperature is at or below 40 degrees F, or at 45 degrees F and falling, in accordance with "Recommended Practice for Cold weather Concreting", ACI 306.
1. Set up a proper enclosure and heat to 50 degrees F for at least four (4) hours before starting any pour.
 2. Use a water-reducing admixture with an accelerated set, but do not use or rely upon any materials as an "antifreeze".
 3. Use vented heaters with blowers so placed that they do not produce localized hot spots which may dry out the concrete.
 4. Maintain the temperature of the concrete at not less than 50 degrees F for seventy-two (72) hours and at above freezing for an additional seven (7) days. The temperature shall then be allowed to drop gradually to the exterior air temperature before the enclosure is removed at the rate of not more than 5 degrees F per hour nor 50 degrees F in any twenty-four (24) hour period before discontinuing.
 5. All frozen concrete shall be removed from the job and replaced.

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- B. Hot weather: Precautions shall be taken when the temperature is at or above 75 degrees F, or at 70 degrees F and rising, in accordance with "Recommended Practice for Hot Weather Concreting", ACI 305. No concrete shall be placed when the air temperature is above 90 degrees F, unless the air is still and relative humidity is above eighty (80%) percent.
1. Set up proper windbreakers for concrete surfaces wherever the relative humidity is less than 70% for slight air motion or 80% for light breezes.
 2. Provide shade for placements otherwise exposed to the sun.
 3. Concrete is to be at a temperature of 80 degrees F, or less when placed. If necessary, the batching plant shall cool the aggregate by spraying or by using chilled water or ice. All such water shall be accounted for as part of the mixing water.
 4. Use an admixture with a retarded set.
 5. All forms shall be thoroughly wetted at least daily, and more often when the relative humidity is low.
 6. For slabs, maintain the required materials for curing at hand so they may be placed immediately upon steel troweling. When the concrete temperature of any slab goes above 100 degrees F, place a layer of sand on it and keep it continuously wet until the temperature is below 90 degrees F.

3.08 CONCRETE MOUNTS FOR MECHANICAL EQUIPMENT

- A. Furnish and place all concrete platforms, curbs, piers, etc., required for mechanical equipment as called for in the Mechanical Drawings. Set all anchor bolts, etc., as required.

3.09 BEAM POCKETS

- A. Fill all recessed beam bearing pockets full height and flush to cast concrete walls with concrete.

3.10 GROUTING

- A. Install non-shrink grout under all structural steel column base plates, leveling plates and bearing plates.
- B. Non-shrink grout shall be mixed in accordance with the manufacturer's printed instructions. Bedding grout shall be placed solidly between the bearing surface and base or plate to ensure that no voids remain. Finish edges at 45 degree bevel and properly cure grout.

3.11 SLAB FLATNESS\LEVELNESS TOLERANCES

- A. Finished surfaces shall be smooth, free from blemishes and trowel marks, with a maximum variation in finish elevation as defined by ACI FF/FL requirements.
- B. All floor slabs shall conform to the following ACI F-number requirements:
1. Specified overall value FF-35/FL-25
 2. Minimum local value FF-25/FL-20
- C. Floor slab flatness and levels tests on the slabs shall be conducted in accordance with the provisions set forth in ASTM E 1155. Floor tolerance measurement shall be made using a

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Dipstick Floor Profiler as manufactured by The Edward W. Face Company, Inc. of Norfolk, VA
or approved alternate method.

END OF SECTION 03 30 00

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**SECTION 04 20 00
UNIT MASONRY**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide unit masonry where shown on the drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions and Supplementary General Conditions.
 - 2. Section 07 92 00 - Sealants & Caulking
Section 08 11 13 – Metal Doors & Frames
Section 09 90 00 - Painting
 - 3. Install loose lintels of steel and other materials as shown on the drawings.
 - 4. Coordinate installation of Doors & Frames as erecting masonry.

1.02 QUALITY ASSURANCE

- A. Comply with provisions of the Supplementary General Conditions.
- B. Masonry work shall conform to all requirements of the ACI-ASCE "Specifications for Masonry Structures", ACI-ASCE 530.1-88, except as modified by the Supplemental Requirements below.
- C. Codes and Standards: The work shall conform to the latest edition and latest addenda thereto of the following codes and standards:
 - State of Connecticut Basic Building Code
 - ACI-ASCE 530-88, "Building Code Requirements for Masonry Structures"
 - ACI-ASCE 530.1-88, "Specifications for Masonry Structures"
 - Concrete blocks shall conform to ASTM C90, TYPE 1. The provisions of ASTM C90 Paragraph 7.3.1 apply with regard to imperfections.
- D. Installed compressive strength requirement to be 1500 psi; in accordance with ACI 530.1 for concrete and brick masonry.
- E. Special Inspection: The Owner will engage the services of a qualified independent agency who will function as "Special Inspector" for this project. The special inspector, as a representative of the Owner, will confirm that the provisions of the Building Code are complied with and will provide and/or supervise inspection and testing requirements, as necessary.
- F. The Owner will engage the services of an independent testing/inspection agency to inspect masonry construction in place, and to perform required tests.

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1. Any observed deviation from the Construction Documents or from approved shop drawings by the testing/inspection agency shall be brought to the immediate attention of the Contractor for corrective action. A summary of corrective work performed by the Contractor will be included in the inspection report.
- G. Inspection: In-place masonry work will be inspected to confirm compliance with requirements of the Contract Documents.
1. Inspect erection of masonry units for compliance with unit thickness, joint thickness, specified pattern and bedment area requirements.
 2. Inspect reinforcement for compliance with size, location and drawings. Inconsistencies between Contract Documents and approved Shop Drawings shall be brought to the immediate attention of the Architect for resolution.
 3. Inspect installation of anchorage devices to supporting structure for type and spacing.
 4. Record weather conditions, preconditioning and protection provided for masonry materials and assemblies when ambient temperatures fall below 40 degrees F or rise above 100 degrees F.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and Sections of the Supplementary General Conditions.
- B. Product Data: Submit manufacturer's specifications and other data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements. Include instructions for handling, storage, installation and protection. Transmit a copy of each instruction to the installer.
- C. Samples: Submit samples of each exposed masonry unit and color of masonry mortar for Architect's selections. Include in each set of samples the full range of exposed colors and textures to be expected in completed work.
- D. Mock-ups:
1. At an area on the site where approved by the Architect, provide mock-up unit masonry panel.
 - a. Make each mock-up panel approximately 4'-0" high and 4'-0" long.
 - b. Provide one mock-up panel for each combination of masonry unit, bond pattern, mortar color, and joint type used in the work.
 - c. The mock-up panels may be part of the Work, and may be incorporated into the finished work, when approved by the Architect.
 - d. Revise as necessary to secure the Architect's approval.
- E. Materials: Submit Certificates of Compliance for the following materials and products:
1. Masonry Block Standard; A.S.T.M. C-90 (latest revision) - Type I, Moisture-controlled

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2. Mortar; ASTM C270
3. Grout; ASTM C476
- 4.. Galvanized anchors; ASTM A366 (sheet steel), ASTM A36 (structural steel) or ASTM A307 (standard fasteners) with ASTM A153 zinc coating

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of the Supplementary General Conditions.
- B. Store masonry units above ground on level platforms which allow air circulation under the stacked units.
- C. Cover and protect against wetting prior to use.

PART 2 - PRODUCTS

2.01 MASONRY UNITS

- A. Exterior Masonry Units.
 1. All units shall be manufactured with W.R. Grace DRY BLOCK water repellent mortar admixture or approved equivalent.
 2. Provide in Standard 8" & 6" thicknesses 8" high and 16" long units.
 3. Units to be Manufactured by The Westbrook Concrete Block Co., Inc. P.O. Box 700 Westbrook, CT 06498
- B. Interior Masonry Units
 1. Units to be Manufactured by The Westbrook Concrete Block Co., Inc. P.O. Box 700 Westbrook, CT 06498

2.02 REINFORCING AND ACCESSORIES

- A. Masonry Reinforcing:
 1. Use Dur-O-Wal Ladur type (DA3200) spaced 16"o.c. vertical with 8 gage side wire. In 12", 8", 6" and 4" walls, center reinforcing in wall. Place reinforcing on masonry and then mortar over reinforcing. Reinforcing shall be cover by mortar to be a minimum of 5/8" to exterior and a minimum of a 1/2" to interior.
- D. Non-Metallic Expansion Joint Strips: Provide 1/8" premolded, compressible, elastic fillers of foam, closed cell rubber, neoprene, or extruded plastic, conforming to ASTM D1056, Class RE41.
- E. Bond Breaker Strips: 15-lb. asphalt roofing felt complying with ASTM D226, or 15-lb. coal-tar roofing felt complying with ASTM D227.

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- F. Pre-molded Control Joint Strips: Tee shaped PVC strips with a Shore A Durometer hardness of 85 +/-5 when tested in accordance with ASTM D2240, for standard concrete masonry unit walls.

2.03 MORTAR

- A. Mortar to be color selected by architect. Mortar to comply with the requirements of "Mortar and Grout for Reinforced Masonry", ASTM C476.
1. Portland Cement: ASTM C150, Type I, except Type III may be used for cold weather construction.
 2. Hydrated Lime: ASTM C207, Type S.
 3. Aggregates:

Fine aggregate: ASTM C144, except for joints less than 1/4" use aggregate graded with 100% passing the No. 16 sieve.

Coarse aggregate: ASTM C404, with 95% to 100% passing the 3/8" sieve.
 4. Water: Clean and potable.
- B. Mortar: One part (all parts by volume measurement) portland cement and one-quarter part lime putty or hydrated lime, and damp loose sand not less than two and one-quarter and not more than three times the sum of the volumes of cement and lime used. Minimum compressive strength in 28 days shall be 1800 psi.
- C. Use type S mortar for exterior and interior walls.
- D. Mortar joints shall be tooled and not raked.
- E. Batch Control:
1. Measure and batch materials as indicated elsewhere in this section, such that the required proportions for mortar can be accurately controlled and maintained. Measurement of sand exclusively by shovel will not be permitted.
 2. Mix mortar with the maximum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.
 3. Mix mortar ingredients for a minimum of 5 minutes in mechanical batch mixer. Use clean water free of deleterious materials which would impair the work. Do not use mortar which has begun to set, or if more than 2 1/2 hours has elapsed since initial mixing.
- F. Re-temper mortar with water as required to maintain a high plasticity.
1. On mortar boards, re-temper only by adding water within a basin formed with mortar, and by working the mortar into the water.

2.04 GROUT

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- A. Grout to conform to ASTM Specification (C476) and to be proportioned within the following limits:
1. Fine grout for filling spaces less than 4" in both horizontal directions:

Parts by volume of Portland cement complying with ASTM 150, Type I -1

Parts by volume of hydrated lime or lime putty
- 0 to 1/10

Aggregate measure in a damp, loose condition
- 2-1/4 to 3 times the sum of the volumes of the Cementitious materials
 2. Course grout for filling 4" spaces or larger in both horizontal directions:

Parts by volume of Portland cement complying with ASTM 150, Type I -1

Parts by volume of hydrated lime or lime putty
- 0 to 1/10

Aggregate measured in a damp, loose condition
- 1 to 2 times the sum of the volumes of the Cementitious materials
 3. Do not use calcium chloride in mortar or grout.

B. MIXING

1. Provide "fine or coarse grout" conforming to ASTM C476 - 80; coarse grout to have 28 day strength of 2000 psi.
2. When the minimum grout compressive strength is required to be more than 2000 psi, provide laboratory design mix prepared as required for design mixes of concrete under Section 03300 of the Specifications.
3. Proportions: For "fine and coarse grout", provide proportions in 2.04 - A. 1. and 2. above, with sufficient water to achieve fluid consistency.
4. "Fluid consistency" is interpreted as meaning as fluid as possible for pouring in place without segregation of materials.

2.05 OTHER MATERIALS

- A. Provide other materials not specifically described, but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

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- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until satisfactory conditions are corrected.

3.02 ENVIRONMENTAL CONDITIONS

- A. Protect masonry construction from direct exposure to wind and sun when erected in ambient air temperature of 99 degrees F in the shade, with relative humidity less than 50%.
- B. Protection of Work: During erection, cover tops of walls with heavy waterproof sheeting at the end of each day's work. Cover partially complete structures when work is not in progress. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
- C. Cold Weather Protection: Comply with Referenced Unit Masonry Standard for Cold Weather Construction and the following:
 - 1. Do not lay masonry units that are wet or frozen.
 - 2. Remove masonry damaged by freezing.

3.03 INSTALLATION OF MASONRY UNITS

- A. General
 - 1. Do not commence installation of the work of this Section until horizontal and vertical alignment of foundation is within 1" of plumb and the lines shown on the Drawings.
 - 2. Lay only dry masonry units.
 - 3. Use masonry saws to cut and fit masonry units.
 - 4. Set units plumb, true to line, and with level courses accurately spaced.
 - 5. Clean the surface of foundations free from dirt, debris, and latence, and expose the aggregate prior to start of installing first course.
 - 6. Accurately fit the units to plumbing, ducts grilles, openings and other interfaces, neatly patching all holes.
 - 7. Keep the walls continually clean, preventing grout and mortar stains. If grout does run over, clean immediately.
 - 8. Thickness: Build masonry construction to the full thickness shown, except, build single-wythe walls to the actual thickness of the masonry units, shown or specified.

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9. Build chases and recesses as shown and as required for the work of other trades. Provide not less than 8" of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
 10. Coordinate installation of Doors & Frames as erecting masonry.
- B. Unit Masonry pattern bonds:
1. The CMU to be in running bond with vertical joints located at center of masonry units in the alternate course below, unless otherwise indicated on drawings.
- C. Do not use chipped or broken units. If such units are discovered in the finished wall, the Architect may require their immediate removal and replacement with new units at no additional cost to the Owner.
- D. Laying up of Masonry Units:
1. Place units in mortar with full shoved bed and head joints.
 2. Align vertical cells of hollow units to maintain a clear and unobstructed system of flues.
 3. All masonry units shall be laid plumb and true to lines and shall be laid with completely filled head (vertical) and bed (horizontal) joints. Furrowing of bed joints is not permitted. Closures shall be rocked into place with the head joint mortar thrown against the two adjacent units in place. Hold racking to an absolute minimum.
 4. Provide cleanouts at the bottom of each cell of masonry units for removing mortar droppings. Do not close the cleanouts until they have been inspected and approved by the inspector.
 5. Frozen Materials and Work: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen work.
 6. Built-In Work: As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around built-in items.
 - a. Fill space between hollow metal frames and masonry solidly with mortar.
 - b. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
 7. Prevent grout or mortar from staining the face of masonry to be left exposed or painted. If grout or mortar does contact the face of such masonry, it shall be immediately removed. All sills, ledges, etc., shall be protected from dropping of mortar and door jambs and corners shall be protected from damage during construction.

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E. Face Joints/Tooling:

1. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into places. Do not swish head joints.
2. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells; also bed webs in mortar in starting course on footings, foundation walls and slabs and adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.
3. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.
4. Collar Joints: Fill joints between wythes solidly with mortar by parging, and shove units solidly into parging.
5. Horizontal and vertical face joints to be 3/8 inch thick and tooled when thumbprint hard with a round bar to produce a concave surface well bonded to the masonry at the edges.
6. Joints which are not tight at the time of tooling are to be raked out, pointed with fresh mortar and then re-tooled.

G. Joining of Work:

1. Where fresh masonry joints masonry that is partially set, the exposed surface of the set masonry shall be cleaned and lightly wetted so as to obtain the best possible bond with the new work. All loose masonry and mortar shall be removed.
2. If it becomes necessary to "Stop Off" a horizontal run of masonry, this shall be done only by racking back in each course and if grout is used, stopping the grout 4" back of the rack. Tothing is not permitted.
3. In grouted construction, when grouting is stopped for 1 hour or longer, the grout pour shall be stopped 1-1/2" below the top of the last course.

3.04 REPAIR, POINTING AND CLEANING

A. Inspection and adjustment:

1. Upon completion of the work of this Section, make a thorough inspection of installed masonry and verify that units have been installed in accordance with the provisions of this Section.

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2. Make necessary adjustments.
- B. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- C. Pointing: During the tooling of joints, enlarge any voids or holes except weep holes, and completely fill with mortar. Tool joints to a dense, smooth surface.
- Unless otherwise shown on the drawings, provide joints of concave pattern throughout. Point-up all joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
- D. Inspection and Adjustment:
1. Upon completion of the work of this Section, make a thorough inspection of installed masonry and verify that units have been installed in accordance with the provisions of this Section.
 2. Make necessary adjustments, point, or cut out and repaint, if necessary, all hole sand defective joints.
- E. Clean exposed masonry by brushing at the end of each day's work and after final painting to remove mortar spots and droppings. Comply with recommendations in NCMA TEK bulletin No. 28. and CMU manufacturer.

END OF SECTION 04 20 00

UNIT MASONRY
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**SECTION 05 50 00
METAL FABRICATIONS**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Provide miscellaneous metal work as shown on the drawings, as specified herein, and as needed for a complete and proper installation, including but not limited to rough hardware and miscellaneous metal trim, etc.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions and Supplementary General Conditions.
 - 2. Section 03 30 00 - Cast in Place Concrete
Section 08 71 00 - Builders Hardware

1.02 REFERENCES

- A. "Architectural Metal Handbook", published by the National Association of Architectural Metal Manufacturers.
- B. Welding: conform to the provisions of the Code for Welding in Building Construction - AWS D1.0-69 of the American Welding Society, including current addenda.
- C. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including "Commentary of the AISC Specifications".
- D. AISC "Specifications for the Design of Cold-Formed Steel Structural members".
- E. ASTM A307 - Specification for Carbon Steel Bolts and Studs, 50,000 psi Tensile.
- F. ASTM A36 - Specification for Structural Steel.
- G. ASTM A283 - Specification for Low and Intermediate Tensile Strength Carbon-Silicon Steel Plates for Machine Parts and General Construction.
- H. ASTM A53 - Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
- I. ASTM A663 - Specification for Steel Bars, Carbon, Merchant Quality, Mechanical Properties.
- J. ASTM A675 - Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.
- K. ASTM A501 - Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

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1.03 QUALITY CONTROL

- A. Comply with provisions of Section 01 45 00.
- B. Perform shop and/or field welding required in connection with the work of this Section in strict accordance with the recommendations of the American Welding Society.
- C. Field Measurements: Take field measurements in a timely manner prior to preparation of shop drawings and fabrication, to insure proper fitting of the work. Do not delay job progress; allow for trimming and fitting wherever the taking of field measurements before fabrication might delay the work.
- D. Shop Assembly: Preassemble items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the project site. Disassemble units only to the extent necessary for shipping and handling limitations. Clearly mark units for reassemble and coordinated installation.

1.04 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and the Supplementary General Conditions.
- B. Product Data:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 2. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.
 - 3. Shop drawings in sufficient detail to show configurations, fabrication, installation, anchorage and interface of the work of this Section with the work of adjacent trades.

1.05 PRODUCT HANDLING

- A. Comply with pertinent provisions of the Supplementary General Conditions.

PART 2 - PRODUCTS

2.01 MATERIAL STANDARDS

- A. In fabricating items which will be exposed to view, limit materials to those which are free from surface blemishes, pitting, rolled trade names, and roughness.
 - 1. For exterior use and where built into exterior walls, provide zinc-coated fasteners.
 - 2. Provide fasteners of type, grade, and class required for the particular use.

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- B. Comply with following standards, as pertinent:
1. Structural steel, steel plates, shapes, and bars: ASTM A36 or ASTM A663, A675 Grade 65;
 2. Steel tubing (hot formed, welded, or seamless): ASTM A501;
 3. Cold-finished steel bars: ASTM A108;
 4. Cold-rolled carbon steel sheets: ASTM A336;
 5. Galvanized carbon steel sheets: ASTM A526, with G90 zinc coating in accordance with ASTM A525;
 6. Steel pipe: ASTM A53, grade A, schedule 40;
 7. Bolts and nuts: ASTM A307, grade A;
 8. Concrete inserts:
 - a. Threaded or wedge type galvanized ferrous castings of malleable iron complying with ASTM A47;
 - b. Provide required bolts, shims, and washers, hot-dip galvanized in accordance with ASTM A153;
 9. Lag bolts: Provide square head type complying with Fed Spec FF-B-561;
 10. Machine screws: Provide cadmium plated steel type complying with Fed Spec FF-S-111;
 11. Washers:
 - a. Plain washers: Comply with Fed Spec FF-W-92, round, carbon steel;
 - b. Lock washers: Comply with Fed Spec FF-W-84, helical spring type carbon steel;
 12. Toggle bolts: Provide type, class, and style needed complying with Fed Spec FF-B-588;
 13. Anchorage devices: Provide expansion shields complying with Fed Spec FF-S-325;
 14. Non-shrink, non-metallic grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with Corp of Engineers, CE CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this Section.

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2.02 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

2.03 GALVANIZING REPAIR

- A. For repair of galvanizing, use a high zinc-dust content paint complying with MIL-P-21035.

2.04 FABRICATION

- A. Fabricate in ample time not to delay progress. Make delivery at job at such time as required for proper coordination.
- B. Form work in shop true to detail, with clean, straight, sharply defined profiles conforming to approved shop drawings.
- C. Connections and joints:
 - 1. Weights of connections: Adequate to safely sustain, withstand stresses, strains, to which they will be normally subjected.
 - 2. Welded joints: As strong as adjoining sections. Continuously welded joints where exposed to be dressed flush, ground smooth. Exposed spot welded joint to be close fitting in their members.
 - 3. Make up threaded connections tightly so that threads will be entirely concealed by fitting.
 - 4. Riveting, Bolting, Screwing: Unless otherwise indicated, rivet, bolt, screw heads: flat, countersunk in exposed faces of work of ornamental or finish character, elsewhere as required. Cut off bolts, screws, etc., where exposed flush with nuts or other adjacent metal. Exposed fastenings: same materials, color, finish a metal to which they apply, unless otherwise required.
- D. Anchorage provisions: Work to be built in with masonry or concrete shall be of form required for positive anchorage.
- E. Prior to shop painting or priming, properly clean metal surfaces as required for the applied finish and for the proposed use of the item.
- F. On surfaces inaccessible after assembly or erection, apply two coats of primer meeting requirements of FSTTP-645.
- G. Galvanizing: Provide a zinc coating for those items indicated or specified to be galvanized, as follows:

**METAL FABRICATIONS
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1. ASTM A153 for galvanizing iron and steel hardware.
2. ASTM A123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Set miscellaneous metal fabrications accurately in location, alignment and elevation, plumb, level, true and free of rack; measured from established lines and levels. Brace temporarily or anchor temporarily in formwork where work is to be built into concrete, masonry or similar construction.
- B. Anchor securely as shown or as required for the intended use, using concealed anchors wherever possible.
- C. Fit exposed connections accurately together to form tight hairline joints. Weld connections (comply with AWS code procedures) which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind joints smooth and touch up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- D. Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with the same material used for shop priming.
- E. For galvanized surfaces, clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05 50 00

**METAL FABRICATIONS
SECTION 05 50 00**

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SECTION 06 10 00
ROUGH CARPENTRY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work includes sills, plates, stud walls, blocking, wall and roof sheathing, exterior wall furring, ceiling framing, temporary enclosures and draft stopping, shoring, bracing and rough hardware.

