SECTION 00 31 46
PERMITS

PART 1 – GENERAL

1.1. SUMMARY

A. Each project has varying requirements for permits, inspections, and fees based on the scope, size, and location of the project.

B. The City of Madison (Owner) is subject to all permits, inspections and associated fees for construction, demolition, utility connection, storm water management, and other similar requirements that may be required to complete the scope of work associated with these contract documents.

C. The General Contractor (GC) shall be responsible for obtaining all permits, inspections and paying for all associated fees unless specifically identified within this specification.

1.2. REFERENCES

A. The following references are not intended to be all inclusive. It shall be the GC's responsibility to determine all requirements based on the scope of work in the contract documents.

B. City of Madison Ordinances: Review all ordinances that may require a permit or fee that may be connected with a required permit. Contact the following City Agencies to determine the exact requirements during bidding
   1. Building Inspection
   2. Zoning
   3. Engineering
   4. Water Utility
   5. Traffic Engineering
   6. Others as may be specified by the contract documents.

B. State Statutes

C. Other Regulatory Regulations

D. Other Agencies or companies that may have related requirements
   1. Madison Metropolitan Sewerage District
   2. Local gas and electric utility companies
   3. Other utility companies

1.3. GENERAL CONTRACTORS REQUIREMENTS

A. The GC shall be responsible for all of the following:
   1. Execute application for all required permits as may be required by the scope of work described within the contract documents.
   2. Scheduling all required inspections that may be conditions of any required permits.
   3. Paying for other permits not explicitly stated as excluded in this section.

B. The GC is not responsible for paying for the City Building, City HVAC, City Electrical, City Plumbing, Madison Fire Department Sprinkler and Madison Fire Department Fire Alarm permits.

C. The GC shall provide high quality scanned images of all required permits and inspections to the City Project Manager (CPM).

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 – EXECUTION – THIS SECTION NOT USED

END OF SECTION

SECTION 00 43 25
SUBSTITUTION REQUEST FORM (DURING BIDDING)

PART 1 – GENERAL

1.1. SUMMARY

A. The City of Madison uses a specific list of preferred products for various specification items to establish standards of quality, utility, and appearance required.

B. The City of Madison will not allow substitutions for specified Products except as follows:

1. The Product is no longer produced or the product manufacturer is no longer in business.
2. The manufacturer has significantly changed performance data, product dimensions, or other such design criteria for the specified Product(s).
3. Products specified by naming one or more Products or manufacturer's and "or approved equal" or "approved equivalent."

C. The procedures in this specification shall apply to all proposals by Contractors, Suppliers, Vendors, and Manufacturers when the conditions in item 1.1.B. above have been met during the bidding phase.

1.2. RELATED SPECIFICATIONS

A. 01 25 13 Product Substitution Procedures

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.1. REQUESTING A SUBSTITUTION DURING BIDDING

A. In the event that a substitution is requested during the bidding phase the Contractor, Supplier, Vendor, or Manufacturer shall do all of the following:

1. Submit a Substitution Request Form for each different product. Use a printed/scanned copy of the form at the end of this specification as a cover sheet.
2. Support your request with complete data, drawings, specifications, performance data and samples as appropriate. A complete submission shall include the following:
   a. Substitution Request Form as a cover sheet
   b Comparison of qualities of the proposed substitutions with that specified.
   c. Changes required in other elements of the Work because of the substitution.
   d. Effect on the construction schedule.
   e. Cost data comparing the proposed substitution with the Product specified.
   f. Any required license fees or royalties.
   g. Availability of maintenance service and source of replacement materials.
3. Submit the Substitution Request Form and all required supporting documentation to the City Project Manager and Project Architect.
   a. Submissions to be done as complete PDF files for each product, appropriately titled
   b. Email submissions to the Project Architect and City Project Manager at the email addresses provided on the last page of Section D of the contract documents.
      i. The subject line shall include the contract number and "Request for Substitution