1.02 RELATED WORK

- A. Section 06 20 00 - Finish Carpentry

1.03 REFERENCE STANDARDS

- A. American Forest and Paper Association (AFPA): ANSI NDS-1997 "National Design Specification for Wood Construction"
- B. Southern Pine Inspection Bureau (SPIB): SPIB "Grading Rules" (latest edition).
- C. Western Wood Products Association (WWPA): WWPA "Grading Rules for Western Lumber" (latest edition)
- D. National Lumber Grades Authority (NLGA): NLGA - "Standard Grading Rules" (latest edition)
- E. American Plywood Association (APA): APA C-20 "Plywood Specification and Grade Guide"
- F. American Wood Preserver's Association (AWPA): LP-2 "Above Ground Use, Pressure Treated with Water-Bourne Preservatives"

1.04 SUBMITTALS

- A. Submit properly marked samples of materials prior to delivery to site.

1.05 PRODUCT HANDLING

- A. All wood must be covered and completely weather protected and stored at least twelve (12") inches above grade.

PART 2 - PRODUCTS

2.01 FRAMING LUMBER

- A. All horizontal or sloping framing lumber two by six (2x6), two by eight (2x8), two by ten (2x10), and two by twelve (2x12), shall be #2 Douglas-Fir, having an allowable extreme fiber stress in bending "Fb" of 875 psi for single use and 1000 psi for repetitive member uses, and an "E" value of 1,600,000 psi, unless otherwise shown.
- B. All two by six (2x6) bearing studs, unless otherwise shown, shall be Construction Grade, having an allowable compression parallel to grain "Fc" of 1600 psi, and an "E" value of 1,500,000 psi.
- C. All two by six (2x6) lumber used as horizontal wood sill plates shall be Hem-Fir, No. 2 Grade, having an allowable extreme fiber stress in bending of 850 psi for single member use, and an "E" value of

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1,400,000 psi.

- D. All horizontal sills in contact with earth bearing slabs or concrete or masonry shall be Pressure-Treated.
- E. Light framing lumber used for studs in non-bearing walls and partitions shall not be less than Stud or Standard grade and shall have a compressive stress parallel to grain "Fc" of not less than 400 psi, Hem-Fir, Spruce, or Hemlock.
- F. Moisture content at delivery shall not exceed 19% for all general framing lumber. "Grade Mark", "Trade Mark" and Mill Identification Mark of Association having jurisdiction shall appear on each member.

2.02 WALL SHEATHING

- A. APA Rated Sheathing Structural I, exterior glue.

2.03 ROOF SHEATHING

- A. APA Rated Sheathing Structural I, exterior glue.

2.04 ROUGH HARDWARE

- A. Nails, bolts, etc., as required. Use galvanized or nonferrous items for locations exposed to moisture.

2.05 BUILDING PAPER

- A. 30# asphalt impregnated felt.

2.06 LAMINATED VENEER LUMBER

- A. Provide sizes indicated on drawings. Provide extreme fiber stress in bending "Fb" of 2600 psi and an "E" value of 1,900,000 psi. "Micro=Lam" as manufactured by Truss Joist, Inc., Boise, ID or approved equal.

2.07 JOIST AND BEAM HANGERS

- A. Provide prefabricated metal hangers for framing members which do not bear directly on top of supporting members. Beam hangers shall be top flange bearing. Hangers shall be as manufactured by Simpson Strong-Tie Co., Inc., San Leandro, CA.

2.08 WOOD PRESERVATIVE

- A. Liquid preservative with fungicide to prevent mildew and rot formation. Equal to Green #10 Cuprinol by Darworth Company, Avon, CT 06001.

2.09 OTHER MATERIAL

- A. All other material, not specifically described but required for a complete and proper installation as indicated, shall be new, suitable for the intended use, and subject to the approval of the Architect.

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PART 3 - EXECUTION

3.01 ROUGH HARDWARE

- A. Bolts, screws, nails, etc., as required. All in accordance with Connecticut State Building Code: Table 2305.2, "Fastening Schedule" or unless indicated on Drawings.
- B. All hardware and fasteners in contact with pressure treated lumber shall be hot dipped galvanized.

3.02 TEMPORARY ENCLOSURE

- A. Provide temporary enclosures, doors and dust barriers as required to protect building from weather and construction damage and to ensure building security. Upon completion, remove all temporary work and repair any damage to permanent finishes and installations. Verify requirements with Architect and Owner.

3.03 SURFACE CONDITIONS

- A. Carefully inspect the installed work of other trades and verify that all such work is complete where this installation may properly commence. Verify that rough carpentry may be performed in strict accordance with the design and all pertinent codes and regulations. In the event of discrepancy, notify Architect. Do not proceed with work until directions are received from Architect.

3.04 GENERAL FRAMING

- A. General: All rough carpentry shall produce joints true, tight, and well nailed with all members assembled as indicated. Set all horizontal and sloped members with crown up. Double members minimum for headers and trimmers.
- B. Selection of Lumber Pieces: Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making proper connections. Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
- C. Bearing: Make all bearings full unless otherwise indicated. Finish all bearing surfaces on which structural members are to rest so as to give sure and even support. Where framing members slope, cut or notch the ends as required to give uniform bearing surface. Minimum bearing one and one-half (1 1/2") inches on wood, four (4") inches on steel.
- D. Shimming: Do not shim any framing components.
- E. Alignment: On all framing members to receive a finished surface, alignment of the finish subsurface to vary not more than one-eighth (1/8") inch from the plane of surfaces of adjacent framing and furring members. Provide "padding" as required to achieve proper surfaces for finish materials.
- F. Holes and Notches: Do not bore holes closer than 2 inches from top or bottom of joists with hole diameter not to exceed one-third (1/3) the depth of member. Do not notch in middle third (1/3) of joist. Depth of notches in top or bottom of joists not to exceed one-sixth (1/6) the member depth. Notched ends not to exceed one-third (1/3) member depth. DO NOT cut holes or notches in truss

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members. Notches or holes over one (1") inch diameter in two by four (2x4) studs will require metal stud plates equal to Strong Tie SS Stud plates. Include nail stopper at all piping.

- G. Sills: Set in bed of Portland Cement mortar. Secure each member with a minimum of two (2) bolts. Secure sills to bolts with recessed washer and nut.
- H. Preservatives: Treat all wood in contact with concrete or masonry with two (2) coats of, or complete immersion for a minimum of five (5) minutes in, wood preservative. Include ends of door frames, all surfaces of sills, etc.

3.05 BLOCKING

- A. Install all blocking required to support all items of finish and to cut off all concealed draft openings, both vertical and horizontal, between ceiling and floor areas. Firestop concealed spaces with wood blocking not less than two (2") inches thick unless blocked by other framing members. Provide blocking to support edges of all soffits, flashing, etc. Provide two (2")-inch solid blocking as required for securing edges of gypsum board. Provide continuous blocking for gypsum board ceiling at all edges. Also provide blocking behind all wall or ceiling mounted accessories such as grab bars, cabinets, fans, light fixtures, plumbing lines, electrical panel boards, bathroom accessories, etc. Note that grab bars must be capable of supporting three hundred (300 LB) pounds after installation.

3.06 BACKBOARDS

- A. Install three-quarter (3/4") inch thick C-D fir plywood backboards for mounting of electrical, telephone panels, etc. Backboards to be painted by Section 09900 prior to installation of equipment.

3.07 INSTALLATION OF PLYWOOD SHEATHING OR SOLID SHEATHING

- A. Place plywood or solid sheathing with face grain perpendicular to supports and continuously over at least two (2) supports, except where otherwise specifically indicated. Center joints accurately over supports; unless otherwise indicated. Protect all plywood or solid sheath from moisture by use of all required waterproof coverings until the plywood has in turn been covered with the next succeeding component of finish

3.08 FASTENING

- A. Rough Hardware: Anchor and nail to comply with Connecticut State Building Code: Table 2305.2, "Fastening Schedule" or unless indicated on Drawings.
- B. Nailing: Use only common wire nails or spikes of the dimensions shown on the Nailing Schedule, except where otherwise specifically noted on the drawings. For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of nail less than one-half (1/2") inch the length of the nail or spike, provided, however, that 16d nails may be used to connect two (2) pieces of two (2") inch (nominal) thickness. Do all nailing without splitting wood. Prebore as required. Replace all split members.
- C. Bolting: Drill holes one-sixteenth (1/16) inch larger in diameter than the bolts being used. Drill straight and true from one (1) side only. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood. Use washers under all nuts.
- D. Screws: For lag screws and wood-screws, prebore holes same diameter as root of threads; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag-screws and wood-screws.

3.09 LAMINATED VENEER LUMBER

- A. Provide one-half (1/2") inch diameter at two (2') feet on center thru-bolts top and bottom of multiple units or as indicated on Drawings. Provide top flange hangers where laminated members are

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supported by trusses or other members.

END OF SECTION 06100

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SECTION 06 10 00**

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NEW LONDON, CT**

**SECTION 06 40 00
ARCHITECTURAL WOODWORK**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide Interior trim, paneling, countertops, installation of Doors and hardware, etc. as shown on drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this Section include but are not necessarily limited to, General Conditions and Supplementary General Conditions.
 - 2. Section 06 20 00 – Rough Carpentry
Section 06 45 05 – Simulated wood trim
Section 07 92 00 - Sealants and Caulking
Section 08 11 13 – Metal Doors & Frames
Section 08 71 00 – Builders Hardware
Section 09 90 00 - Painting

1.02 QUALITY ASSURANCE

- A. Comply with provisions of the Supplementary General Conditions.
- B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, all material, equipment and workmanship are to comply with procedures and recommendations as specified by AWI - Architectural Woodwork Quality Standards, AWI - Architectural Casework details, and ANSI 156

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and Sections 01340 and 01341 of the Supplementary General Conditions.
- B. Product Data: Contractor will submit manufacturer's specifications and installation instructions for hardware, materials, and finishes used in fabrication of cabinets and as required showing compliance with specifications.
- C. Shop Drawings: Contractor will submit shop drawings showing location and sizes of cabinets, accessories, materials, finishes, hardware types and locations, fillers, etc. Shop Drawings are to include fully dimensioned plans and elevations and indicate details of anchorage to counter top and to walls.
- D. Samples: Contractor will submit fully finished samples of following items required for countertops:
 - 1. Samples of manufacturer's standard solid surface for color selections.
 - 2. Exposed hardware of each type and finish.

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1.04 PRODUCT HANDLING & STORAGE

- A. Comply with pertinent provisions of the Supplementary General Conditions.
- B. Protect countertops during storage and handling to prevent damage, soiling and deterioration.
- C. Do not deliver woodwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, woodwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.05 PROJECT / SITE CONDITIONS

- A. Installer shall advise Contractor of temperature and humidity requirements for woodwork installation areas. Do not install woodwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.
- B. Maintain temperature and humidity in installation areas as required to maintain moisture content of installed woodwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. The fabricator of woodwork shall determine optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Fabricate Architectural Woodwork to "Custom Grade" standards of the Architectural Woodwork Institute.
- B. Wood:
 - 1. On un-exposed and semi-exposed portions, provide high density (CS236-66) particleboard or premium Grade A Hardwood Veneer Plywood, for plastic laminate finish.
 - 2. Provide only plywood fabricated with water-resistant glue by the hot plate method.

2.02 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

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- B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Deliver anchoring devices to be built into substrates well in advance of time substrates are to be built.
- B. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.
- C. Prior to installation of architectural woodwork, examine shop fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.03 FIELD MEASUREMENTS

- A. Take measurements in the field to assure proper dimensions for the work in this Section.

3.04 INSTALLATION

- A. Install the work of this Section in strict accordance with the approved Shop Drawings and the referenced standards, anchoring all items firmly into position.
 - 1. Anchor countertops securely in place with concealed fasteners, anchored into structural support members of wall construction.
 - 2. Scribe units to walls, floor and other surfaces as appropriate, with not more than 1/32" clear between the cabinet or fixture and the abutting permanent surface, and with no change of clearance in excess of 0.01" in any 4".
 - 3. Set each unit square, level, plumb, and aligned within a tolerance of one in 1000 vertically and horizontally, and within 1/4" of the designated location for free standing work.
- B. Where blocking or backing is required, coordinate as necessary with other trades to assure placement in a timely manner.
- C. Attach Countertops securely to walls. Secure to walls and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Spline and glue joints in countertops; provide concealed mechanical clamping of joint. Provide cutouts for fixtures and appliances as indicated; smooth cut edges and coat with waterproof coating or adhesive.
- D. Caulk with silicone sealant, the joint between the wall and back splashes and countertops and walls throughout the work. Glue down and secure splash plates with tap screws at all four corners. Where the joint requires it, install a back-up rod of closed cell polyethylene.

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- E. Rout, drill and otherwise prepare the surfaces as needed, and firmly install all finish hardware and accessories in accordance with the approved design and the manufacturer's recommendations.
- F. Coordinate the time of installation with availability of other trades to make required utility connections.
 - 1. Provide access panels as needed for connection and maintenance of utilities.
 - 2. Test each electrical item through at least five operating cycles, and adjust as needed to achieve optimum operation.
- G. Touch-up scratches and abrasions to be completely invisible to the unaided eye from a distance of five feet.

3.04 ADJUSTING, PROTECTION AND CLEANING

- A. Protection: Installer shall advise Contractor of final protection and maintain conditions as necessary to ensure that work will be without damage or deterioration at time of acceptance.
 - 1. Cover completed work with 4-mil polyethylene film protective enclosure, applied in a manner which will allow easy removal, will allow the casework to breath (i.e. not trap humidity), and will not damage the casework or adjoining work. Remove cover immediately before time of final acceptance.
- B. Repair damaged and defective casework wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace casework. Adjust joinery for uniform appearance.
- C. Surfaces of solid surface may be cleaned with a damp cloth or ordinary soap and water.
- D. Harsh abrasive, acidic or caustic cleaners should not be used. Stubborn dirt, greasy fingerprints, or glue spills may be removed with MFG approved cleaner.
- E. Follow precautions listed on all container labels.

END OF SECTION 06 40 00

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SECTION 06 40 00

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**SECTION 06 60 00
SIMULATED WOOD TRIM**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cellular pvc trim boards for trim.

1.02 RELATED SECTIONS

- A. Section 06 10 00 – Rough Framing

1.03 REFERENCES

- A. ASTM D792 - Density and Specific Gravity of Plastics by Displacement.
- B. ASTM D570 - Water Absorption of Plastics.
- C. ASTM D638 - Tensile Properties of Plastics.
- D. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- E. ASTM D1761 - Mechanical Fasteners in Wood.
- F. ASTM D5420 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by means of a Striker Impacted by a Falling Weight.
- G. ASTM D256 - Determining the Pendulum Impact Resistance of Plastics.
- H. ASTM D696 - Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous silica Dilatometer.
- I. ASTM D635 - Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
- J. ASTM E84 - Surface Burning Characteristics of Building Materials.
- K. ASTM D648 - Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
- L. ASTM D3679 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) Siding.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, manufacturer's catalogs, SPEC-DATA® product sheet, for specified products.
- C. Samples: Submit three material samples representative of the texture, thickness and widths shown and specified herein.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: Check with Local Building Code for installation requirements.
- B. Allowable Tolerances:
 - 1. Variation in component length: -0.00 / +1.00"
 - 2. Variation in component width: $\pm 1/16$ "
 - 3. Variation in component thickness: $\pm 1/16$ "
 - 4. Variation in component edge cut: $\pm 2^\circ$
 - 5. Variation in Density -0% + 10%
- C. Workmanship, Finish, and Appearance:
 - 1. Free foam cellular pvc that is homogeneous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square, and top and bottom surfaces shall be flat with no convex or concave deviation.

**SIMULATED WOOD TRIM
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2. Uniform surface free from cupping, warping, and twisting.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Trim materials should be stored on a flat and level surface on a full shipping pallet. Handle materials to prevent damage to product edges and corners. Store materials under a protective covering to prevent jobsite dirt and residue from collecting on the boards.

1.07 WARRANTY

- A. Provide manufacturer's 25 year warranty against defects in manufacturing that cause the products to rot, corrode, delaminate, or excessively swell from moisture.

PART II PRODUCTS

2.01 MATERIALS

- A. Acceptable products: AZEK® Trimboards as indicated on Drawings manufactured by Vycom Corporation, 801 Corey Street, Moosic, PA 18507.
- B. Requests for substitutions will be considered in accordance with provisions of Supplementary General Conditions.
- C. Material: Free foam cellular pvc material with a small-cell microstructure and density of .55 grams/cm³.
1. Material shall have a minimum physical and performance properties specified in Section C
- D. Performance and physical characteristic requirements:
- | PROPERTY | UNITS | VALUE | ASTM | METHOD |
|---------------------------------|-----------------------|----------------------------|--------|--------|
| PHYSICAL | | | | |
| Density | g/cm ³ | 0.55 | D 792 | |
| Water Absorption | % | 0.15 | D 570 | |
| MECHANICAL | | | | |
| Tensile Strength | psi | 2256 | D 638 | |
| Tensile Modulus | psi | 144,000 | D 638 | |
| Flexural Strength | psi | 3329 | D 790 | |
| Flexural Modulus | psi | 144,219 | D 790 | |
| Nail Hold | Lbf/in of penetration | 35 | D 1761 | |
| Screw Hold | Lbf/in of penetration | 680 | D 1761 | |
| Staple Hold | Lbf/in of penetration | 180 | D 1761 | |
| Gardner Impact | in-lbs | 103 | D 5420 | |
| Charpy Impact (@23°C) | ft-lbs | 4.5 | D 256 | |
| THERMAL | | | | |
| Coefficient of Linear Expansion | in/in/°F | 3.2 x 10 ⁻⁵ | D 696 | |
| Burning Rate | in/min | No burn when flame removed | D 635 | |
| Flame Spread Index | -- | 25 | E 84 | |
| Heat Deflection Temp | psi °F | 150 | D 648 | |
| Oil Canning (@140°F) | °F | Passed | D 648 | |

2.02 ACCESSORY PRODUCTS

- A. Fasteners: Use fasteners designed for wood trim and wood siding (thinner shank, blunt point, full round head) with AZEK®. Use stainless steel fasteners only. No Staples. The fasteners should be long enough to penetrate the solid wood substrate a minimum of 1 1/2". Use 2 fasteners per every framing member for trimboards applications. Trimboards 12" or wider, as well as sheets, will require additional fasteners. Fasteners must be installed no more than 2" from the end of each board. Trim should be fastened into a flat, solid substrate. Fastening AZEK into hollow or uneven areas must be avoided. Pre-drilling is typically not required unless a large fastener is used or product is installed in low temperatures.
- B. Adhesives:

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Glue all AZEK to AZEK joints such as window surrounds, long fascia runs, etc. with AZEK Adhesive, a cellular pvc cement, to prevent joint separation. The glue joint should be secured with a fastener and/or fastened on each side of the joint to allow adequate bonding time. AZEK Adhesive has a working time of 10 minutes and will be fully cured in 24 hours. If standard pvc cements are used, keep in mind these products typically cure quickly which will result in limited working time and may reduce adhesive strength. Surfaces to be glued should be smooth, clean and in complete contact with each other. To bond AZEK to other substrates, various adhesives may be used. Consult adhesive manufacturer to determine suitability.

- C. Sealants: Use urethane, polyurethane or acrylic based sealants without silicone.

2.03 FINISHES

- A. AZEK products to be painted see Paint Spec section & Drawings
- B. Preparation: No special surface preparations are required prior to painting - sanding is not necessary for paint adhesion. Surface must be clean and dry. Nail holes shall be filled with polyurethane or acrylic based caulk. Use a 100% acrylic latex paint. Follow the paint manufacturer's recommendations to apply.

PART III EXECUTION

3.01 INSTALLATION

- A. Manufacturers instructions: Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.
- B. Cutting:
AZEK products can be cut using the same tools used to cut lumber.
Carbide tipped blades designed to cut wood work well. Avoid fine tooth metal cutting blades. Rough edges from cutting may be caused by excessive friction, poor board support, or worn or improper tooling.
- C. Drilling
AZEK products can be drilled using the same tools used to drill lumber.
Drilling AZEK products is similar to drilling a hardwood. Care should be taken to avoid frictional heat buildup. Use standard woodworking drills. Do not use drills made for normal rigid pvc. Periodic removal of AZEK shavings from the drill hole may be necessary.
- D. Milling
AZEK products can be milled using standard milling machines used to mill lumber.
Relief Angle 20° to 30° Cutting speed to be optimized with the number of knives and feed rate.
- E. Routing
AZEK products can be routed using standard router bits and the same tools used to rout lumber. Carbide tipped router bits are recommended.
- F. Edge Finishing:
Edges can be finished by sanding, grinding or filing with traditional woodworking tools.
- G. Nail Location:
Use 2 fasteners per every framing member for trimboard applications. Trimboards over 12" or wider, as well as sheets, will require additional fasteners. Fasteners must be installed no more than 2" from the end of each board.
- H. Thermal Expansion and Contraction
AZEK products expand and contract with changes in temperature. Properly fastening AZEK material along its entire length will minimize expansion and contraction. When properly fastened, allow for 1/8" per 18 foot of AZEK product for expansion and contraction. Joints between pieces of AZEK should be glued to eliminate joint separation. When gaps are glued on a long run of AZEK, allow expansion and contraction at ends of the run.

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END OF SECTION

**SIMULATED WOOD TRIM
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**SECTION 07 26 00
VAPOR BARRIERS**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Vapor barriers at under slab and as shown on drawings, as specified herein and as needed for a complete and proper installation.
- B. Related Work
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions and Supplementary General Conditions.
 - 2. Section 03 30 00 – Cast-in-place Concrete

1.02 QUALITY ASSURANCE

- A. Comply with provision of Section of Supplementary General Conditions.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and Sections of the Supplementary General Conditions.
- B. Manufacturer's Data: Include specifications, installation instructions and general recommendations from the Vapor Barrier materials manufacturer for the types of products required. Include manufacturers Certification or other data substantiating that the materials comply with the requirements.

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of Sections of Supplementary General Conditions.

1.05 JOB CONDITIONS

- A. Examination of Substrate: The Installer must examine the substrate and the conditions under which the vapor barrier work is to be performed, and modify the Contractor in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Proceed with vapor barrier work only after substrate construction and framing of openings have been completed and wood blocking, nailers, curbs, vents, drains and other projections through the vapor barrier have been installed.
- C. Weather Conditions: Proceed with installation only when existing and forecasted weather conditions will permit the work to be performed in accordance with manufacturer's instructions, and will permit the immediate installation of other work to be placed over the vapor barrier.

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PART 2 - PRODUCTS

2.01 MATERIALS

- A. Tear resistant moisture barrier with a minimum permeability rating of .045 tested in accordance with ASTM E-96, test procedure A.
- B. Vapor Barrier Accessory Materials:
 - 1. Vapor Barrier Tape: Manufacturers recommended pressure sensitive tape.
 - 2. Vapor Barrier Adhesive: Approved by manufacturer.

2.02 ACCEPTABLE PRODUCTS AND MANUFACTURERS

- A. Vapor barriers: Subject to compliance with the Specifications
 - 1. "Type-65 Vapor Barrier" at underslab locations by Griffolyn Div., Reef Industries, Inc.

PART 3 - EXECUTION

3.01 JOB CONDITIONS

- A. Examination of Substrate: The Installer must examine the substrate and the conditions under which the vapor barrier work is to be performed, and notify the Contractor in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Weather Conditions: Proceed with installation only when existing and forecasted weather conditions will permit the work to be performed in accordance with manufacturers instructions, and will permit the immediate installation of other work to be placed over the vapor barrier.

3.02 INSTALLATION OF VAPOR BARRIERS

- A. Slabs:
 - 1. Install vapor barrier under slabs on grade

3.03 PROTECTION OF VAPOR BARRIERS

- A. Do not allow foot traffic on vapor barriers installed over floors. Proceed with vapor barrier installation ahead of the installation of insulation or other covering material only to the extent required for proper sequencing of the work.
- B. The Vapor Barrier installer shall advise the Contractor of required procedures for surveillance and protection of installed vapor barriers, so that continuing construction activities and the work of other trades will not result in punctures or other forms of damage or deterioration of the vapor barriers.

END OF SECTION 07 26 00

VAPOR BARRIERS
SECTION 07 26 00

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**SECTION 07 31 13
ASPHALT ROOFING SHINGLES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Asphalt roofing shingles.
- B Leak barrier and roof deck protection.
- C Metal flashing associated with shingle roofing.
- D Attic ventilation.

1.02 RELATED SECTIONS

- A Documents affecting work of this Section include, but are not necessarily limited to, General Conditions and Supplementary General Conditions.
- B Section 06 10 00 - Rough Carpentry
- C Section 07 62 00 - Flashing and Sheet Metal: Sheet metal flashing not associated with shingle roofing

1.03 REFERENCES

- A ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- C ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.
- D ASTM D 2218 – Impact Resistance of Prepared Roof Covering Materials.
- E ASTM D 3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
- F ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
- G ASTM D 3462 – Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules.
- H ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- I ASTM D 7158 - Standard Test Method for Wind-Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method).
- J UL 790 - Tests for Fire Resistance of Roof Covering Materials.
- K UL 997 - Wind Resistance of Prepared Roof Covering Materials.
- L Asphalt Roofing Manufacturers Association (ARMA)
- M National Roofing Contractors Association (NRCA)

1.04 SUBMITTALS

- A. Submit copies of GAF-Elk product data sheets, detail drawings and samples for each type of roofing product as indicated in Supplementary General Conditions.

1.05 QUALITY ASSURANCE

- A Manufacturer Qualifications: Provide all primary roofing products, including shingles,

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underlayment, leak barrier, and ventilation, by a single manufacturer.

- B Installer Qualifications: Installer must be approved for installation of all roofing products to be installed under this section.

1.06 REGULATORY REQUIREMENTS

- A Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B Install all roofing products in accordance with all federal, state and local building codes.
- C All work shall be performed in a manner consistent with current OSHA guidelines.

1.07 DELIVERY, STORAGE, AND HANDLING

- A Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.
- B Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in direct sunlight.
- C Store bundles on a flat surface. Maximum stacking height shall not exceed GAF-Elk's recommendations. Store all rolls on end.
- D Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.

1.08 WEATHER CONDITIONS

- A Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with GAF-Elk's recommendations

1.09 WARRANTY

- A Provide to the owner a GAF-Elk WeatherStopper® Golden Pledge® Warranty. Contractor must be a GAF-Elk Certified Master Elite™ Contractor.
 - 1. Material defects: Golden Pledge® Warranty shall provide 100% non prorated coverage for materials and labor for:
 - a The first 20 years, then prorated thereafter for all 30 & 40 yr shingles.
 - b The first 50 years, then prorated thereafter for all lifetime shingles.
 - c The first 20 years, then prorated thereafter on steep slope commercial buildings regardless of shingle type.
 - 2. Workmanship errors: Golden Pledge® Warranty shall provide 100% coverage for workmanship errors for the first 20 years.
 - 3. Installation must be for a full roof. Roofs installed on portions of buildings do not qualify.
 - 4. Roof system must not be installed over an existing roof, all existing roof materials must be removed to the deck.
 - 5. You must use GAF-Elk Deck-Armor™ or Shingle-Mate™ or any #15 or #30 felt.
 - 6. You must use GAF-Elk Weather Watch® or StormGuard® Leak Barrier in valleys and around dormers, sidewalls, firewalls, chimneys, plumbing vents, and skylights.
 - 7. You must use certain GAF-Elk pre-cut starter strip products (only those with factory applied adhesive) at the eaves. Note: To obtain bonus wind coverage, you must use GAF-Elk pre cut starter strip products (with factory applied adhesive) at the eaves and rakes and you must install each shingle using 6 nails.

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- a You must use COBRA® ridge ventilation with adequate intake ventilation. Master Flow® exhaust ventilation products can be substituted only if COBRA® ridge ventilation cannot be installed due to a structure's architecture. In any event, adequate ventilation should meet the following requirements:
- 8. Minimum net free ventilation area of 1 sq ft per 150 sq ft of ceiling area is required. When intake vents are located at the eaves and exhaust vents are located near the roof's peak (in a properly balanced system) for maximum air flow, ventilation may be reduced to 1 sq ft per 300 sq ft. If these standards are not met, GAF-Elk cannot be responsible for damage caused by inadequate ventilation.
- 9. You must use eligible GAF-Elk roofing shingles.
- 10. You must use GAF-Elk Ridge Cap Shingles or shingles that correspond to the shingle product you are installing.
- 11. New metal flashings must be installed. Metal drip edge must be used at eaves and is recommended at rake edges.
- 12. In addition to the requirements listed above, your installer must register and pay for this warranty. On projects that total more than 250 squares, the permanent Golden Pledge® Ltd Warranty will be issued only if the project passes GAF-Elk's final inspection. GAF-Elk reserves the right to withhold the warranty if the roof has not been installed according to GAF-Elk's written application instructions. GAF-Elk also strongly recommends that your Master Elite® Contractor schedule a start-up and at least one interim inspection on projects of 250 squares or more by contacting GAF-Elk at least three weeks prior to the start of roof work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A Acceptable Manufacturer: GAF-Elk, 1361 Alps Rd. Wayne NJ 07470. Tel: 1-973-628-3000.
- B Requests for substitutions will be considered in accordance with provisions of the Supplementary General Conditions.

2.02 SHINGLES

- A Heavyweight, impact resistant, granule surfaced self sealing asphalt shingle with a strong fiberglass reinforced Micro Weave® core and StainGuard® protection, which prevents pronounced discoloration from blue-green algae through formulation/unique blends of granules. Architectural laminate styling provides a wood shake appearance with a 5 5/8" exposure. Features GAF-Elk's patented High Definition® color blends and enhanced shadow effect. UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; Passes UL 2218, Class 4 Impact Test; ASTM D 3462; CSA 123.5-98; Dade County Approved, Florida Building Code Approved, Texas Dept of Insurance Approved, ICC Report Approval. **Timberline® ArmorShield™ II** Impact Resistant Shingles, by GAF-Elk.

- 1. Color: As selected from manufacturers' full range.

2.03 HIP AND RIDGE SHINGLES

- A Distinctive self sealing hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 25 lineal feet (7.62m) with a 5 inch (127mm) exposure. **Seal-A-Ridge® ArmorShield** Ridge Cap Shingles by GAF-Elk.

2.04 STARTER STRIP

- A Self sealing starter shingle designed for premium roof shingles. Each bundle covers approx. 100 lineal feet (30.48m) for English and metric shingles or 50 lineal feet

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(15.24m) for oversized shingles. **WeatherBlocker™** Eave/Rake Starter Strip by GAF-Elk.

2.05 LEAK BARRIER

- A Self-adhering, self sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Each Roll contains approx. 150 sq ft, 65 lbs (29.9 kg), 36" X 50' or 200 sq ft, 85 lbs (38.6 kg), 36" X 66.7'. 58 mils thick. **WeatherWatch® Leak Barrier**, by GAF-Elk.

2.06 SHINGLE UNDERLAYMENT

- A Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceed ASTM D226 and D4869. Approved by Dade County, Florida Building Code, and ICC. Each roll contains approximately 10 squares (1003 sq. ft.) of material and is 54" x 223'. **Deck-Armor™** Premium Breathable Roof Deck Protection, by GAF-Elk.

2.07 ROOFING CEMENT

- A Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.08 ROOF ACCESSORIES

- A Exterior acrylic rust resistant aerosol roof accessory paint. Each 6 oz can is available in boxes of 6 and in a wide variety of colors to compliment the roof. **Shingle-Match™** Roof Accessory Paint by GAF-Elk.

2.09 ATTIC VENTILATION

A Ridge Vents

- 1. Flexible ridge ventilator designed to allow the passage of hot air from attics. For use in conjunction with eave/ soffit intake ventilation products. Provides 16.9 inches (1430 mm/m) NFVA (Hand Nail) and 14.1 inches (1193 mm/m) NFVA (Nail Gun) per lineal foot. **Cobra® Exhaust Vent**, by GAF-Elk.

B Soffit Vents

- 1. Continuous aluminum 8ft section soffit vent. **MasterFlow™ LSV8** Series Soffit Vent by GAF-Elk.

C Roof Louvers

- 1. Rooftop mounted, slant-back designed, metal exhaust ventilator designed to evacuate hot air from attics. Each vent provides 60 sq in NFVA. **MasterFlow™ SSB 960A** Passive Roof Louver, by GAF-Elk.

2.10 NAILS

- A Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood or oriented strand board by at least 1/8 inch (3.18mm).

PART 3 EXECUTION

3.01 EXAMINATION

- A Do not begin installation until the roof deck has been properly prepared.
- B If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

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- 3.02 PREPARATION AT EXISTING ROOFS Remove all existing roofing down to the roof deck.
- B Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- C Replace damaged deck with new materials.
- D Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.
- 3.03 PREPARATION AT NEW ROOFS Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.
- B At areas that receive eaves protection membrane, fill knotholes and cracks with latex filler.
- C Install crickets on the upslope side of all chimneys in the north, any chimney wider than 24" (610mm), and on all roofs steeper than 6/12.
- 3.04 INSTALLATION OF UNDERLAYMENTS General:
1. Install using methods recommended by GAF-Elk, in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B Eaves:
1. Install eaves edge metal flashing tight with fascia boards; lap joints 2 inches (51mm) and seal with plastic cement or high quality urethane sealant; nail at the top of the flange.
2. On all roofs install GAF-Elk leak barrier up the slope from eaves edge 24 inches beyond the interior wall. Lap ends 6 inches and bond.
- C Valleys:
1. Install eaves protection membrane at least 36 (914mm) inches wide and centered on the valley. Lap ends 6 inches (152mm) and seal.
- D Hips and Ridges:
1. Install GAF-Elk leak barrier along entire lengths. If ridge vents are to be installed, position the GAF-Elk leak barrier so that the ridge slots will not be covered.
- E Roof Deck:
1. Install one layer of GAF-Elk roof deck protection over the entire area not protected by GAF-Elk leak barrier at the eaves or valley. Install sheets horizontally so water sheds and nail in place.
2. On roofs sloped at more than 4 in 12, lap horizontal edges at least 2 inches (51mm) and at least 2 inches (51mm) over eaves protection membrane.
3. On roofs sloped between 2 in 12 and 4 in 12, lap horizontal edges at least 19 inches (482 mm) and at least 19 inches (482mm) over eaves protection membrane.
4. Lap ends at least 4 inches (102 mm). Stagger end laps of each layer at least 36 inches (914 mm).
5. Lap GAF-Elk roof deck protection over GAF-Elk leak barrier in valley at least 6

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inches (152mm).

F Deck-Armor™ Application

1. Deck-Armor shall be installed over a clean, dry deck.
2. Install Weather Watch® or StormGuard® Leak Barrier at eaves, valleys, rakes, skylights, dormers and other vulnerable leak areas.
3. Lay Deck-Armor™ over deck and overlap 3" (76mm) at side laps and 6" (152mm) at end laps.
4. For exposure to rain or snow, overlap 12" (305mm) at end laps.
5. For side and end laps: fasten Deck-Armor 12" (305mm) o.c. (6" (152mm) o.c. for high wind areas).
6. For middle of the roll: fasten Deck-Armor 24" (610mm) o.c. (12" (305mm) o.c. for high wind areas).
7. For exposure to rain or snow, completely cover all side laps, end laps and fasteners with tape.
8. For long term exposure see complete Deck-Armor installation instructions for side lap detail.
9. If roof may be exposed to high winds, apply tape over all fasteners at the center of the roll to prevent rain or snow from entering at the fasteners.
10. For slopes less than 2:12, a double application of Deck-Armor is required. See complete Deck-Armor installation instructions for more information.

G Penetrations:

1. Vent pipes: Install a 24 inch (610 mm) square piece of eaves protection membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install eaves protection membrane extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Chimneys: Install eaves protection membrane around entire chimney extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
4. Rake Edges: Install metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (51mm) and seal with plastic cement; secure with nails.

3.05 INSTALLATION OF SHINGLES

A General:

1. Install in accordance with GAF-Elk's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
3. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.

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- B Placement and Nailing: For maximum wind resistance along rakes & eaves, install any GAF-Elk starter strip containing sealant or cement shingles to underlayment and each other in a 4" (102mm) width of asphalt plastic roof cement.
 - 2. Secure with 4, 5, or 6 nails per shingle per GAF-Elk's instructions or local codes.
 - 3. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
 - 4. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails.
 - 5. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
- C Valleys Install valleys using the "closed cut valley" method:
 - a Run the first course of shingles from the higher roof slope across the valley at least 12 inches (305mm).
 - b Run succeeding courses of shingles from the lower roof slope across the valley at least 12 inches (305mm) and nail not closer than 6 inches (152mm) to center of valley.
 - c Run shingles from the upper roof slope into the valley and trim 2 inches (51mm) from the center line.
- D Penetrations
 - 1. All Penetrations are to be flashed according to GAF-Elk, ARMA and NRCA application instructions and construction details.

3.06 INSTALLATION OF ATTIC VENTILATION

- A General
 - 1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.
- B Ridge / Soffit ventilation
 - 1. Install ridge vent along the entire length of ridges:
 - 2. Cut continuous vent slots through the sheathing, stopping 6 inches (152mm) from each end of the ridge.
 - 3. On roofs without ridge board, make a slot 1 inch (25mm) wide, on either side of the peak (2" (51mm) overall).
 - 4. On roofs with ridge board, make two slots 1-3/4 inches (44.5mm) wide, one on each side of the peak (3 1/2" (89mm) overall).
 - 5. Install ridge vent material along the full length of the ridge, including uncut areas.
 - 6. Butt ends of ridge vent material and join using roofing cement.
 - 7. Install eaves vents in sufficient quantity to equal or exceed the ridge vent area.
- C Roof Louvers:
 - 1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
 - 2. Install a 24 inches (610mm) square of leak barrier, centered around the hole for

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roof louvers

3. Install according to manufacturers instructions for flashing vent penetrations
4. Install eave vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer.

3.07 PROTECTION

- A Protect installed products from foot traffic until completion of the project.
- B Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION

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**SECTION 07 62 00
FLASHING AND SHEET METAL**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Provide flashing and sheet metal not specifically described in other Sections of these Specifications but required to prevent penetration of water through the exterior shell of the building. The areas to receive flashing shall be not limited to the following list : door heads, skylights, concrete sills, roof penetrations, wall penetrations, between changes of exterior finishes etc.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions and Supplementary General Conditions.
 - 2. Section 04 20 00 - Unit Masonry
Section 07 92 00 - Sealants & Caulking
Section 08 10 13 - Metal Doors and Frames

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Sections of the Supplementary General Conditions.
- B. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in current edition of "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
- C. Standard commercial items may be used for flashing, trim, reglets, and similar purposes provided such items meet or exceed the quality standards specified.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specification and other data needed to prove compliance with the specified requirements;
 - 3. Shop drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades;
 - 4. Manufacturer's recommended installation procedures which, when reviewed by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

1.04 PRODUCT HANDLING

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- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.

PART 2 - PRODUCTS

2.01 MATERIALS AND GAUGES

- A. Where sheet metal is required, and no material or gauge is indicated on the Drawings, provide the highest quality and gauge commensurate with the referenced standards.

2.02 ALUMINUM FLASHING

- A. Provide manufacturer's standard aluminum sheet recommended for general flashing applications, (ASTM B 209) in 0.032" thickness minimum; manufacturer's clear anodized finish in concealed areas.

2.03 NAILS, SCREWS, AND FASTENERS

- A. Use same material as flashing sheet, or other metal as recommended by manufacturer of flashing sheet, for improved corrosion resistance.

2.04 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Separate dissimilar metals from each other by painting each metal surface in area of contact with a permanent separation as recommended by manufacturers of dissimilar metals.

3.02 INSTALLATION - ALUMINUM FLASHING

- A. General:
 - 1. Where aluminum flashing is shown with substrate contact or other contact on ferrous metal, wood or cementitious materials, apply 15 MIL bituminous coating on substrate or as back coating on flashing, or install polyethylene underlayment.
- B. Form, fabricate, and install sheet metal so as to adequately provide for expansion and contraction in the finished work.
- C. Weatherproofing:
 - 1. Finish watertight and weather tight where so required.

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SECTION 07 62 00**

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2. Seams shall be lapped min. 8" with epoxy seam sealer or other permanent sealer recommended by aluminum manufacturer.
- D. Clean exposed aluminum surfaces of every substance which is visible or might cause corrosion of metal or deterioration of finish.

END OF SECTION 07 62 00

FLASHING AND SHEET METAL
SECTION 07 62 00

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SECTION 07 92 00
SEALANTS AND CAULKING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Throughout the Work, seal and caulk joints where shown on Drawings and elsewhere as required to provide a positive barrier against passage of moisture, air, and sound.

The required applications of exterior and interior sealant work include, but are not necessarily limited to the following general locations:

- Joints in masonry unit work
- all joints in siding
- Partition and ceiling joints
- Joints at penetrations of walls, ceilings and floors by piping and other services and equipment
- Around all cutouts for lights, cabinets, pipes, plumbing, HVAC ducts, electrical boxes, etc.

- B. Related Work

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions and Supplementary General Conditions.
2. Section 04 20 00 - Unit Masonry
Section 06 10 00 – Rough Carpentry
Section 06 40 00 - Architectural Woodwork
Section 08 10 13 - Metal Doors and Frames

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Section of the Supplementary General Conditions.
- B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.

- B. Product Data:

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specification and other data needed to prove compliance with the specified requirements.

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3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.
 4. Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.
- C. Samples: Accompanying the submittal described above, submit samples of each sealant, each backing material, each primer and each bond-breaker proposed to be used.

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.
- B. Do not retain at the job site material which has exceeded the shelf life recommended by its manufacturer.

1.05 JOB CONDITIONS

- A. Installer must examine joint surfaces and backing, and their anchorage to the structure, and conditions under which joint sealer work is to be performed, and notify contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- B. Weather conditions: Do not proceed with installation of sealants under adverse conditions, or when temperatures are below or above manufacturer's recommended temperature range for installation.

PART 2 - PRODUCTS

2.01 SEALANTS

- A. Except as specifically otherwise approved by the Architect, use only the types of sealants described in this Article.
 1. For interior areas: Mildew Resistant Silicone Sealant: One part, TT-S-001543A, TT-S-00230C, Class A and ASTM C920, recommended by manufacturer for use in interior wet areas, Pecora 898 low emitting VOC
 2. Precompressed Expanding Foam Sealants: manufacturer's standard polymer modified, asphalt impregnated precompressed expanding foam sealant, with movement capability of +/- 25% (total 50%) of its nominal size, without stain, migrating, hardening or other performance failure.
 4. Exterior use areas: One part, low modulus, elastomeric sealant: Pecora 864 NST Building Sealant
 5. Provide fire stop sealants per Section 07270.
 6. Acoustical sealant: non-hardening, non-drying sealant meeting ASTM D217: Tremco Acoustical Sealant; U.S. Gypsum Acoustical Sealant, Pecora BA-97, BA-98 Acoustical Sealant. Rated wall and ceiling conditions use fire rated sealant see section 07270 Firestopping

SEALANTS AND CAULKING

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- B. Colors:
1. Colors for each sealant installation will be selected by the Architect from standard colors normally available from the specified manufacturers.
 2. Should such standard colors not be available from the approved manufacturer except at additional charge, provide such colors at no additional cost to the Owner.
 3. In concealed installations, and in partially or fully exposed installations where so approved by the Architect, use standard gray or black sealant.

2.02 PRIMERS

- A. Use only those primers which are non-staining, have been tested for durability on the surfaces to be sealed, and are specifically recommended for the installation by the manufacturer of the sealant used.

2.03 BACK UP MATERIALS

- A. Use only those backup materials which are specifically recommended for this installation by the manufacturer of the sealant used, which are non-absorbent, and which are non-staining.
- B. Acceptable types include:
1. Closed-cell resilient urethane or polyvinyl-chloride foam;
 2. Closed-cell polyethylene foam; rod shall be used as a joint backing material for ½" openings and smaller; open cell "Denver Rod" or equal for 5/8" openings and larger.
 3. Closed-cell sponge of vinyl or rubber.
 4. Open-cell "Denver Foam" or equal for openings 5/8 inch and larger.
- C. Preformed support strips for ceramic tile control joint and expansion joint work: Use polyisobutylene or polychloroprene rubber.

2.04 BOND-PREVENTATIVE MATERIALS

- A. Use only one of the following as best suited for the application, and as recommended by the manufacturer of the sealant used:
1. Polyethylene tape, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials as indicated.
 2. Aluminum foil complying with MIL-A-148E.

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3. Wax paper complying with Fed Spec UU-P-270.

2.05 MASKING TAPE

- A. For masking around joints, provide masking tape complying with Fed Spec UU-T-106c.

2.06 ADHESIVE AND TOPCOAT

- A. Manufacturer recommended epoxy adhesive and topcoat used in conjunction with precompressed expanding foam sealant.

2.07 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Concrete surfaces:

1. Install only on surfaces which are dry, cured, sound, well brushed, and wiped free from dust.
2. At open joints, remove dust by mechanically blown compressed air if so required.
3. Use solvent to remove oil and grease, wiping the surfaces with clean rags.
4. Where surfaces have been treated, remove the surface treatment by sandblasting or wire brushing.
5. Remove laitance and mortar from joint cavities by wire brushing, applying solvent wipe or other means recommended by particular manufacturer.
6. Where backstop is required, insert the approved backup material into the joint cavity to the depth needed.

B. Steel Surfaces:

1. Steel surfaces in contact with sealant:
 - a. Sandblast as required to achieve acceptable surface for bond.
 - b. If sandblasting is not practical, or would damage adjacent finish, scrape the metal or wire brush to remove mill scale.

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- c. Use solvent to remove oil and grease, wiping the surfaces with clean rags.
 - 2. Remove protective coatings on steel by sandblasting or by using a solvent which leaves no residue.
- C. Aluminum Surfaces:
 - 1. Aluminum surfaces in contact with sealant:
 - a. Remove temporary protective coatings, dirt, oil, and grease.
 - b. If sandblasting is not practical, or would damage adjacent finish, scrape the metal or wire brush to remove mill scale.
 - c. Use solvent to remove oil and grease, wiping the surfaces with clean rags.
 - 2. Use only such solvents to remove protective coatings as are recommended for that purpose by the manufacturer of the aluminum work, and which are non-staining.

3.03 INSTALLATION OF BACKUP MATERIAL

- A. Use only the backup material recommended by the manufacturer of the sealant used, and approved by the Architect for the particular installation, compressing the backup material 25% to 50% to achieve a positive and secure fit.
- B. When using backup of tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.

3.04 PRIMING

- A. Use only the primer recommended by the manufacturer of the sealant, and approved by the Architect for the particular installation, applying it in strict accordance with the manufacturer's recommendations as approved by the Architect.

3.05 BOND-BREAKER INSTALLATION

- A. Provide an approved bond-breaker where recommended by the manufacturer of the sealant, and where directed by the Architect, adhering strictly to the installation recommendations as approved by the Architect.

3.06 INSTALLATION OF SEALANTS - GENERAL

- A. All sealant work shall strictly conform to the sealant manufacturer's technical instructions for surface preparation and application procedures to accomplish a weather tight seal.

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- B. Prior to start of installation in each joint, verify the joint type according to details on the Drawings, or as otherwise directed by the Architect, and verify that the required proportion of width of joint to depth of joint has been secured.
- C. Equipment:
 - 1. Apply sealant under pressure with power-actuated or hand gun, or by other appropriate means.
 - 2. Use guns with nozzle of proper size, and providing sufficient pressure to completely fill the joints as designed.
- D. Thoroughly and completely mask joints where the appearance of sealant on adjacent surfaces would be objectionable.

3.07 APPLICATION OF SEALANT

- A. Joints and spaces to be sealed shall be clean, dry and free from dust. Clean metal surfaces as recommended by sealant manufacturer to remove all surface oils; remove traces of existing sealant or caulking as required to assure a tight bond with new sealant.
- B. After cleaning, apply primer if required by the sealant manufacturer, to all joint surfaces, taking care not to stain adjacent surfaces.
- C. Exterior joints shall be backed with joint backing material to eliminate back-bond. Where joint width is less than ½", sealant depth shall be approximately one half its width all in accordance with the manufacturer's instructions.
- D. Extreme care shall be taken to prevent smearing onto adjacent surfaces. Material shall be heated as recommended by the manufacturer. Joints shall have a neat, uniform, slightly concave appearance.
- E. Install sealants to depths as shown or, if not shown, as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of bead.
 - 1. For sidewalks, pavements and similar joints subject to traffic and other abrasion and indentation exposures, fill joints to a depth equal to 75% of joint width, and neither more than 5/8" deep nor less than 3/8" deep.
 - 2. For normal moving joints but not subject to traffic, fill joints to a depth equal to 50% of joint width, but no more than ½" deep nor less than 1/4" deep.
 - 3. For joints sealed with non-elastomeric sealants and caulking compounds, fill joints to a depth in the rate of 75% to 125% of joint width.
- F. Tool joints within ten (10) minutes of application. Remove masking tape immediately after the joints have been tooled.
- G. After applying the sealant and after a "skin" has formed do not disturb the joint for 48 hours.

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- H. The sealing compound shall be thoroughly bonded to the joint surfaces and shall be free from voids or entrapped air. Joints that do not meet these requirements, as determined by the Architect shall be corrected by removing the sealing compound, thoroughly cleaning the joints, and satisfactorily resealing or recaulking the joints, at no additional expense to the Owner; material removed from the joints shall not be reused in the work.

3.08 APPLICATION OF PRECOMPRESSED EXPANDING FOAM SEALANT

- A. Refer to preparation of concrete surfaces, Section 3.02 A. of this Specification.
- B. Prime both sides of the joint face from slab surface down the full depth of sealant plus ½", with epoxy adhesive, recommended by sealant manufacturer.
- C. Install precompressed sealant flush and level to finish concrete slab surface.
- D. Prime mitered ends of sealant with manufacturer's topcoat to ensure seal integrity between successive lengths.
- E. Apply topcoat along entire length of installed sealants to a thickness of 1/32" minimum. Application by brush to overlap deck 1/4" on each side of sealant.

3.09 CURING AND PROTECTION

- A. Cure sealants and caulking compound in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability.

3.10 CLEAN UP:

- A. Clean adjacent surfaces free from sealant as the installation progresses, using solvent or cleaning agent recommended by the manufacturer of the sealant used.

END OF SECTION 07 92 00

SEALANTS AND CAULKING

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**SECTION 08 11 13
METAL DOORS AND FRAMES**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Work included: Provide metal doors and frames, complete in place with finish hardware installed, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
 - Section 04200 Masonry
 - Section 06200 Carpentry
 - Section 07920 Sealant & Caulking
 - Section 08700 Builders Hardware
 - Section 09900 Painting

1.02 REFERENCES

- A. ASTM E 152, Fire tests of door assemblies
- B. ASTM A 525, Specifications for sheet steel, zinc coated (hot-dip galvanized process)
- C. ANSI/SDI-100, Performance specifications for standard steel doors and frames.
- D. ANSI/SDI-119, Performance test procedures for steel door frames and anchors.
- E. NFPA-80, Standard for Fire Doors and Windows.
- F. NFPA-101, Life Safety Code.
- G. ANSI-A151.1, Test procedure and acceptance criteria for physical endurance, steel doors and frames.
- H. ANSI-A224.1, Test procedure and acceptance criteria for prime painted steel surfaces for steel doors and frames.
- I. SDI-107, "Hardware on Steel Doors (reinforcement - application)"

1.03 QUALITY ASSURANCE

- A. Comply with provisions of Section 01400.
- B. Unless specifically otherwise approved by the Architect, provide all products from a single manufacturer. Fabricate side panels and transom panels to match doors in all respects unless otherwise indicated.

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- C. Hollow metal supplier shall be a qualified direct distributor of products to be furnished. In addition, the distributor shall have in its regular employment an AHC and/or CDC or person of equivalent experience who will be available at reasonable times to consult with the Architect, Contractor and Owner regarding any matters affecting the door and frame openings.
- D. Provide doors and frames complying with the Steel Door Institute's "Recommended Specification, Standard Steel Doors and Frames" (SDI-100), and as herein specified.

1.04 SUBMITTALS

- A. Comply with the pertinent provisions of Article 5 of the General Conditions and Sections 01340 and 01341 of the Supplementary General Conditions.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specification and other data needed to prove compliance with the specified requirements.
- C. Shop drawings in sufficient detail to show each frame type, door elevation type, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints, connections, and anchorage. Interface the work of this Section with the work of adjacent trades.
- D. Manufacturer's recommended installation procedures.

1.05 PRODUCT HANDLING

- A. Comply with pertinent provisions of Sections 01610 and 01620.
- B. Deliver doors and frames cardboard wrapped, crated palletized and otherwise protected during transit and site storage.
- C. Inspect doors and frames upon delivery for damage. Minor damages may be repaired, provided refinished items are equal in all respects to new work and acceptable to the Architect. Otherwise, remove and replace all damaged items.
- D. Store doors and frames at the building site in a dry and secure place.
 - 1. Place units on a minimum 4 inches high wood blocking.
 - 2. Avoid use of non-vented plastic or canvas shelters which could create a humidity chamber.
 - 3. If cardboard wrapper on door becomes wet, remove carton immediately.
 - 3. Provide 1/4 inch spaces between stacked doors to promote air circulation.

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1.06 WARRANTY

- A. Upon completion of this portion of the work, and as a condition to its acceptance, deliver to the Owner two (2) copies of a written warranty agreeing to replace work of this Section which fails due to defective materials or workmanship within one (1) year after the date of Substantial Completion.
- B. Failure due to defective materials or workmanship is deemed to include, but is not limited to:
 - 1. Failures in operation or operating component or components.
 - 2. Leakage or air infiltration in excess of the specified standard.
 - 3. Deterioration of the finish to an extent visible to the unaided eye.
 - 4. Defects which contribute to unsightly appearance, potential safety hazards or potential untimely failure of the work of this Section, or the work as a whole.

1.07 SEQUENCE AND SCHEDULING

- A. Deliver all doors and frames to the site in a timely manner so not to delay progress of other trades.
- B. Issue purchase orders to frame, door and other hardware suppliers so not to interfere with normal quoted delivery of materials.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. The following manufacturers are acceptable:
 - 1. Ceco Corporation, Oakbrook, IL
 - 2. Curries Company, Mason City, IA
 - 3. Steelcraft Manufacturing Company, Cincinnati, OH

2.02 MATERIALS

- A. Hot Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
- B. Cold Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality,

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complying with ASTM A 526, with ASTM A 525, G60 zinc coating (minimum), mill phosphatized.

- D. Supports and Anchors: Fabricate of not less than 16 gauge sheet steel. Galvanize after fabrication, those units which are to be built into exterior walls, complying with ASTM A 153, Class B.
- E. Coating materials - Primer: Use manufacturer's standard rust inhibiting primer conforming to ANSI-A-224.1-1980.

2.03 FABRICATION/METAL DOORS & FRAMES

- A. Fabricate hollow metal units to be rigid, neat in appearance, and free from defects, wrap or buckle. Accurately form metal to required sizes and profiles. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at the project site. Weld exposed joints continuously; grind, dress, and make smooth, flush and invisible. Metallic filler to conceal manufacturing defects is not acceptable.
- B. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.
- C. Type and design:
 - 1. Doors: Provide full-flush design, in dimensions and types shown on the Drawings, as indicated on the Door Schedule in the Drawings, in 14 gauge for all doors, with optional 16 GA ribs, 14 GA face skin and properly reinforced for the finish hardware described in Section 08700 of these Specifications.
 - 2. Frames: Provide welded frames of the types and dimensions shown on the Drawings, as indicated on the Door Schedule in the Drawings, in 12 gauge for all doors, properly reinforced for the finish hardware described in Section 08700 of these Specifications.
 - 3. Door, frame & hardware shall be rated for 120 mph winds minimum with impact from wind-borne debris. Provide manufacturer testing data.
- D. Preparation for hardware:
 - 1. Reinforcement: Reinforce components for hardware installation in accordance with S.D.I.-107.
 - a. All lock, exit device and closer reinforcements shall be "box" type. Reinforcing attached to one door skin only will not be accepted. Lock reinforcement to be minimum of 16 gauge; closer reinforcement to be minimum 14 gauge.
 - b. All hinge reinforcement on doors is to be channel type, minimum 8

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gauge, continuous form top to bottom of door, and welded to face sheets.

E. Finish:

1. All doors and frames to be galvanized.
2. Pre-clean and shop prime each door and frame for finish painting which will be performed at the job site under Section 09900 of these Specifications.

2.05 FINISH HARDWARE

A. Procedures:

1. Perform all machining and reinforcing for finish hardware to doors and frames at the factory, except do not drill or tap for surface mounted units until time of installation at the site.
2. Comply with finish hardware manufacturer's instructions and template requirements.
3. Sound and light seals, specified below, to be fitted to the hinge, lock and head and an automatic door bottom to be installed at the sill of the door leaf. All seals should be continuous with no interference from door hardware such as closures, panic bars, etc.
4. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware.
5. Reinforce hollow metal units to receive surface-applied hardware. Drilling and taping for surface-applied finish hardware may be done at the project site.
6. Use concealed fasteners to the maximum extent practicable.
7. Locate finish hardware as shown on the final shop drawings.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Installer must examine substrate and conditions under which steel doors and frames are to be installed and notify the Contractor in writing of any conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

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3.02 INSTALLATION

A. Door installation:

1. Install hollow metal doors in frames using hardware specified in Section 08700 - Finish Hardware.
2. Clearances at edge of doors:
 - a. Between door and frame at head and jambs: 1/8 inch
 - b. At meeting edges of pairs of doors and at mullions: 1/8 inch
 - c. At transom panels, without transom bars: 1/8 inch.
 - d. At sills without thresholds: 5/8 inch maximum above finished floor
 - e. At sill with thresholds: 1/8 inch above threshold

B. Placing frames:

1. Where practicable, place frames prior to construction of enclosing walls and ceilings.
2. Set frames accurately into position, plumbed, aligned and braced securely until permanent anchors are set.
3. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
4. Install at least six (6) wall anchors per jamb at hinge and strike levels and two (2) per head. Provide anchors set in masonry wall or expansion fasteners as indicated on drawings.
5. Fit hollow metal doors accurately in their respective frames, within clearances specified in SDI-100.

3.03 ADJUST AND CLEAN

A. Final adjustments:

1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.
2. Leave work in complete and proper operating condition.
3. Remove defective work and replace with work complying with the specified requirements.

END OF SECTION 08100

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**SECTION 08 36 13
SECTIONAL DOORS**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents, including General and Supplementary Conditions, and Division 1 General Requirements, apply to the work of this Section.

1.02 SUMMARY

- A. The work of this Section includes upward-acting sectional doors.
- B. Related Sections: Other specification sections which directly relate to the work of this Section include, but are not limited to, the following:
 - 1. Section 05 50 00 - Miscellaneous Metal
 - 2. Section 08 70 00 - Builders Hardware
 - 3. Section 09 90 00 - Painting
 - 4. Electrical

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each type of sectional door. Include both published data and any specific data prepared for this project.
- B. Shop Drawings: Submit shop drawings for approval prior to fabrication. Include detailed plans, elevations, details of framing members, required clearances, anchors, and accessories. Include relationship with adjacent materials.

1.04 QUALITY ASSURANCE

- A. Manufacturer: Sectional doors shall be manufactured by a firm with a minimum of five years experience in the fabrication and installation of sectional doors. Manufacturers proposed for use, which are not named in these specifications, shall submit evidence of ability to meet performance and fabrication requirements specified, and include a list of five projects of similar design and complexity completed within the past five years.
- B. Installer: Installation of sectional doors shall be performed by the authorized representative of the manufacturer.
- C. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.
- D. Pre-Installation Conference: Schedule and convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products in labeled protective packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage from weather, excessive temperatures and construction operations.

PART 2 - PRODUCTS 2.01 ACCEPTABLE MANUFACTURER

- A. Provide sectional doors by Overhead Door Corporation, Dallas, Texas; Telephone 800-887-3667 or 214-233-6611; Fax 214-233-0367.

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2.02 STEEL SECTIONAL DOORS

- A. Trade Reference: 416 Series Steel Doors by Overhead Door Corporation.
- B. Sectional Door Assembly: Steel door assembly with rabbeted meeting rails to form weathertight joints and provide full-width interlocking structural rigidity. Units shall have the following characteristics:
 - 1. Panel Thickness: 2"
 - 2. Exterior Surface: Flush.
 - 3. Steel: Minimum 16 gauge, galvanized.
 - 4. Center and End Stiles: 16 gauge.
 - 5. Standard Springs: 10,000 cycles. (High cycles.)
- C. Finish and Color: Factory-applied baked-on white polyester.
- D. Windload Design: 130 mph as required by code.
- E. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
- F. Lock: Interior mounted slide lock. (Keyed lock.)
- G. Weatherstripping: Flexible PVC on bottom section. (Jamb seals.)(Header seals.)
- H. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
- I. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
 - 1. Entrapment Protection: Photoelectric sensors.
 - 2. Operator Controls: Push-button at interior, Key at exterior, operated control stations with open, close, and stop buttons for surface mounting
 - 3. Special Operation: Pull-rope release automatic opening device, vehicle detector operation, commercial light package.

PART 3 - EXECUTION 3.01 PREPARATION

- A. Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Strictly comply with manufacturer's installation instructions and recommendations. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
- B. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.03 ADJUSTING AND CLEANING

- A. Test sectional doors for proper operation and adjust as necessary to provide proper operation without binding or distortion.
- B. Touch-up damaged coatings and finishes and repair minor damage. Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer of material or product being cleaned.

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**SECTION 08 70 00
BUILDERS HARDWARE**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Instruction to Bidders, AIA Document A201, "The General Conditions of the Contract for Construction, the Supplementary General Conditions are a part of this Section and shall be binding on the Contractor and/or Subcontractor who performs this Work. Note also all Addenda.

1.02 SUMMARY

- A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.
- B. This Section includes the following:
 - 1. Hinges.
 - 2. Key control system.
 - 3. Lock cylinders and keys.
 - 4. Lock and latch sets.
 - 5. Bolts.
 - 6. Push/pull units.
 - 7. Closers.
 - 8. Protection plates.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 08100 "Standard Steel Doors and Frames" for silencers integral with hollow metal frames.
- D. Products furnished but not installed under this Section include:
 - 1. Cylinders required for locks on aluminum entrance doors.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.
- B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
- C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand function, and finish of door hardware.

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1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into "hardware sets" indicating complete designation of every item required for each door or opening. Include the following information:
 - a. Type, style, function, size, and finish of each hardware item.
 - b. Name and manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of each hardware set cross referenced to indications of Drawings both on floor plans and in door and frame schedule.
 - e. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for hardware.
 - g. Door and frame sizes and materials.
 - h. Keying information.
 2. Submittal Sequence: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.
 3. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.
- D. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provision are made for locating and installing door hardware to comply with indicated requirements.

1.04 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer.
- B. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, and has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project. Employs an experienced architectural hardware consultant (AHC) who is available to Owner, architect, and Contractor, at reasonable times during the course of the Work, for consultation.
 1. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.

1.05 PRODUCT HANDLING

- A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.
- B. Packaging of door hardware is responsibility of supplier. Upon receipt of material by hardware supplier from manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.
- C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

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- D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).
- E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.06 MAINTENANCE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements that Door, frame & hardware shall be rated for 120 mph winds minimum with impact from wind-borne debris. Provide manufacturer testing data., provide products by one of the following as part of "STORMPRO 320 & 361" by Ceco or Curries Door & Frame System:
 - 1. Butts and Hinges:
 - a. Markar – HG-305 continuous hinge w/tamperproof screws
 - b. McKinney Builders Hardware – MCK-HG305 continuous hinge w/tamperproof screws
 - 2. Key Control System:
 - a. Key Control Systems, Inc.
 - b. Telkee Inc.
 - 3. Cylinders and Locks: (no substitutions)
 - a. Sargent – FM7100
 - 1. The Three-Point locking system device is part of an integrated door, frame and hardware assembly UL-approved to both FEMA 361 and FEMA 320 guidelines for both inswing and outswing doors
 - 2. Units shall be manufacturing in compliance with NFPA 80 and NFPA 101 life-safety requirements and approved for usage on up to 3-hour, UL10b of 10c fire rated openings
 - 3. Latchbolt Construction: a. Mortised Center bolt:single piece, 13 gage chrome plated steel lock case with 3/16" thick stainless steel front. Stainless steel, 1" throw deadbolt. 2-3/4" backset standard with 1/4" stainless steel center bolt strike b. Top Latch: Through-hardened steel latchbolt with 7/8" projection, 1/8" steel latchbolt front, and 5/8" stainless steel latch housing secured with 1/4-20 Holo-Krome® fasteners c. Bottom Bolt: 3/4" diameter steel nylon coated bolt with 3/4" projection and 1/8" steel reinforcement plate. Brass strike housing secured with 1/4-20 Holo-Krome® fasteners
 - 4. Provide devices with heavy-duty, brass escutcheon trim and solid cast levers matching the design style and architectural finishes as the balance of the lockset and latches specified

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4. Flush Bolts;
 - a. Rockwood Manufacturing.
 - b. H. B. Ives, A Harrow Company.
 - c. Hager Hinge Co.

5. Push/Pull Units: Stainless steel satin finish
 - a. Rockwood Manufacturing.
 - b. H.B. Ives, A Harrow Company.
 - c. Hager Hinge Co.

6. Overhead Closers:
 - a. Sargent - SRI 421 PCTHB TB EN (no substitutions)

7. Kick and Mop Plates: Stainless steel satin finish, 1x" high x 2" less than door width for kicks and 1" less for mops.
 - a. Rockwood.
 - b. Hager Hinge Co.
 - c. H. B. Ives, A Harrow Company.

8. Wall Stop (at all doors except where noted):
 - a. Rockwood Manufacturing.
 - b. H. B. Ives.

2.02 SCHEDULED HARDWARE

- A. Requirements for each type of finish hardware are indicated on the "Door Schedule". Products are identified by using hardware designation numbers of the following:
 1. Manufacturer's Product Designations: The product designation and name of one manufacturer are listed for each hardware type required for the purpose of establishing minimum requirements. Provide either the product designated or, where more than one manufacturer is specified under the Article "Manufacturers" in Part 2 for each hardware type, the comparable product of one of the other manufacturers that complies with requirements.
 2. ASNS/BHMA designations used elsewhere in this Section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this Section.
 - a. Butts and Hinges: ANSI/BHMA A156.1.
 - b. Bored and Pre-assembled Locks and Latches: ANSI/BHMA A156.2.
 - c. Door Controls - Closers: ANSI/BHMA A156.4.
 - d. Auxiliary Locks and Associated Products: ANSI/BHMA A156.5.
 - e. Architectural Door Trim: ANSI/BHMA A156.6.
 - f. Template Hinge Dimensions: ANSI/BHMA A156.7.
 - g. Door Controls - Overhead Holders: ANSI/BHMA A156.8.
 - h. Auxiliary Hardware: ANSI/BHMA A156.16.
 - i. Self-Closing Hinges and Pivots: ANSI/BHMA A156.17.
 - j. Materials and Finishes: ANSI/BHMA A156.18.

2.03 MATERIALS AND FABRICATION

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- A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.
 - 1. Manufacturer's identification will be permitted on rim of lock cylinders only.
- B. Base Metals: Product hardware units of basic metal and forming methods indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units. Product hardware units to be applicable ANSI/BHMA A156 series standards for each type of hardware item, and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- C. Fasteners: Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- D. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
- E. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified area available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.04 HINGES, BUTTS, AND CONTINUOUS (PIANO) HINGES

- A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- B. Screws: Provide Phillips flat-head screws complying with the following requirements:
 - 1. For metal doors and frames install machine screws into drilled and tapped holes.
 - 2. For wood doors and frames install wood screws.
 - 3. For fire-rated wood doors install #12 x ¼ inch, threaded-to-the-head steel wood screws.
 - 4. Finish screw heads to match surface of hinges or pivots.
- C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - 1. Out-Swing Exterior Doors: Non-removable pins.
 - 2. Out-Swing Doors with Locks: Non-removable pins.
 - 3. Interior Doors: Non-rising pins.
 - 4. Tips: Flat button and matching plug, finished to match leaves, except where hospital tips (HT) indicated.
- D. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches or less in height and one additional hinge for each 30 inches of additional height.

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2.05 LOCK CYLINDERS AND KEYING

- A. Review the keying system with the Owner and provide new (grandmaster or great-grandmaster as required) key system. All new keying to be coordinated with existing keying system.
- B. Equip locks with manufacturer's special 6-pin tumbler cylinder with construction master-key feature that permits voiding of construction keys without cylinder removal.
- C. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
- D. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock that is not designated to be keyed alike with a group of related locks.
- E. Key Material: Provide keys of nickel silver only.
- F. Key Quantity: Furnish 3 change keys for each lock, 5 master keys for each master system, and 5 grandmaster keys for each grandmaster system. Furnish 12 construction masterkeys.
 - 1. Furnish one extra blank for each lock.
 - 2. Deliver keys to Owner.

2.06 KEY CONTROL SYSTEM

- A. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the Project.
 - 1. Provide complete cross-index system set up by key control manufacturer, and place keys on markers and hooks in the cabinet as determined by the final key schedule.
 - 2. Provide hinged-panel type cabinet for wall mounting.

2.07 LOCKS, LATCHES, AND BOLTS

- A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set, unless otherwise indicated.
 - 1. Provide curved lip strikes for locks with anti-friction latchbolts as recommended by manufacturer.
 - 2. Provide recess type top strikes for bolts locking into head frames, unless otherwise indicated.
 - 3. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.
 - 4. Provide roller type strikes where recommended by manufacturer of the latch and lock units.
- B. Lock Throw: Provide ½ inch standard throw of latch on all single and pairs except, provide ¾ inch minimum throw of latch on all pairs of UL doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

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- C. Flush Bolt Heads: Minimum of ½ inch diameter rods of brass, bronze, or stainless steel with minimum 12-inch long rod for doors up to 7'-0" in height. Provide longer rods as necessary for doors exceeding 7'-0" in height.
- D. Where notation for knurling appears on door schedule, provide knurled outside lever.

2.08 CLOSERS AND DOOR CONTROL DEVICES

- A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit depending on size of door, exposure to weather, and anticipated frequency of use.
 - 1. Where parallel arms are indicated for closers, provide closer unit on size larger than recommended for use with standard arms.
 - 2. Provide parallel arms for all overhead closers, except as otherwise indicated.
 - 3. Closers must operate at 180 degree opening where indicated on plans.
- B. Access-Free Manual Closers: All manual closers are required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.
- C. Provide black resilient parts for exposed bumper.

2.09 DOOR TRIM UNITS

- A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.
- B. Fabricate protection plates not more than 2" inches less than door width on hinge side and not more than 1" inch less than door width on pull side by height indicated.
 - 1. Metal Plates: Stainless steel, 0.050 inch (U.S. 18 gage).

2.12 HARDWARE FINISHES

- A. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if not latch or lock sets), or unless noted otherwise in the specifications or hardware sets.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 - EXECUTION

3.01 INSTALLATION

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- A. Installation of Door Hardware is by Section 06400 "Architectural Woodwork" and 8100 "Metal Doors and Frames".

3.02 HARDWARE SCHEDULE

- A. General: Provide hardware for each door to comply with requirements of Door Schedule on Drawings

END OF SECTION 08700

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**SECTION 09 25 00
GYPSUM DRYWALL SYSTEM**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide gypsum drywall system and accessories for partitions, fire walls, soffits, shafts and furred walls, as shown on drawings, as specified herein and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General and Special Conditions and Division 1 - General Requirements.
 - 2. Section 06100 – Rough Carpentry
Section 07192 - Vapor Barriers
Section 07920 - Sealants & Caulking
Section 09900 - Painting
Divisions 15 & 16

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Section 01400.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and Sections 01340 and 01341 of the Supplementary General Conditions.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

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1.04 PRODUCT HANDLING

- A. All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.

1.05 ENVIRONMENTAL CONDITIONS

In cold weather and during gypsum panel joint finishing, temperatures within the building shall be maintained within the range of 55° to 70°F (13° to 21°C). Adequate ventilation shall be provided to carry off excess moisture.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Products of the following manufacturers are acceptable:
1. U.S. Gypsum Company, Chicago, IL, (312) 606-5845.
 2. Gold Bond Products, National Gypsum Company, Charlotte, NC, (704) 536-0023.
 3. Domtar Gypsum, Newington, NH, (603) 433-80000, (800) 828-9161.
 4. G-P Gypsum Corporation, 133 Peachtree Street, Atlanta, Georgia, 30303, 1.800.225.6119

2.02 MATERIALS

- A. Gypsum Wallboard
1. Gypsum board at interior ceilings - 5/8" thick, abuse- resistant, meeting ASTM C36
- B. Metal Stud, Trim and Furring
1. Metal angles - 24 gauge galvanized steel.
 2. Cold rolled channels - 16 gauge galvanized steel.
 3. Resilient channels - (RC-1) 25 gauge corrosion resistant steel.
 4. Z-furring channels - 24 gauge corrosion resistant steel.
 5. Metal furring channels - roll-formed, hat sections of 25 gauge corrosion resistant steel.

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6. Adjustable wall furring brackets - 20 gauge corrosion resistant steel.
7. Tie wire - 8 and 18 gauge.
8. Galvanized Steel Corner beads: Provide angle shapes with wings not less than 7/8" wide and perforated for nailing and joint treatment, or with combination metal and paper wings bonded together, not less than 1-1/4" wide and suitable for joint treatment.
9. Galvanized Steel Edge beads for use at perimeter of ceilings:
 1. Provide angle shapes with wings not less than 3/4" wide.
10. Runner Fasteners, power-driven type, to withstand 193 lb. single shear and 200 lb. bearing force when driven through structural head or base and without exceeding allowable design stress in runner, fastener or structural support.

2.03 JOINTING SYSTEM

- A. Provide a jointing system, including reinforcing tape and compound, designed as a system to be used together and as recommended for this use by the manufacturer of the gypsum wallboard or Exterior sheathing approved for use on this Work.
- B. Jointing compound may be used for finishing if so recommended by its manufacturer.

2.04 FASTENING DEVICES

- A. For fastening gypsum wallboard in place on wood studs and metal channels, use flat-head screws, shouldered, and specially designed for use with power-driven tools, not less than 1" long, with self-tapping threads and self-drilling points.
- B. For fastening gypsum wallboard in place on wood, use 1-1/4" type W bugle-head screws, and of the length required by governmental agencies having jurisdiction.
- C. For fastening Exterior sheathing to metal framing use Type S-12 , bugle head, self taping, rust-resistant, fine thread for heavy gauge steel.

2.05 ACCESS DOORS

- A. In partitions and ceilings installed under this Section, provide doors where required for access to mechanical and electrical installations.
- B. Types:
 1. Unless otherwise required, provide 24" x 24" metal access doors with concealed hinges to metal frame, and with Allen key lock.
 2. If fire-rated surfaces are pierced, provide access doors having the same fire rating as the surface being pierced.

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3. Provide prime-coated steel access doors and frames for finish painting to be performed at the job site under Section 09900 of these Specifications.

2.06 SEALANTS AND FIRE STOPPING

- A. Refer to Sections 07920 - Sealants and Caulking and 07270 - FIRE STOPPING Compounds.

2.07 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work.

3.02 GYPSUM WALLBOARD INSTALLATION

A. General:

1. Install the gypsum wallboard in accordance with the Drawings.
2. At internal and external corners, conceal the cut edges of the boards by the overlapping covered edges of the abutting boards.
3. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

B. Ceiling:

1. Install the gypsum wallboard to ceilings with the long dimension of the wallboard at right angles to the supporting members.
2. Wallboard may be installed with the long dimension parallel to supporting members that are spaced 16" on centers when attachment members are provided at end joints.

C. Walls:

1. Install the gypsum wallboard to studs vertical or horizontal (see Wall types or UL Directory for gyp bd direction) in order to align joints with studs.
2. Make end joints, where required, over framing or furring members.

GYPSUM DRYWALL SYSTEM
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D. Attaching:

1. Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws 12" on centers at ceilings and 12" on centers at walls.
2. Where framing members are spaced 24" apart on walls, space screws 12" on centers.
3. Attach double layers in accordance with the pertinent codes and the manufacturer's recommendations.

E. Access doors:

1. Be careful to coordinate with the Drawings and with other trades involved, install the specified access doors where required.
2. Anchor firmly into position, and align properly to achieve an installation flush with the finished surface.

F. Concealed spaces:

1. Designated fire ratings are to be continued behind bathtubs, showers, cabinets, soffits, chases, stair enclosures and any other concealed space.

3.03 JOINT TREATMENT

A. General:

1. Inspect areas to be joint treated, verifying that the gypsum wallboard fits snugly against supporting framework.
2. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees for 24 hours prior to commencing the treatment, and until joint and finishing compounds have dried.
3. Apply the joint treatment and finishing compound by machine or hand tool.
4. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

B. Embedding Compounds:

1. Apply to gypsum wallboard joints and fastener heads in a thin uniform layer.
2. Spread the compound not less than 3" wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Spread a thin layer of compound over the tape.

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3. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6" wide at joints, and feather edged.
 4. Sandpaper between coats.
 5. When thoroughly dry, sandpaper to eliminate ridges and high points.
- C. Finishing Compounds:
1. After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to joints and fastener heads.
 2. Feather the finishing compound to not less than 12" wide.
 3. When thoroughly dry, sandpaper to obtain a uniformly smooth surface, taking care to not scuff the paper surface of the wallboard.

3.04 CORNER TREATMENT

- A. Internal corners: Treat as specified for joints, except fold the reinforcing tape lengthwise through the middle and fit neatly into the corner.
- B. External corners:
1. Install the corner bead, fitting neatly over the corner and securing with the same type fasteners used for installing the wallboard.
 2. Space the fasteners approximately 6" on centers, and drive through the wallboard into the framing or furring members.
 3. After the corner bead has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8" to 10" on each side of the corner.

3.05 OTHER METAL TRIM

- A. General:
1. The Drawings do not purport to show all locations and requirements for metal trim.
 2. Carefully study the Drawings and the installation, and provide all metal trim normally recommended by the manufacturer of the gypsum wallboard approved for use in this Work.

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3.06 PENETRATIONS THROUGH FIRE RATED PARTITIONS/CEILINGS AND CONCEALED SPACES

- A. Penetrations through fire-rated partitions and ceilings shall be sealed in accordance with ASTM E-814 and corresponding UL System drawings. Coordinate with section 07270 Firestopping.

3.07 CLEANING UP

- A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum wallboard scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.
- B. At completion of each segment of installation in a room or space, promptly pick up and remove from the working area all scrap, debris, and surplus material of this Section.

3.08 EXECUTION

A. Gypsum Panels

- 1. Single layer: apply 5/8" Sheetrock brand Gypsum Panels, Position gypsum panel and fasten to studs and runners with 1" type S Screws 12" o.c.

3.11 ACCESSORY APPLICATION

- A. Gypsum Panel Joints: Finish all face layer joints and internal angles with United States Gypsum Company Joint System installed according to manufacturer's directions. Spot exposed fasteners on face layers and finish corner bed, control joints and trim as required, with at least three coats of joint compound, feathered out onto panel faces and sanded smooth.
- B. Corner Bead: Reinforce all vertical and horizontal exterior corners with Dur-A-Bead Corner Bead fastened with clinch-on tool or staples 9" o.c. on both flanges along entire length of bead.
- C. Screws: Power drive at least 3/8" from edges or ends of gypsum panels to provide uniform dimple 1/32" deep. In gypsum base, set flush with surface without tearing face paper.

END OF SECTION 09250

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**SECTION 09 67 23
RESINOUS FLOORING**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Resinous flooring system as shown on the drawings and in schedules.
- B. Related sections include the following:
 - 1. Cast-in-Place Concrete, section 03 30 00

1.3 SYSTEM DESCRIPTION

- A. The work shall consist of preparation of the substrate, the furnishing and application of a cementitious urethane based self-leveling seamless flooring system with colored quartz aggregate broadcast and methyl methacrylate (MMA) broadcast and topcoats.
- B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 1/4 inch. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
- C. Cove base to be applied where noted on plans and per manufacturers standard details unless otherwise noted

1.4 SUBMITTALS

- A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
- B. Manufacturer's Material Safety Data Sheet (MSDS) for each product being used.
- C. Samples: A 6 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system.

1.5 QUALITY ASSURANCE

- A. The Manufacturer shall have a minimum of 5 years experience in the production, sales, and technical support of cementitious urethane, MMA industrial flooring, colored quartz aggregate and related materials.
- B. The Applicator shall have been approved by the flooring system manufacturer in all phases of surface preparation and application of the product specified.
- C. No requests for substitutions shall be considered that would change the generic type of the specified System.
- D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.
- E. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

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1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping

1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a dry storage area for all components. The area shall be between 60 F and 85 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Material Safety Data Sheets (MSDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal

1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 F and 85 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall ensure that adequate ventilation is available for the work area. This shall include the use of manufacturer's approved fans, smooth bore tubing and closure of the work area.
4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with cementitious urethane material.

1. Concrete shall be moisture cured for a minimum of 3 days and have fully cured a minimum of 5 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
3. Sealers and curing agents should not to be used.
4. Concrete shall have a minimum design strength of 3.500 psi. and a maximum water/cement ratio of 0.45
5. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements

1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
2. "No Smoking" signs shall be posted at the entrances to the work area.
3. The Owner shall be responsible for the removal of foodstuffs from the work area.
4. Non-related personnel in the work area shall be kept to a minimum.

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1.8 WARRANTY

- A. Dur-A-Flex, Inc. warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.
- B. Dur-A-Flex, Inc. liability with respect to this warranty is strictly limited to the value of the material purchase.

PART 2 – PRODUCTS

2.1 FLOORING

- A. Dur-A-Flex, Inc, Hybri-Flex MQ (self leveling broadcast colored quartz), MMA topcoat seamless flooring system.
 - 1. System Materials:
 - a. Topping: Dur-A-Flex, Inc, Poly-Crete MD resin, hardener and SL aggregate.
 - b. The aggregate shall be Dur-A-Flex, Inc. Q 28 colored quartz aggregate.
 - c. Broadcast: Dur-A-Flex, Inc. Cryl-A-Glaze G-201, MMA based two-component resin.
 - d. Topcoats: Dur-A-Flex, Inc. Cryl-A-Top T-301, MMA-based, two-component resin.
 - 2. Patch Materials
 - a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Poly-Crete MD (up to ¼ inch).
 - b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Poly-Crete WR.

2.2 MANUFACTURER

- A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
- B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 PRODUCT REQUIREMENTS

A. Topping	Poly-Crete SL
1. Percent Reactive	100 %
2. VOC	0 g/L
3. Bond Strength to Concrete ASTM D 4541	400 psi, substrates fails
4. Compressive Strength, ASTM C579	7,250 psi
5. Tensile Strength, ASTM D 638	750 psi
6. Flexural Strength, ASTM D 790	4,400 psi
7. Impact Resistance @ 125 mils, MIL D-3134, No visible damage or deterioration	160 inch lbs
B. Broadcast Coat	Cryl-A-Glaze G-201
1. Percent Reactive,	100 %
2. VOC	<100 g/L
3. Water Absorption, ASTM D 570	0.04 %
4. Tensile Strength, ASTM D 638	2,175 psi
5. Coefficient of thermal expansion ASTM D 696,	0.000035 in/in/F
6. Electrical Resistivity, ASTM D 257 Volume resistance,	10 ¹⁵ ohm-cm
Surface resistance,	10 ¹² ohm
7. Pot Life @ 68 F	10-20 minutes
8. Cure Time @ 68 F	40-60 minutes
9. Recoat Time @ 68 F	60 minutes
10. Multi-coat Application, solution weld	yes

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C. Topcoat	Cryl-A-Top T-301
1. Percent reactive resin	100 %
2. VOC	<100 g/L
3. Water absorption ASTM D 570	0.4 %
4. Tensile strength, ASTM D 638	3,550 psi
5. Tensile modulus, ASTM D 638	300,000 psi
6. Coefficient of thermal expansion ASTM D 638	0.000035 in/in/F
7. Electrical resistance ASTM D 257	
Volume resistance	10 ¹⁵ ohm-cm
Surface resistance	10 ¹² ohm
8. Water vapor transmission DIN 53122	0.9 g/cm-hr-mm HG x 10 ⁻⁹
9. Potlife @ 68 F	10-15 minutes
10. Cure time @ 68 F	30-45 minutes
11. Recoat time @ 68 F	30-45 minutes
12. Multi-coat application, solution weld	yes

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.
 - 1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

A. General

- 1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
- 2. Moisture Testing: Perform anhydrous calcium chloride test ASTM F 1869-98.
 - a. Perform three tests for the first 1,000 sf and then one test per 1,000 sf after that.
 - b. Application will proceed only when the vapor/moisture emission rates from the slab is less than and not higher than 12 lbs/1,000 sf/24 hrs.
 - c. If the vapor drive exceeds 12 lbs/1,000 sf/24 hrs then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
- 3. Mechanical surface preparation
 - a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 4-5 as described by the International Concrete Repair Institute.
 - b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
 - c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch

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key cut shall be made to properly seat the system, providing a smooth transition between areas. The

detail cut shall also apply to drain perimeters and expansion joint edges.

- d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
4. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

3.3 APPLICATION

A. General

1. The system shall be applied in five distinct steps as listed below:
 - a. Substrate preparation
 - b. Topping/overlay application with quartz aggregate broadcast.
 - c. Resin application with quartz aggregate broadcast.
 - d. Topcoat application
 - e. Second topcoat application.
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Topping

1. The topping shall be applied as a self-leveling system as specified by the Architect. The topping shall be applied in one lift with a nominal thickness of 1/8 inch.
2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
4. The topping shall be applied over horizontal surfaces using ½ inch "v" notched squeegee, trowels or other systems approved by the Manufacturer.
5. Immediately upon placing, the topping shall be degassed with a loop roller.
6. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.8 lbs/sf.
7. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

C. Broadcast

1. The broadcast coat resin shall be applied at the rate of 80 sf/gal.
2. The broadcast coat shall be comprised of a liquid component and a hardener powder which is added at the rate in accordance with the Manufacturers recommendations and thoroughly dispersed by mechanical means such as a high speed paddle mixer.
3. Colored quartz aggregate shall be broadcast into the wet resin at the rate of 0.5 lbs/sf.
4. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

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D. Topcoat

1. The first topcoat shall be roller applier with a coverage rate of 80 sf/gal.
2. The topcoat shall be comprised of a liquid component and a hardener powder which is to be added at a rate in accordance with the Manufacturer's recommendations and thoroughly dispersed by suitably approved mechanical means such as a high speed paddle mixer.
3. The first topcoat will be allowed to cure then can be sanded or scraped to give desired finish texture
4. The second topcoat shall be roller applier with a coverage rate of 100 sf/gal.
5. The finish floor will have a nominal thickness of 1/4 inch.

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:
 - a. Temperature
 1. Air, substrate temperatures and, if applicable, dew point.
 - b. Coverage Rates
 1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

- A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
- B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION

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**SECTION 09 90 00
PAINTING**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Paint/Stain interior and exterior exposed surfaces listed on the painting schedule in Part 3 of this Section, as shown on drawings and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting the work of this Section include, but are not necessarily limited to General Conditions and Supplementary General Conditions.
 - 2. Section 04 20 00 – Unit Masonry
Section 06 40 00 – Architectural Woodwork
Section 06 60 00 - Simulated wood trim
Section 08 11 13 - Metal Doors and Frames
- C. Work Not Included:
 - 1. Unless otherwise indicated, painting is not required on surfaces in concealed and inaccessible areas such as furred spaces, foundation spaces, pipe spaces, and duct shafts.
 - 2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this Section except as may be so specified.
 - 3. Do not paint moving parts of operating units.
 - 4. Do not paint over required labels or equipment identification, performance rating, name or nomenclature plates.

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Section of the Supplementary General Conditions.
- B. Unless otherwise approved by the Architect, provide all products of this Section from a single manufacturer.
- C. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- D. Work practices employed by the contractor in performance of the surface preparation, waste disposal, paint application, etc. must comply with applicable federal, state and local regulations.

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SECTION 09 90 00**

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- E. Paint Coordination:
1. Provide finish coats which are compatible with the prime coats actually used.
 2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
 3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
 4. Provide barrier coats over noncompatible primers.
 5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime coatings supplied under other Sections.

1.03 SUBMITTALS

- A. Product Data:
1. Materials list of items proposed to be provided under this Section.
 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 3. Manufacturer's complete designer color selector.
- B. Samples:
1. Following the selection of colors and glosses by the Architect for exterior surfaces and by Owner for interior, submit Samples for review.
 - a. Provide three (3) samples of each color and each gloss for each paint material specified. Except as otherwise directed by the Architect, make Samples approximately 8" x 8" in size.
 - b. Submit field samples for Architect's approval during progress of the Work in the form of actual application of the approved materials on actual surfaces to be painted approximately 4'0"x4'0" in size.
 - c. Revise each field sample as requested until the required gloss, color, and texture is achieved. Such Samples, when approved, will become standards of color and finish for accepting or rejecting the work of this Section.
 - d. Do not commence finish painting until field samples have been finally approved at the job site.

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.

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1.05 JOB CONDITIONS

- A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45 degrees F, unless otherwise permitted by the manufacturer's printed instructions as reviewed by the Architect.
- B. Weather Conditions:
 - 1. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces, unless otherwise permitted by the manufacturer's printed instructions as approved by the Architect.
 - 2. Applications may be continued during inclement weather only within the temperature limits specified by the paint manufacturer as being suitable for use during application and drying periods.

1.06 EXTRA STOCK

- A. Upon completion of this Section, deliver to the Owner one full gallon of each color, type and gloss of paint used in this work.

PART 2 - PRODUCTS

2.01 PAINT - MATERIALS

- A. Acceptable Manufacturers:
 - 1. The Painting Schedule in Part 3 of this Section is based in general, on products of Benjamin Moore & Company. Equivalent products of the following manufacturers will be acceptable, provided that they meet the performance requirements of this Specification.
 - b. Sherwin Williams
- B. Undercoats and thinners:
 - 1. Provide undercoat paint produced by the same manufacturer as the finish coat.
 - 2. Use only thinners recommended by the paint manufacturer, and use only the recommended limits.
 - 3. Insofar as practicable, use undercoat, finish coat, and thinner materials as parts of a unified system of paint finish.

2.02 COLORS

- A. Color selections will be made from manufacturer's complete designer color selector.
- B. See Finish schedule for number of different colors.
- C. Identify physical hazards according to the color scheme specified in ANSI 253.1-1971, "Safety Color Code for Marking Physical Hazards."

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2.03 APPLICATION EQUIPMENT

- A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint.
- B. Prior to use of application equipment, verify that the proposed equipment is actually compatible with the material to be applied, and the integrity of the finish will not be jeopardized by use of the proposed equipment.

2.04 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 MATERIALS PREPARATION

- A. General:
 - 1. Mix and prepare paint materials in strict accordance with the manufacturer's recommendations as approved by the Architect.
 - 2. When materials are not in use, store in tightly covered containers.
 - 3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
- B. Stirring:
 - 1. Stir materials before application, producing a mixture of uniform density.
 - 2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.03 SURFACE PREPARATION

- A. General:
 - 1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturers' recommendation.
 - 2. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.
 - 3. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.

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4. Clean each surface to be painted prior to applying paint or surface treatment.
5. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F, prior to start of mechanical cleaning.
6. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet, newly painted surfaces.
7. Fill all holes, nail holes and surface marks with compatible filler, sand smooth and prime filled spots.

B. Preparation of ferrous metal and galvanized metal surfaces:

1. Thoroughly clean surfaces until free from dirt, oil and grease.
2. Where shop coat is abraded and rust has developed, remove by sanding and spot prime immediately with paint manufacturer's recommended rust inhibitive primer.
3. On galvanized surfaces, use solvent for the initial cleaning, and then treat the surface thoroughly with phosphoric acid etch. Remove etching solution completely before proceeding.
4. Allow to dry thoroughly before application of paint.

C. Preparation of Interior & Exterior Masonry surfaces:

8. Surfaces to be coated must be clean, dry, and free of oil, grease, dust, flaky rust, mill scale, salts, loose paint, chalk, mildew, and other foreign matter that could interfere with adhesion. Remove oil, grease, salts and chalk by cleaning with Super Spec HP® Oil and Grease Emulsifier (P83) according to label directions. Glossy existing coatings should be dulled by abrading the surface.

3.04 PAINT APPLICATION

A. General:

1. Touch up shop-applied prime coats which have been damaged, and touch up bare areas prior to start of finish coat application.
2. Slightly vary the color of succeeding coats:
 - a. Do not apply additional coats until the completed coat has been inspected and approved.
 - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.
4. On removable panels and hinged panels, paint the back sides to match the exposed sides.

**PAINTING
SECTION 09 90 00**

Bates Woods Park Improvements
Phase II
NEW LONDON, CT

- B. Drying:
 - 1. Allow sufficient drying time between coats, as recommended by the material manufacturer to suit all weather conditions.
- C. Brush Application:
 - 1. Brush out and work the brush coats onto the surface in an even film.
 - 2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.
- D. Spray Application:
 - 1. Confine spray application to metal framework and similar surfaces where hand brush work would be inferior.
 - 2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
 - 3. Do not double back with spray equipment to build up film thickness of two coats in one pass.
- E. For completed work, match the approved Samples as to texture, color and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.
- F. Miscellaneous surfaces and procedures:
 - 1. Exposed mechanical items:
 - a. Finish rooftop mechanical units, electric panels, access doors, conduits, pipe, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.
 - b. Paint visible duct surfaces behind vents, registers, and grilles with heat resistant, low lustre black paint.
 - c. Wash metal with solvent, prime, and apply two coats of alkyd enamel.
 - 2. Hardware: Paint prime coated hardware to match adjacent surfaces, unless specified otherwise.
 - 3. Wet areas:
 - a. In toilet rooms and contiguous areas, add a manufacturer approved fungicide to paints.

**Bates Woods Park Improvements
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3.05 PAINTING SCHEDULE

A. Interior masonry – EP-W-1:

1st Coat	Primer: Super Spec HP® Waterborne Polyamide Epoxy Metal Primer (P42-70)
2nd Coat	Super Spec® Interior Latex Acrylic Epoxy Coating (256)
3rd Coat	Super Spec® Interior Latex Acrylic Epoxy Coating (256)

B. Interior new masonry – EP-W-1:

1st Coat	Primer: Super Spec HP® Waterborne Epoxy Block Filler (P31)
2nd Coat	Super Spec® Interior Latex Acrylic Epoxy Coating (256)
3rd Coat	Super Spec® Interior Latex Acrylic Epoxy Coating (256)

C. Metal – P-1 (Doors and frames, Lintels, exposed metal):

1st Coat	Alkyd Rust Inhibitive Primer (TT-P-636D)
2nd Coat	Alkyd Semi-Gloss Enamel (TT-E-508C, TT-E-529C)
3rd Coat	Alkyd Semi-Gloss Enamel (TT-E-508C, TT-E-529C)

D. Exterior trim and siding

1st Coat	Alkyd Primer (TT-P-636D)
2nd Coat	Alkyd Low Lustre Enamel (TT-E-508C, TT-E-529C)
3rd Coat	Alkyd Low Lustre Enamel (TT-E-508C, TT-E-529C)

E. Interior pvc trim and ceilings

1st Coat	Alkyd Primer (TT-P-636D)
2nd Coat	Alkyd Low Lustre Enamel (TT-E-508C, TT-E-529C)
3rd Coat	Alkyd Low Lustre Enamel (TT-E-508C, TT-E-529C)

F. Exterior masonry:

1st Coat	Primer: Super Spec Block Filler (206)
2nd Coat	Super Spec® Exterior 100% Acrylic
3rd Coat	Super Spec® Exterior 100% Acrylic

END OF SECTION 09 90 00

**PAINTING
SECTION 09 90 00**

**Bates Woods Park Improvements
Phase II
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**SECTION 10 14 00
EXTERIOR SIGNAGE**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide ADA compliant Exterior Photopolymer Signage as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:
 - 1. Exterior Wall signs: See Drawings for locations & quantity
 - 2. All signs 8"h x 6"w
- B. Related Work:
 - 1. Documents affecting work of this Section include but are not necessarily limited to General Conditions and Supplementary General Conditions.

1.02 SECTION INCLUDES

- A. Photopolymer Signage, Exterior Aluminum Series

1.03 REFERENCES

- A. Americans with Disabilities Act (ADA)
- B. American National Standards Institute (ANSI)
- C. American Standards for Testing and Materials (ASTM)
- D. Underwriters Laboratory (UL)

1.04 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide photopolymer signage that conforms to the following requirements of regulatory agencies and the quality control of InPro SignScape.
 - 1. Signage shall comply with all applicable provisions of the ADA and ANSI A117.1-2003.
 - a. Symbols of Accessibility: Accessible facilities required to be identified, shall use the international symbol of accessibility.
 - b. Braille: Braille shall be Grade II and accompany text.
 - 2. Fire Performance Characteristics: Provide photopolymer signage with surface burning characteristics that consist of a flame spread of 75 and a smoke development of 120 when tested in accordance to UL-723 (ASTM E-84).
 - 3. Self Extinguishing: Provide photopolymer signage with a CC1 classification for .060" thick material, when tested in accordance with the procedures in ASTM D635, Standard Test Method for Rate of Burning and/or Extent and Time of Burning Plastics in a Horizontal Position.
 - 4. Vertical Burn: Provide photopolymer material that is classified as 94V-2 for material .118" thick or greater and 94HB for material .118" thick or less when tested in accordance with UL94, Tests for flammability of Plastic Materials for Parts in Devices and Appliances.
 - 5. Self Ignition Temperature: Provide photopolymer material that has a self ignition temperature of 800°F when tested in accordance with ASTM D1929, Standard Test Method for Determining Ignition Temperature of Plastics.

1.05 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each signage system indicated in this section.
- B. Signage Report: SignPro signage report indicating signage sizes, lettering and construction.

**EXTERIOR SIGNAGE
SECTION 10 14 00**

Bates Woods Park Improvements
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C. Manufacturer's Installation Instructions: Printed Installation Instructions for each signage system.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite.
- B. Inspect materials at delivery to assure that specified product have been received.
- C. Store in original packaging in a climate controlled environment away from direct sunlight.

1.07 WARRANTY

- A. Standard InPro SignScape Photopolymer limited one year warranty against material and manufacturing defects.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
 - InPro SignScape, InPro Corporation
 - PO Box 406, Muskego, WI 53150 USA
 - Telephone 800.222.5556
 - Fax: 888.715.8407
 - E-mail: service@inprocorp.com
- B. Substitutions: Per Supplementary General Conditions.
- C. Provide all exterior grade photopolymer signage systems from a single manufacturer.

2.02 MATERIALS

- A. Exterior Grade Photopolymer Panels
 - 1. Photopolymer Aluminum Series
 - a. Provide exterior grade photopolymer panels composed of .032" thick exterior grade synthetic rubber based polymer integrally bonded to .016" aluminum alloy base. Panel shall be backed with .125" polycarbonate. Maximum panel size shall be 18" x 24".

2.03 FINISHES

- A. Color: Provide photopolymer signage material in a color selected by the architect from InPro SignScape standard photopolymer face color selection or custom.
- B. Text and Graphics: Provide photopolymer signage, with characters and graphics that shall be raised .032". Text color shall be selected by the architect, from InPro SignScape standard photopolymer text color selection.
- C. Braille: Provide photopolymer signage that includes Grade II Braille.
- D. Accessories/Options
 - 1. Mounting Options
 - a. Screw Mount: Provide screw mount unframed signage with exposed mounting fasteners. Fasteners to be located at each corner, fasteners to be stainless steel and tamper proof screws.
 - b. Sign Spacers: Provide stainless steel spacers to allow signs to be adjusted plumb against uneven masonry finish.
 - 2. Signage Corner Conditions
 - a. Rounded Corners: Provide photopolymer signage corners with a ½" radii.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions in which the signage system will be installed.
 - 1. Complete all finishing operations, including painting, before beginning installation of signage systems.
 - 2. Wall surface shall be dry and free from dirt, grease and loose paint.

EXTERIOR SIGNAGE
SECTION 10 14 00

Bates Woods Park Improvements
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3.02 PREPARATION

A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.

3.03 INSTALLATION

A. General: Locate the signage system as indicated on the approved detail drawing for the appropriate substrate and in compliance with the InPro SignScape installation instructions. Install signage systems level and plumb at the height indicated on the drawings.

3.04 CLEANING

A. At completion of the installation, clean surfaces in accordance with the InPro SignScape clean up and maintenance instructions.

END OF SECTION

EXTERIOR SIGNAGE
SECTION 10 14 00

**Bates Woods Park Improvements
Phase II
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**SECTION 10 21 13
TOILET PARTITIONS**

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide floor mounted/overhead braced solid polymer resin toilet partitions system where shown on drawings, as specified herein and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions and Supplementary General Conditions.
 - 2. Section 10800 - Toilet Accessories

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Section of the Supplementary General Conditions.
- B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Article 5 of the General Conditions and the Supplementary General Conditions.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and Certificate of Compliance attesting that all material is in accordance with specifications.
 - 3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.
 - 4. Color charts showing colors available from the proposed manufacturers in the specified products; See 2.01, A5.
 - 5. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

1.04 PRODUCT HANDLING

- A. Complying with pertinent provisions of the Supplementary General Conditions.

**TOILET PARTITIONS
SECTION 10 21 13**

**Bates Woods Park Improvements
Phase II
NEW LONDON, CT**

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. SCRANTON PRODUCTS (Santana/Comtec/Capitol), Moosic, PA, or approved equal.

2.02 TOILET PARTITIONS / URINAL SCREENS

- A. Provide toilet partitions with the following attributes. Doors, panels and pilasters shall be 1" thick constructed from 100 percent post consumer recycled content High Density Polyethylene (HDPE) resins. Partitions shall be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments. All plastic components shall be covered with a protective plastic masking.
1. Door panels
 - a. Nominal 1" thick by 55" high and of the same construction as specified for dividing panels.
 2. Panels
 - a. Polymer resin, nominal 1" thick by 55" high and of required depth with uniformly machined radius edges. Panels are anchored to front pilasters and wall with a continuous heavy duty heavy-duty aluminum bracket.
 3. Pilasters
 - a. Floor Mounted, Overhead Braced - Nominal 1" thick by 83" high and of the same design and construction as specified for dividing panels and doors. Pilasters are secured to the floor.
 4. Design
 - a. All partitions to be floor mounted/overhead braced including Urinal screen.
 - b. See drawings for panel sizes

2.03 HARDWARE

- A. Door hardware shall be as noted:
1. Hinges shall be 8" and fabricated from heavy-duty extruded aluminum (6463-T5 alloy) with bright dip anodized finish with wrap-around flanges, through bolted to doors and pilasters with stainless steel, torx head sex bolts. Hinges shall be integral, fabricated from the door and pilaster with no exposed metal parts.
 2. Door strike/keeper shall be 6" long and made of heavy-duty extruded aluminum (6436-T5 alloy) with a bright dip anodized finish and secured to the pilasters with Stainless steel, torx head sex bolts. Bumper shall be made of extruded black vinyl.
 3. Latch and housing shall be made of heavy-duty extruded aluminum (6463-T5 alloy). The latch housing shall have a bright dip anodized finish, and the slide bolt and button shall have a black anodized finish.
 4. Each door shall be supplied with one coat hook/bumper and door pull made of chrome plated zamak. Handicapped doors shall be supplied with a second door pull and out swing doors with one door stop made of chrome plated zamak.
- B. Pilaster shoes shall be 3" high pilaster shoes shall be 3" high (type 304, 20 gauge) stainless steel. Pilaster shoes shall be secured to the pilaster with a stainless steel, torx head sex bolt.
- C. Wall brackets shall be 54" long wall brackets shall be 1 ½" stirrup type made of heavy-duty aluminum (6463-T5 alloy) with a bright dip anodized finish. Stirrup brackets shall be fastened to pilasters and panels with stainless steel, torx head sex bolts.

**TOILET PARTITIONS
SECTION 10 21 13**

Bates Woods Park Improvements
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- D. Headrail shall be made of heavy-duty extruded aluminum (6463-T5 alloy) with anti-grip design and integrated curtain track. The headrail shall have a clear anodized finish and shall be fastened to the headrail bracket by a stainless steel, torx head sex bolt, and fastened at the top of the pilaster with stainless steel, tamper resistant torx screws.
- E. Headrail brackets shall be 20 gauge stainless steel with a satin finish and secured to the wall with a stainless steel, tamper resistant torx screws.

2.04 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.
- B. Field Measurements: Take field measurements prior to preparation of Shop Drawings and fabrication of special components, to ensure proper fitting of the work.

3.02 INSTALLATION

- A. Coordinate with other trades and install work in this section according to manufacturer's recommended procedures.
- B. Install the work of this Section in strict accordance with the original design, the approved Shop Drawings, pertinent requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation, anchoring all components firmly into position for long life under hard use, plumb, level, and square.
- C. Except for compartments for the handicapped, adjust doors to remain at a uniformly open position when unlocked.

3.03 ADJUST AND CLEAN

- A. Adjust doors and latches to operate easily without binding.
- B. Touch up scratches and abrasions to be permanently and completely invisible to the unaided eye from a distance of five feet. Replace units which cannot be restored to factory finished appearance.

END OF SECTION 10 21 13

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SECTION 10 28 13
TOILET ACCESSORIES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish and install toilet room accessories where shown on the drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions and Supplementary General Conditions.
 - 2. Section 04 20 00 – Unit Masonry
Section 06 10 00 - Rough Carpentry

1.02 QUALITY ASSURANCE

- A. Comply with provisions of Section of the Supplementary General Conditions.
- B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

- A. Comply with Sections of the Supplementary General Conditions.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 3. Manufacturer's data clearly defining the required support and other details of installation to enable proper interface with the work of other trades.
 - 4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.04 PRODUCT HANDLING

- A. Comply with pertinent provisions of Sections of the Supplementary General Conditions.

TOILET ACCESSORIES
SECTION 10 28 13

**Bates Woods Park Improvements
Phase II
NEW LONDON, CT**

PART 2 - PRODUCTS

2.01 TOILET ROOM ACCESSORIES

A. Anchors and Fasteners:

Provide anchors and fasteners capable of developing a retaining force commensurate with the strength of the accessory to be mounted, and well suited for use with the supporting construction. Where exposed fasteners with finish matching the accessory. Provide stainless steel with satin finish of all items of this Section.

B. Acceptable Manufacturers:

Provide all items from a single manufacturer. Items listed below are products of Bobrick, Inc., Clifton Park, NY (Except as indicated) Equivalent products of the Bradley Corp., Simsbury, CT or McKinney/Parker, Scranton, PA are acceptable provided they meet the performance requirements of this Specification.

Item:	Bobrick
TA1 Surface Liquid Soap Dispenser	BY OWNER
TA2 Mirror 24X36	B-1556
TA3 Toilet Tissue Dispenser w/theft res. spindle	BY OWNER
TA4 Grab Bars (Concealed Mount)	Type 1 - B-5806.99x42 Type 2 - B-5806.99x36 Type 3 - B-5806.99x18 Type 4 - B-4998.99
TA5 Baby changing station (Koala)	KB 100-00
TA6 Surface mounted paper towel dispenser	BY OWNER

2.02 FINISH

A. Provide all accessories of stainless steel with satin finish.

2.03 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

**TOILET ACCESSORIES
SECTION 10 28 13**

Bates Woods Park Improvements
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- A. Coordinate as required with other trades to assure proper and adequate provision in the work of this Section.
- B. Install each item in its proper location, firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.

3.03 SCHEDULE

RESTROOM BUILDING

Men's Toilet 30	TA1, TA2, TA3, TA6
Accessible Men's toilet 31	TA1, TA2, TA3, One each of TA4, TA6
Women's Toilet 32	TA1, TA2, (2)TA3, TA6
Accessible women's toilet 33	TA1, TA2, TA3, One each of TA4, TA6

CONCESSION BUILDING

Men's Toilet 13	TA1, TA2, (2)TA3, One each of TA4, TA5, TA6
Women's Toilet 14	TA1, TA2, (3)TA3, One each of TA4, TA5, TA6

See interior elevations for other items not listed on schedule.
Waste baskets by owner

END OF SECTION 10 28 13

TOILET ACCESSORIES
SECTION 10 28 13

WAGE RATES

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice
To All Mason Contractors and Interested Parties
Regarding Construction Pursuant to Section 31-53 of the
Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

STATUTE 31-55a

- SPECIAL NOTICE -

To All State and Political Subdivisions, Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

[Workplace Laws](#)

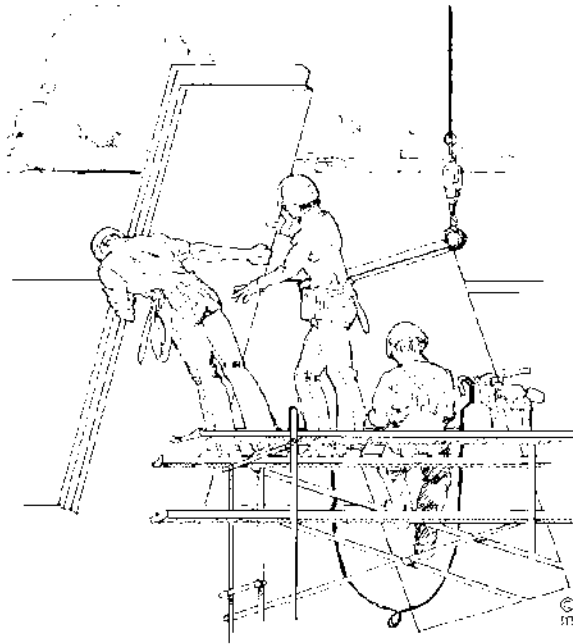
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

 Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with
_____, located at _____,
project name and number address

shall be \$_____, which includes all work, regardless of whether such project
consists of one or more contracts.

CONTRACTOR INFORMATION

Name: _____

Address: _____

Authorized Representative: _____

Approximate Starting Date: _____

Approximate Completion Date: _____

Signature

Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

**CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION**

CONTRACTORS WAGE CERTIFICATION FORM

I, _____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

Street

City

and all of its subcontractors will pay all workers on the

Project Name and Number

Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

Signed

Subscribed and sworn to before me this _____ day of _____, '42 .

Notary Public

Return to:
Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

WEEKLY PAYROLL

CONTRACTOR NAME AND ADDRESS:										SUBCONTRACTOR NAME & ADDRESS				WORKER'S COMPENSATION INSURANCE CARRIER					
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS									POLICY #				EFFECTIVE DATE:		EXPIRATION DATE:		
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	DAY AND DATE						Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS				GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				S	M	T	W	TH	F	S				Total O/T Hours	TOTAL FRINGE BENEFIT PLAN CASH	FICA	FEDERAL WITH-HOLDING		
			Trade License Type & Number - OSHA 10 Certification Number	HOURS WORKED EACH DAY															

7/13/2009 *IF REQUIRED

*SEE REVERSE SIDE

PAGE NUMBER ____ OF

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker’s compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care _____ 4) Disability_____
- 2) Pension or retirement _____ 5) Vacation, holiday_____
- 3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____ of _____, (hereafter known as Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker’s compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee’s name first appears.

(Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

(Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT***
DO NOT INCLUDE SOCIAL SECURITY NUMBERS**

Weekly Payroll Certification For
Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date: _____
Contractor or Subcontractor Business Name: _____

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE							Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS				GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY			
				S	M	T	W	TH	F	S					FICA	WITH- HOLDING	WITH- HOLDING	OTHER					
				HOURS WORKED EACH DAY							Total O/T Hours	TOTAL FRINGE BENEFIT PLAN CASH	1. \$	2. \$	3. \$	4. \$	5. \$	6. \$					
											\$												
											\$												
											\$												
											\$												
											\$												
											\$												

*IF REQUIRED

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS										Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109											
In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.										WEEKLY PAYROLL											
CONTRACTOR NAME AND ADDRESS: Landon Corporation, 15 Connecticut Avenue, Northford, CT 06472										SUBCONTRACTOR NAME & ADDRESS XYZ Corporation 2 Main Street Yantic, CT 06389				WORKER'S COMPENSATION INSURANCE CARRIER Travelers Insurance Company POLICY # #BAC8888928 EFFECTIVE DATE: 1/1/09 EXPIRATION DATE: 12/31/09							
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS DOT 105-296, Route 82								Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS				GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY		
														FEDERAL	STATE	LIST OTHER					
PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/FEMALE AND RACE*	WORK CLASSIFICATION	DAY AND DATE							Total O/T Hours	TOTAL FRINGE BENEFIT PLAN CASH		FICA	WITH-HOLDING	WITH-HOLDING	LIST OTHER				
			Trade License Type & Number - OSHA 10 Certification Number	S	M	T	W	TH	F	S											
Robert Craft 81 Maple Street Willimantic, CT 06226		M/C	Electrical Lineman E-1 1234567 Owner OSHA 123456		8	8	8	8	8										P-xxxx	\$1,582.80	#123 \$ xxx.xx
Ronald Jones 212 Elm Street Norwich, CT 06360	65%	M/B	Electrical Apprentice OSHA 234567		8	8	8	8	8										G-xxx	\$1,464.80	#124 \$xxx.xx
Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H	Project Manager			8													M-xx.x	\$1,500.00	#125 xxx.xx

7/13/2009 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER 1 OF 2

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care Blue Cross 4) Disability _____
- 2) Pension or retirement _____ 5) Vacation, holiday _____
- 3) Life Insurance Utopia 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

Robert Craft owner 10/2/09
 (Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

Robert Craft owner 10/2/09
 (Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT***
DO NOT INCLUDE SOCIAL SECURITY NUMBERS**

Information Bulletin

Occupational Classifications

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53.

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDIVERMEN. LATHERS. RESILIENT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **CLEANING LABORER**

The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification*.

- **DELIVERY PERSONNEL**

If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer/tradesman and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring.

***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.

- **INSULATOR**

Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)

- **SHEETMETAL WORKERS**

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters.

Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc.

The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

***License required per Connecticut General Statutes: F-1,2,3,4.**

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

Definitions:

1) “Site of the work” (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project;

(a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the “site of the work”; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to “the site of work” as defined in paragraph (e)(1) of this section;

(b) Not included in the “site of the work” are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)

2) “Engaged to wait” is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)

3) “Waiting to be engaged” is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)

4) “De Minimus” is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.

Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects

Truck drivers are covered for payroll purposes under the following conditions:

- Truck Drivers for time spent working on the site of the work.
- Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus

- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract or project where a significant portion of such building or work is constructed and the physical places where the building or work outlined in the contract will remain.

For example: Truck drivers delivering asphalt are covered under prevailing wage while “engaged to wait” on the site and when directly involved in the paving operation, provided the total time is not “de minimus”

Truck Drivers are not covered in the following instances:

- Material delivery truck drivers while off “the site of the work”
- Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the “site of the work”
- Truck drivers whose time spent on the “site of the work” is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

These guidelines are similar to U.S. Labor Department policies. The application of these guidelines may be subject to review based on factual considerations on a case by case basis.

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:

*Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543*

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

- a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Project: Bates Woods Park Building Improvements

**Minimum Rates and Classifications
for Building Construction**

ID# : B17531

**Connecticut Department of Labor
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town New London

State#:

FAP#:

Project: Bates Woods Park Building Improvements

CLASSIFICATION

Hourly Rate

Benefits

1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings - Last updated 7/21/11

36.86

25.51

1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 7**

2) Boilermaker

34.65

24.10

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	25.20 + a
3b) Tile Setter	32.94	22.42
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.25	19.20
3e) Plasterer	32.50	25.20
4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	25.80	16.45

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman, fence erector.	26.05	16.45
4b) Group 3: Jackhammer operators, mason tender (brick) and mason tender (cement/concrete)	26.30	16.45
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80	26.05	16.45
4d) Group 5: Air track operators, Sand blasters	26.55	16.45
4e) Group 6: Nuclear toxic waste removers, blasters	28.80	16.45
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	26.80	16.45

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	26.30	16.45
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	25.80	16.45
4i) Group 10: Traffic Control Signalman	16.00	16.45
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	29.65	21.00
5a) Millwrights	30.15	21.39
6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	36.25	22.49

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	45.97	23.535+a+b
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-----LINE CONSTRUCTION-----

Groundman	24.99	6.5% + 9.75
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Linemen/Cable Splicer	45.43	6.5% + 16.20
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8) Glazier (Trade License required: FG-1,2)	33.78	16.90 + a
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9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	27.98 + a
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As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.).	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	34.05	20.50 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	32.81	20.50 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	32.41	20.50 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	31.98	20.50 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	29.94	20.50 + a

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	29.94	20.50 + a
Group 12: Wellpoint operator.	29.88	20.50 + a
Group 13: Compressor battery operator.	29.30	20.50 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a
Group 16: Maintenance Engineer/Oiler.	27.10	20.50 + a

***As of:* Wednesday, March 06, 2013**

Project: Bates Woods Park Building Improvements

Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
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Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	28.99	20.50 + a
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10a) Brush and Roller	30.22	16.90
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10b) Taping Only/Drywall Finishing	30.97	16.90
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10c) Paperhanger and Red Label	30.72	16.90
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10e) Blast and Spray	33.22	16.90
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As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	38.67	25.56
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	31.40	17.14
14) Roofer (slate & tile)	31.90	17.14
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.21	30.56
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	38.67	25.56

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

-----TRUCK DRIVERS-----

17a) 2 Axle	27.88	17.22 + a
17b) 3 Axle, 2 Axle Ready Mix	27.98	17.22 + a
17c) 3 Axle Ready Mix	28.03	17.22 + a
17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.08	17.22 + a
17e) 4 Axle Ready Mix	28.13	17.22 + a

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

17f) Heavy Duty Trailer (40 Tons and Over)	28.33	17.22 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.13	17.22 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	40.50	16.85 + a
19) Theatrical Stage Journeyman	22.22	6.53

Project: Bates Woods Park Building Improvements

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

- Crane with 150 ft. boom (including jib) - \$1.50 extra
- Crane with 200 ft. boom (including jib) - \$2.50 extra
- Crane with 250 ft. boom (including jib) - \$5.00 extra
- Crane with 300 ft. boom (including jib) - \$7.00 extra
- Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: Wednesday, March 06, 2013

Project: Bates Woods Park Building Improvements

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

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

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Wednesday, March 06, 2013

BID FORMS

Your response should only include an original and one (1) copy (unless otherwise indicated in the specifications) of all documents after this page.

Do not use 3-ring binders!



City of New London

Department of Finance-Purchasing Agent
 13 Masonic Street • New London, CT 06320 • Phone (860) 447-5215 • Fax (860) 447-5297

Bid Proposal Form Page 1 of 2

Bid No.: 2013-11	Bid Opening Date: April 1, 2013	Bid Opening Time: 2:00 P.M.	Bid Surety: 10%	Date Issued: March 8, 2013
Description Bates Woods Park Phase II Building Improvements:				

REQUEST FOR PROPOSALS: Pursuant to the provisions of Section 2-69 of the Code of Ordinances of the City of New London, sealed proposals will be received by the Purchasing Agent for the City of New London, at the address above for furnishing the commodities and/or services herein listed.

IMPORTANT: Both pages of this form must be completed, signed and returned by the proposer as part of the proposal package.

NOTE: Proposer means Individual/Sole Proprietor, Partnership or Corporation name.

Section 1 of 3 – Proposer Information

Complete Company Name (Trade Name, Doing Business As)		SSN or FEIN	
Company Address	Street	City	State Zip Code
Contact Name (Typed or Printed)	Telephone Number (Include Toll-Free Numbers)		FAX Number
Written Signature of Person Authorized to Sign Proposals on Behalf of the Above Named Company ← SIGN HERE			Date Executed
Type or Print Name of Authorized Person		Title of Authorized Person	
Company's E-Mail Address		Company's Web Site	
Is Your Business a: <input type="checkbox"/> Proprietorship (Individual), <input type="checkbox"/> Partnership or <input type="checkbox"/> Corporation ? (Type of Corporation -)			
Is Your Business Currently a State of Connecticut Certified Small Business? <input type="checkbox"/> Yes (Attach Certificate Copy to Bid) <input type="checkbox"/> No			
If your business is a Partnership , you must attach the names and titles of all partners to this bid when returned.			
If your business is a Corporation , in which State are you incorporated?			
Is your business reportable to the IRS? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, a 1099W2 will be mailed to you at year end.			
Remittance Information: In this box indicate the Remittance Address of your business if different from above.			



City of New London

Department of Finance-Purchasing Agent
13 Masonic Street • New London, CT 06320 • Phone (860) 447-5215 • Fax (860) 447-5297

Bid Proposal Form Page 2 of 2

Section 2 of 3 Important Information for Proposers

AFFIRMATION OF PROPOSER: The undersigned proposer affirms and declares:

1. That this proposal is executed and signed by said bidder with full knowledge and acceptance of the provisions of the Standard Proposal and Contract Terms and Conditions of current issue and in effect on the date of bid issue. These Standard Proposal and Contract Terms and Conditions are made a part of the contract.
2. That should any part of this proposal be accepted in writing by the City of New London within thirty (30) days from the date of proposal opening unless and earlier for acceptance is specified by the proposer the proposal schedule, said proposer will furnish and deliver the commodities and/or services for which this proposal is made, in the quantities and at the prices proposed, and in compliance with the provisions of the STANDARD PROPOSAL AND CONTRACT TERMS AND CONDITIONS, COMMODITY SPECIFICATIONS, PROPOSAL SCHEDULE AND SPECIAL PROPOSAL AND CONTRACT TERMS AND CONDITIONS. Should award of any part of this proposal be delayed beyond the period of thirty (30) days or an earlier date specified by the proposer in the proposal schedule, such award shall be conditioned on the proposer's acceptance.
3. Acceptance of the conditions set forth herein, agreement in strict accordance therewith, and will furnish and deliver the commodities and/or services to the City of New London at the prices bid therein.
4. Should the Purchasing Agent determine that the proposer has not completed Section 1 – Proposer Debarment and/or Suspension included as part of this document, then such determination may be just cause for disqualification from the evaluation of this proposal.

Section 3 of 3 – Proposer Debarment and/or Suspension

Has the bidder, any company officials, or any subcontractor to the bidder, any of its company officials received any notices of debarment and/or suspension from contracting with the State of Connecticut, the federal government, any other state within the United States, any of its territories or any governmental entity?

Yes No

If the above signed bidder, any company official or any subcontractor to the bidder **has** received notice of debarment and/or suspension from contracting with the State of Connecticut, the federal government or any governmental entity, said notices must be attached to this document when submitting this bid.

Number of notices attached _____



City of New London

Department of Finance-Purchasing Agent
 13 Masonic Street • New London, CT 06320 • Phone (860) 447-5215 • Fax (860) 447-5297

Bid Schedule

Bid No.:
2013-11

William R. Hathaway
Purchasing Agent

(860)447-5215
Telephone Number

**BID SCHEDULE
 for Bid No. 2013-11**

IMPORTANT!
RETURN ORIGINAL AND ONE COPY

DELIVERY:

TERMS:
 _____ % _____ days

**Payment terms are Net 45 days. Any deviation may result in bid rejection.
 Proposal prices shall include transportation charges FOB City of New London.**

Page 1 of 1

BIDDER NAME:

SSN or FEIN:

Item No.	Description of Commodity and/or Services	Quantity	Unit of Measure	Unit Price	Total Price
1	Concessions Building Renovations	1	LS		
	Per LS				
2	Restroom Building Renovations	1	LS		
	Per LS				

TOTAL BID \$ _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____

_____ as Principal, and _____
a corporation duly organized under the laws of the State of _____ as Surety are held and
firmly bound unto the **City of New London, 181 State Street, New London, CT 06320**, hereinafter called the
"Owner" in the sum of _____ Dollars (\$ _____), for the
payment of which sum well and truly to be made, the said Principal and Surety, bind ourselves, our heirs, executors,
administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid dated _____ to

NOW THEREFORE, if the Owner shall accept the bid of the Principal and the Principal shall enter into a Contract with
the Owner in accordance with the terms of such bid and give such bond or bonds as may be specified in the bidding
or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the
prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal
to enter such Contract and give such bond or bonds, if the Principal shall pay to the Owner the difference not to
exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Owner may
in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and
void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____ 200.

(Seal)

(Principal)

(Witness)

(Title)

(Surety)

(Seal)

(Witness)

(Title)

Attorney-in-Fact, State of _____, Power-of-Attorney for person signing for
Surety Company must be attached to Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____ certify that I am the _____
_____, of the Corporation named as Principal in the within bond; that ___
_____ who signed the said bond on behalf of the Principal was then the _____
_____ of said corporation; that I know his signature, and his signature
thereto is genuine; and that said bond was duly signed, sealed, and attested to for and in behalf of said corporation by
authority of this governing body.

Affix
Corporate
Seal

Title _____

NON COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)
County of _____) ss.

_____, being first duly sworn,
deposes and say that:

- (1) He is _____ of _____ herein referred to as the "Bidder" that has submitted the attached bid;
- (2) He is fully informed respecting the preparation and content of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of New London, CT or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties of interest, including this affiant.
- (6) That no officer or employee or person whose salary is payable in whole or in part from the City of New London is directly or indirectly interested in this Bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

Signed _____

Title _____

Subscribed and sworn before me this

_____ day of _____ 20____

(Notary Public)

My Commission expires _____

NON COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____)
County of _____) ss.

_____, being first duly sworn,
deposes and says that:

- (1) He is _____ of _____ herein referred to as the "Subcontractor";
- (2) He is fully informed respecting the preparation and content of the Subcontractor's Proposal submitted by the Subcontractor to _____, the Contractor for certain work in connection with the _____ Contract pertaining to the Project in New London, Connecticut;
- (3) Such Subcontractor's Proposal is genuine and is not a collusive or sham Bid;
- (4) Neither the said Subcontractors nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in said Subcontractor's Proposal or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of New London, CT or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties of interest, including this affiant.
- (6) That no officer or employee or person whose salary is payable in whole or in part from the City of New London is directly or indirectly interested in this Bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

Signed _____

Title _____

Subscribed and sworn before me this

_____ day of _____ 20____

(Notary Public)

My Commission expires _____

Statement of Bidder's Qualifications

All items and questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The bidder may submit any additional information it desires.

1. Name of Bidder _____
2. Bidder's Tax Identification No. _____
3. Permanent main office address _____

4. When organized _____
5. If corporation, where incorporated _____
6. Number of years have you been engaged in the contracting business under your present firm or trade name _____
7. Contracts on hand: (Schedule these showing amount of each contract and the appropriate anticipated dates of completion) _____

8. General character of work performed by your company _____

9. Have you ever failed to complete any work awarded to you? If so, where and why? _____

10. Have you ever defaulted on a contract? If so, where and why? _____

11. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed (use a separate sheet if necessary) _____

12. List your major equipment available for this Contract _____

13. List your experience in work similar to this project _____

14. List the background and experience of the principal members of your organization, including officers _____

15. List the work to be done by Subcontractors and summarize the dollar value of each Subcontract

16. Credit available \$ _____

17. Give Bank reference _____

18. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner? _____

19. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated _____ (Name of Bidder)

By _____

Title _____

State of _____)
County of _____) ss.

_____ being duly sworn deposes and says that (s)he is _____
_____ of _____

_____, and that the answers to the foregoing items and questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this

_____ day of _____ 20

(Notary Public)

My Commission expires _____

AFFIRMATIVE ACTION POLICY STATEMENT
(must be submitted on your firm's letterhead)

It has always been the policy and will continue to be the strong commitment of _____ and all contractors and subcontractors who do business with this City to provide equal opportunities in employment to all qualified persons solely on the basis of job-related skills, ability and merit. _____ will continue to take Affirmative Action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, national origin, ancestry, mental disorder (present or past history thereof), age, physical disability (but not limited to blindness), marital status, mental retardation, and criminal record. Such action includes, but is not limited to, employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation and selection for training including apprenticeship. _____, and its subcontractors will continue to make good faith efforts to comply with all federal and state laws and policies which speak to equal employment opportunity.

The principles of Affirmative Action are addressed in the 13th, 14th, and 15th Amendments of the United States Constitution, Civil Rights Act of 1866, 1870, 1871, Equal Pay Act of 1963, Title VI and VII of - the 1964 United States Civil Rights Act, Presidential Executive Orders 11246, amended by 11375, (nondiscrimination under federal contracts), Act I, Sections 1 and 20 of the Connecticut Constitution, Governor Grasso's Executive Order Number 11, Governor O'Neill's Executive Order Number 9, the Connecticut Fair Employment Practices Law (Sec. 46a-60-69) of the Connecticut General Statutes, Connecticut Code of Fair Practices (46a-70-81), Deprivation of Civil Rights (46a-58(a)(d)), Public Accommodations Law (46a-63-64), Discrimination against Criminal Offenders (46a-80), definition of Blind (46a-51(1)), definition of Physically Disabled (46a-51(15)), definition of Mentally Retarded (46a-51(13)), cooperation with the Commission on Human Rights and Opportunities (46 - 77), Sexual Harassment (46a-60(a)-8), Connecticut Credit Discrimination Law (36-436 through 439), Title I of the State and Local Fiscal Assistance Act of 1972.

This Affirmative Action Policy Statement re-affirms my personal commitment to the principles of Equal Employment Opportunity.

DATE

Signature of Authorized Signer

CERTIFICATION OF BIDDER REGARDING
EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 Part II, Section 203(b), (30 FR 12319, 12935). The implementing rules and regulations provide that any bidder or prospective contractor, or any of its proposed subcontractors, shall state whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicated that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

Bidder's Name _____

Address and Zip Code _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.

Yes () No () If answer is yes, identify the most recent contract.

2. Compliance reports were required to be filed in connection with such contract or subcontract

Yes () No () If answer is yes, identify the most recent contract.

3. Bidder has filed all compliance reports due under applicable instructions, including SF. 100.

Yes () No () Not Required ()

4. If answer to Item 3 is "No" please explain in detail on reverse side of this Certification.

Certification - The information above is true and complete to the best of my knowledge and belief. A willfully false statement is punishable by law (U.S. Code, Title 18, Section 1001).

Name and Title of Signer (Please Type)

Signature

Date

CERTIFICATION OF NON-SEGREGATED FACILITIES

This Bidder certifies that he does not maintain or provide his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any locations, under his control, where segregated facilities are maintained. The Bidder agrees that a breach of his certification will be a violation of the Equal Opportunity clause and any Contract resulting from acceptance of this Bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are, in fact, segregated on the basis of race, color, religion or national origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed Subcontractors for specific time periods) he will obtain identical certifications from proposed Subcontractors prior to the award of Subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files; and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have already submitted identical certifications for the specific time periods):

“Notice to prospective subcontractors of requirements for non-segregated facilities. A certification of non-segregated facilities must be submitted prior to the award of a subcontract exceeding the Equal Opportunity Clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e. quarterly, semi-annually, or annually).

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. Paragraph 1001.

Date: _____

By: _____

Official Address: _____

Title: _____

CONTRACT FORMS

CONTRACT FOR SERVICES

THIS AGREEMENT made and entered into this ___ day of _____, by and between _____ (legal name and address), hereinafter called "**Contractor**" and the City of New London, 181 State Street, New London, CT 06320, hereinafter called "**City**."

WHEREAS, the City desires to enter into a contract for services, and the Contractor represents itself as competent and qualified to accomplish the specific requirements of this contract to the satisfaction of the City, therefore this contract is entered into under the following terms and conditions:

1. The Contractor agrees to perform the services described below or in attachments if applicable. (Attachments must be specifically labeled; for example, "Attachment A, consisting of _____ pages, attached hereto and made a part hereof," and be initialed by authorized representatives of both parties.) Only those attachments specifically referenced in this Contract for Services shall apply. The terms and conditions as contained in this Contract for Services shall take precedence over any conflicting terms as may be attached hereto.

2. **Term of the Contract:** The start date for this Contract shall be _____ and the completion date of this Contract shall be _____.

3. **Contract Price:** The City shall pay the Contractor for the performance of the Contract in current funds, for the total quantities of work performed for the price of \$ _____.

4. **Contract Documents:** The Contract Documents consist of this Agreement, the Standard Bid and Contract Terms and Conditions, the Instructions to Bidders, the Contractor's bid as accepted by the City, the General and Special Conditions of the Work, the Technical Specifications, the drawings and all Addenda attached hereto.

The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. In the event of any conflict or inconsistency between the provisions of this Agreement and the provisions of any of the other Contract Documents, the provisions of the Agreement shall prevail.

Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the edition of the standard specification, manual, code or laws or regulations identified in the reference. In the event a particular edition is not identified, the reference shall mean the latest edition in effect at the time of receipt of the bid. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the City, the Contractor or any of their consultants, agents or employees from those set forth in the Contract Documents.

5. **Obligations And Liability Of The Contractor:** The Contractor shall do all the work and perform and furnish all the labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies and all other things (except as otherwise expressly provided herein) necessary and as herein specified for the proper performance and completion of the Work in the manner and within the time hereinafter specified, in strict accordance with the Drawings, Specifications and other Contract Documents, in conformity with the directions and to the satisfaction of the City, and at the prices herein agreed upon therefor.

All parts of the Work and all fixtures, equipment, apparatus and other items indicated on the Drawings and not mentioned in the Specifications, or vice versa, and all work and material usual and necessary to make the Work complete in all its parts, including all incidental work necessary to make it complete and satisfactory and ready for use and operation, whether or not they are indicated on the Drawings or mentioned in the Specifications, shall be furnished and executed the same as if they were called for both by the Drawings and by the Specifications.

The Contractor shall coordinate his operations with those of any other contractors who may be employed on other work of the City, shall avoid interference therewith, and shall cooperate in the arrangements for storage of materials and equipment.

The Contractor shall conduct his work so as to interfere as little as possible with private business and public travel. Wherever and whenever necessary or required, he shall maintain fences, furnish watchmen, maintain lights, and take such other precaution as may be necessary to protect life and property.

The Contractor shall indemnify and save harmless the City and its officers, agents, servants and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses, including attorneys' fees, on account of bodily injury, sickness, disease or death sustained by any person or persons or injury or damage to or destruction of any property, directly or indirectly arising out of, relating to or in connection with the Work, whether or not due to or claimed to be due in whole or in part to the active, passive or concurrent negligence or fault of the Contractor, his officers, agents, servants or employees, any of his subcontractors, the City or any of their respective officers, agents, servants or employees and/or any other person or persons, and whether or not such claims, demands, suits or proceedings are just, unjust, groundless, false or fraudulent; and the Contractor shall and does hereby assume and agrees to pay for the defense of all such claims, demands, suits and proceedings, provided, however, that the Contractor shall not be required to indemnify the City, its officers, agents, servants, or employees, against any such damages occasioned solely by acts or omissions of the owner other than supervisory acts or omissions of the City in the Work.

The Contractor shall have complete responsibility for the Work and the protection thereof, and for preventing injuries to persons and damage to the Work and property and utilities on or about the Work, until final completion and final acceptance thereof. He shall in no way be relieved of his responsibility by any right of the City to give permission or directions relating to any part of the Work, by any such permission or directions given, or by failure of the City to give such permission or directions. The Contractor shall bear all costs, expenses, losses and damages on account of the quantity or character of the Work or the nature of the land (including but not limited to subsurface conditions) in or under or on which the Work is done being different from that indicated or shown in the Contract Documents or from what was estimated or expected, or on account of the weather, elements, or other causes.

The Contractor shall conduct his operations so as not to damage existing structures or work installed either by him or by other contractors. In case of any such damage resulting from his operations, he shall repair and make good as new the damaged portions at his own expense with the consent of the damaged party. In the event that consent is not given, the Contractor shall continue liable for the damage caused.

The Contractor shall be as fully responsible to the City for the acts and omissions of his subcontractors, their officers, agents, servants and employees as he is for his own acts and omissions and those of his own officers, agents, servants and employees.

Should the Contractor sustain any loss, damage or delay through any act or omission of any other contractor or any subcontractor of any such other contractor, the Contractor shall have no claim against the City therefor, other than for an extension of time, but shall have recourse solely to such other contractor or subcontractor.

If any other contractor or any subcontractor of any such other contractor shall suffer or claim to have suffered loss, damage or delay by reason of the acts or omissions of the Contractor or of any of his subcontractors, the Contractor agrees to assume the defense against any such claim and to reimburse such other contractor or subcontractor for such loss or damage.

The Contractor agrees to and does hereby indemnify and save harmless the City from and against any and all claims by such other contractors or subcontractors alleging such loss, damage or delay and from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses, including attorneys' fees, arising out of, relating to or resulting from such claims.

The Contractor shall promptly pay all federal, state and local taxes which may be assessed against him in connection with the Work or his operations under this Agreement and/or the other Contract Documents, including, but not limited to, taxes attributable to the purchase of material and equipment, to the performance of services, and the employment of persons in the prosecution of the Work.

6. Supervision Of Work: The Contractor shall be solely responsible for supervision of the Work, shall give the work the constant attention necessary to ensure the expeditious and orderly progress thereof, and shall cooperate with the City, its officers, agents or employees in every possible way.

At all times, the Contractor shall have as his agent on the Work a competent superintendent capable of reading and thoroughly understanding the Drawings and Specifications, with full authority to execute the directions of the Engineer without delay and to supply promptly such labor, services, materials, equipment, plant, apparatus, appliances, tools, supplies and other items as may be required. Such superintendent shall not be removed from the Work without the prior written consent of the City. If, in the opinion of the City, the superintendent or any successor proves incompetent, the Contractor shall replace him with another person approved by the City; such approval, however, shall in no way relieve or diminish the Contractor's responsibility for supervision of the Work.

Whenever the Contractor or his agent or superintendent is not present on any part of the Work where it may be necessary to give directions or instructions with respect to such work, such directions or instructions may be given by the City to and shall be received and obeyed by the foreman or any other person in charge of the particular work involved.

7. Insurance: The Contractor shall procure and maintain insurance of the types specified below, and to the limits for this insurance specified in the Standard Bid and Contract Terms and Conditions and the City of New London Code of Ordinances, Article IV., Section 2-71. All insurance shall be obtained from companies satisfactory to the City.

Insurance shall be in such forms as will protect the Contractor from all claims and liability for damages for bodily and personal injury, including accidental death, and for property damage, which may arise from operations under the Contract, whether such operations be by himself, his subcontractors, or by anyone directly or indirectly employed or engaged by him.

The following types of insurance shall be provided before starting and until final completion and acceptance of the Work and expiration of the guarantee period provided for in the Agreement.

- a. Workmen's Compensation and Employer's Liability Insurance.
- b. Bodily Injury Insurance for operations and completed operations and Contractor's Protective Bodily Injury Insurance.
- c. Property Damage Insurance for operations and completed operations and Contractor's Protective Property Damage Insurance, each including coverage for injury to or destruction of wires or pipes and similar property and appurtenant apparatus and the collapse of or structural injury to any building or structure except those on which work under the Contract is being done. Blasting and explosion coverage shall be obtained if there is a need for blasting under the Contract, and no blasting shall be performed until such insurance has been secured.
- d. Bodily Injury Insurance covering the operation of all motor vehicles owned by the Contractor.
- e. Personal Injury Insurance to cover claims for personal injury and including claims brought by employees.
- f. Property Damage Insurance covering the operation of all motor vehicles owned by the Contractor.
- g. Insurance to cover bodily injuries and property damage resulting from the use of motor vehicles not owned by the Contractor, while such vehicles are being operated in connection with the prosecution of the Work.
- h. Contractual Liability Insurance covering the liability assumed by the Contractor under the fifth paragraph of that subsection titled "Obligations and Liability of Contractor" of this Agreement.
- i. Owner's Protective Liability and Property Damage Insurance to protect the City and any Engineer against claims for Property damage and for bodily injuries, including accidental death, caused by the operations of the Contractor or his subcontractors on the Work. The policy shall indicate the City and any Engineer as the named insured. A copy of the policy shall be furnished to the City and a Certificate of Insurance shall be furnished to any Engineer.

All policies shall be so written that the owner will be notified in writing of cancellation or restrictive amendment at least 30 days prior to the effective date of such cancellation or amendment.

Certificates from the Contractor's insurance carriers stating the coverages provided, the limits of liability, and expiration dates shall be filed in triplicate with the Engineer before operations are begun. Such certificates shall be on the form furnished by the Engineer.

Renewal certificates must be furnished by the Contractor prior to the expiration date of any of the initial insurances.

No insurance required or furnished hereunder shall in any way relieve the Contractor of or diminish any of his responsibilities, obligations and liabilities under the Contract.

8. Contract: This Agreement, which includes all the Contract Document elements listed in paragraph 1 above, forms the Contract between the parties identified in the heading of this document. In the event that any provision of the Contract conflicts with any other provision of this Contract, the decision of the City will be final.

9. Funding and Fiscal Year Appropriations: Appropriations for expenditures by the City and authorization to spend for a particular purpose are ordinarily made on a fiscal year basis. The fiscal year of the City is the twelve (12) month period ending June 30 of each year. The obligations of the City under this Contract for the present or any subsequent fiscal year following the fiscal year in which this Contract is executed are subject to the appropriation of funds sufficient to discharge the City's obligation, which accrues in this or any subsequent fiscal year. In the absence of such appropriation or authorization, this Contract shall be terminated immediately upon the Contractor's receipt of notice to said effect without liability for damages, penalties or other charges arising from early termination. Expenditures for Contracted services that will extend beyond a single fiscal year shall not exceed in any fiscal year the amount appropriated and authorized for said fiscal year. The Contractor's yearly costs, as contained herein, may not exceed the amount appropriated for said year.

10. Termination: The Contract may be terminated without cause by either party by giving written notice to the other at least thirty (30) calendar days prior to the effective date of termination stated in the notice. If Contractor fails to fulfill his obligations, the City may terminate this Contract by giving written notice to the Contractor at least seven (7) calendar days before the effective date of termination stated in the notice. The notice shall state the circumstances of the alleged breach and may state a period during which the alleged breach may be cured, which cure shall be subject to approval by the City.

11. Obligations in Event of Termination:

A. Upon termination, all finished or unfinished documents, data, studies, and reports prepared by the Contractor pursuant to this Contract, shall become the property of the City.

B. The City shall promptly pay the Contractor for all services performed to the effective date of termination, subject to indemnification provisions of Paragraph 5 hereof and subject to offset of sums due the Contractor against sums owed by the Contractor to the City.

12. Record keeping, Audit, and Inspection of Records: The Contractor shall maintain books, records and other compilations of data pertaining to the requirements of the Contract to the extent and in such detail as shall properly substantiate claims for payment under the Contract. All such records shall be kept for a period of six (6) years or for such longer period as is specified herein. All retention periods start on the first day after final payment under this Contract. If any litigation, claim, negotiation, audit or other action involving the records is commenced prior to the expiration of the applicable retention period, all records shall be retained until completion of the action and resolution of all issues resulting therefrom, or until the end of the applicable retention period, whichever is later. The Federal grantor agency, the State Auditor, the City, or any of their duly authorized representatives or designees shall have the right at reasonable times and upon reasonable notice, to examine and copy, at reasonable expense, the books, records, and other compilations of data of the Contractor which pertain to the provisions and requirements of this Contract. Such access shall include on-site audits, review, and copying of records.

13. Publicity, Publication, Reproduction and Use of Contract Products or Materials: Unless provided otherwise by law or the City, title and possession of all data, reports, programs, software, equipment, furnishings, and any other documentation or product paid for with City funds shall vest with the City at the termination of the Contract. The Contractor shall at all times obtain the prior written approval of the City before it, any of its officers, agents, employees or subcontractors, either during or after termination of the Contract, makes any statement bearing on the work performed or data collected under this Contract to the press or issues any material for publication through any medium of communication. If the Contractor, or any of its subcontractors, publishes a work dealing with any aspect of performance

under the Contract, or of the results and accomplishments attained in such performance, the City shall have a royalty-free non-exclusive and irrevocable license to reproduce, publish or otherwise use and to authorize others to use the publication. The Contractor shall use reasonable means to inform the public that the City provides financial support for its operations and services by explicitly stating on publicity material, stationery, posters and other written materials, and on its premises the following: "This program is supported in part (in full) by the City of New London."

14. Assignment by Contractor and Subcontracting: The Contractor shall not assign or in any way transfer any interest in this Contract without the prior written consent of the City, nor shall he subcontract any services without the prior written approval of the City.

15. Connecticut Law: It is agreed that this contract shall be governed by, construed, and enforced in accordance with the internal laws of the State of Connecticut.

16. Venue: In the event of litigation, the parties do agree to be contractually bound to submit themselves to the personal jurisdiction of the state courts of Connecticut. The venue for any court proceeding shall be in the Superior Court for the Judicial District for New London at New London, Connecticut.

17. Waiver of Jury Trial: CONTRACTOR HEREBY EXPRESSLY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION OR CAUSE OF ACTION (1) ARISING UNDER THIS AGREEMENT OR ANY OTHER INSTRUMENT, DOCUMENT OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HERewith, OR (2) IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF THE PARTIES HERETO OR ANY OF THEM WITH RESPECT TO THIS AGREEMENT OR ANY OTHER INSTRUMENT, DOCUMENT OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HERewith, OR THE TRANSACTIONS RELATED HERETO OR THERETO, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT OR TORT OR OTHERWISE; AND CONTRACTOR HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY, AND THE CITY MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS SECTION WITH ANY COURT AS WRITTEN EVIDENCE OF CONTRACTOR'S CONSENT TO THE WAIVER OF ITS RIGHT TO TRIAL BY JURY.

18. Nondiscrimination and affirmative action provisions, nondiscrimination provisions regarding sexual orientation, Executive Order Number Three and guidelines and rules, Executive Order Number Seventeen, Executive Order Number Sixteen and sexual harassment policy:

For the purposes of this article, the word "contractor" is substituted for and has the same meaning and effect as if it read "Contractor's name." Section A of this article is inserted in connection with subsection (a) of Section 4a-60 of the General Statutes of Connecticut, as revised. Section B of this article is inserted in connection with subsection (a) of Section 4a-60a of the General Statutes of Connecticut, as revised.

A. (a) For the purposes of this section, "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Conn. Gen. Stat. Section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.

For the purposes of this section, "Commission" means the Commission on Human Rights and Opportunities.

For the purposes of this section, "public works contract" means any agreement between any individual, firm, or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance, or guarantees.

(b) (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness,

unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved; (2) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the contractor agrees to comply with each provision of this section and Conn. Gen. Stat. Sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to Conn. Gen. Stat. Sections 46a-56, 46a-68e, and 46a-68f; (5) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records, and accounts concerning the employment practices and procedures of the contractor as they relate to the provisions of this section and Conn. Gen. Stat. Section 46a-56. If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.

(c) Determination of the contractor's good faith efforts shall include, but shall not be limited to, the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The contractor shall include the provisions of subsection (b) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor, or manufacturer unless exempted by regulations or orders of the Commission. The contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Conn. Gen. Stat. Section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The contractor agrees to comply with the regulations referred to in this section as they exist on the date of this contract and as they may be adopted or amended from time to time during the term of this contract and any amendments thereto.

B. (a) (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to Section 46a-56 of the Connecticut General Statutes; (4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records, and accounts concerning the employment practices and procedures of the contractor that relate to the provisions of this section and Section 46a-56 of the Connecticut General Statutes.

(b) The contractor shall include the provisions of subsection (a) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor, or manufacturer unless exempted by regulations or orders of the Commission. The contractor shall

take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Section 46a-56 of the Connecticut General Statutes; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(c) The contractor agrees to comply with the regulations referred to in this section as they exist on the date of this contract and as they may be adopted or amended from time to time during the term of this contract and any amendments thereto.

C. This contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill promulgated June 16, 1971, and, as such, this contract may be cancelled, terminated, or suspended by the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Three, or any State or federal law concerning nondiscrimination, notwithstanding that the State Labor Commissioner is not a party to this contract. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. Three is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the State Labor Commissioner shall have continuing jurisdiction in respect to contract performance in regard to nondiscrimination, until the contract is completed or terminated prior to completion.

The contractor agrees, as part consideration hereof, that this contract is subject to the Guidelines and Rules issued by the State Labor Commissioner to implement Executive Order No. Three, and that he will not discriminate in his employment practices or policies, will file all reports as required, and will fully cooperate with the State of Connecticut and the State Labor Commissioner.

D. This contract is subject to the provisions of Executive Order No. Seventeen of Governor Thomas J. Meskill promulgated February 15, 1973, and, as such, this contract may be cancelled, terminated, or suspended by the contracting agency or the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Seventeen, notwithstanding that the State Labor Commissioner may not be a party to this contract. The parties to this contract, as part of the consideration hereof, agree that Executive Order No. Seventeen is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the contracting agency and the State Labor Commissioner shall have joint and several continuing jurisdiction in respect to contract performance in regard to listing all employment openings with the Connecticut State Employment Service.

E. This contract is subject to the provisions of Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, and, as such, the contract may be canceled, terminated, or suspended by the State for violation of or noncompliance with said Executive Order No. Sixteen. Executive Order No. Sixteen is attached hereto and made a part hereof. The parties agree to comply with such executive order. In addition, the contractor agrees to include a copy of Executive Order No. Sixteen, and the requirement to comply with said executive order, in all contracts with its contractors, subcontractors, consultants, sub-consultants, and vendors.

F. This contract is subject to the provisions of the City of New London Sexual Harassment Policy ("Policy") and, as such, the contract may be canceled, terminated, or suspended by the City in the event that the contractor, its employees, contractors, subcontractors, consultants, sub-consultants, or vendors engages in behavior prohibited by the provisions of the Policy (a copy of the Policy is attached hereto). The contractor agrees to include a copy of the Policy, and the requirement to prevent behavior as defined in such Policy, in all contracts with its contractors, subcontractors, consultants, sub-consultants, and vendors.

19. Force Majeure: Neither party shall be liable to the other or be deemed to be in breach of this Contract for any failure or delay in rendering performance arising out of causes beyond its reasonable control and without its fault or negligence. Such causes may include, but are not limited to, acts of God or of a public enemy, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or unusually severe weather. Dates or times of performance shall be extended to the extent of delays excused by this section, provided that the party whose performance is affected notifies the other promptly of the existence and nature of such delay.

20. Compliance with Laws and Indemnification of the City of New London: The Contractor shall comply with all applicable laws, rules, regulations, ordinances, orders or requirements of the State of Connecticut and any governmental authority relating to the delivery of the services specified in this Contract. The City may require the Contractor to pay fines, penalties, and damages that may arise out of or may be imposed because of, the Contractor's breach or failure to comply with the provisions of this Contract. Unless otherwise provided by law the Contractor shall indemnify and hold harmless the City, its agents, officers and employees against any and all liability, loss,

damages, penalties, costs or expenses for personal injury or damage to real or tangible personal property which the City may sustain, incur or be required to pay resulting from, arising out of, or in connection with the services performed or delivered under this Contract by reason of acts, inactions, omissions, negligence, reckless or intentional misconduct of the Contractor, its agent(s), officers, employees or subcontractors; provided that the Contractor is notified of any claim within a reasonable time after the City becomes aware of it, and the Contractor is afforded an opportunity to participate in the defense of such claim. In such event, no negotiated settlement agreement shall be binding on the Contractor without the Contractor's concurrence.

21. Waivers And Severability: All conditions, covenants, duties and obligations contained in this Contract can be waived only by written agreement. Forbearance or indulgence in any form or manner by a party shall not be construed as a waiver, nor in any way limit the legal or equitable remedies available to that party. A waiver or breach of any term, condition, or covenant by a party shall not constitute a waiver or breach of any other term, condition or covenant. If any court of competent jurisdiction declares a provision of this Agreement invalid, illegal, or otherwise unenforceable, the remaining provisions of the Agreement shall remain in full force and effect.

22. Amendments: No amendment to this Contract shall be effective unless it is signed by authorized representatives of both parties and complies with all other regulations and requirements of law.

23. Entire Agreement: The parties understand and agree that this Contract and attachments (if any), which includes all Contract Documents, supersede all other verbal and written agreements and negotiations by the parties relating to the services under this Contract.

24. Notice: Unless otherwise specified in an attachment hereto, any notice hereunder shall be in writing addressed to the persons and addresses indicated in the caption of this Contract on page 1.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed in two (2) original copies on the day and year first above written.

OWNER:

CONTRACTOR:

Daryl Justin Finizio
Its Mayor

Its Duly Authorized Agent

Approved as to form:

Jeffrey T. Londregan, Esq., Director of Law

Date Signed _____

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____, as Principal

(hereinafter called Principal) and _____
as Surety, (hereinafter called Surety) are held and firmly bound unto _____
_____ as Obligee (hereinafter called Owner), for the use and
benefit of claimants as hereinbelow defined;
in the amount of _____ Dollars (\$
_____) for the payment whereof the Principal and Surety bind themselves, their heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____ entered into a Contract with the
owner for _____

_____ which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that, if the said Principal shall promptly pay for all materials furnished and labor supplied or performed in the prosecution of the work included in and under the aforesaid Contract, whether or not the material or labor enters into and becomes a component part of the real asset, then this obligation shall be null and void otherwise it shall remain in full force and effect.

PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or the giving by the Owner or any other forbearance on the part of either the Owner or the Principal to the other shall not in any way release the Principal and the Surety or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety for any such alterations, extension or forbearance being hereby waived.

Any party, whether a subcontractor or otherwise, who furnished materials or supplies or performs labor or services in the prosecution of the work under said Contract, and who is not paid therefore, may bring a suit on this Bond in the name of the person suing, prosecute the same to a final judgment and have the execution thereon for such sum as may be justly due.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Principal)

Attest:

(Business Address)

_____ By

Affix
Corporate
Seal

(Corporate Surety)

Attest:

(Business Address)

_____ By

Affix
Corporate
Seal

Countersigned
by _____

Attorney-in-Fact, State of _____, Power-of- Attorney for person signing for
Surety Company must be attached to Bond.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto _____ as Obligee, hereinafter called Owner, in the amount of _____ Dollars (\$ _____), for payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contract has by written agreement dated _____ entered into a Contract with Owner for _____

which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that, if Contractor shall promptly and faithfully perform said Contract, including such remedial work as may be required under the guaranty during the period of guaranty and shall certify in writing that all wages paid under said Contract to any mechanic, laborer or workman were equal to the rates or wages customary or then prevailing for the same trade or occupation in Connecticut, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions, by another Contractor acceptable to the Owner, said other Contractor to act as an agent for the Surety, or
- (2) Obtain a Bid or Bids for submission to the Owner for completing the Contract in accordance with its terms and conditions, and upon determination by the Owner and Surety of the lowest responsible Bidder, arrange for a Contract as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including, other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The terms "balance of the contract price", as used in this paragraph, shall mean the total amount payable by the Owner to the Contractor under the Contract and any amendments thereto, less the amount properly paid by the Owner to the Contractor.

Unless otherwise required by law, any suit under this Bond must be instituted before the expiration of one (1) year from the date on which the guaranty period under the Contract expires.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators and successors of the Owner.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents signed by its undersigned representative, pursuant to authority of its governing body.

No extension of time or other modification of this Bid Bond shall be valid unless agreed in writing by the parties to this Bond.

(Corporate Principal)

Attest:

(Business Address)

By

Affix
Corporate
Seal

(Corporate Surety)

Attest:

(Business Address)

By

Affix
Corporate
Seal

Countersigned
by _____

Attorney-in-Fact, State of _____, Power-of- Attorney for person signing for Surety Company must be attached to Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____ certify that I am the _____ of the Corporation named as Principal in the within bond; that _____ who signed the said bond on behalf of the Principal was then the _____ of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested to for and in behalf of said corporation by authority of this governing body.

Affix
Corporate
Seal

Title _____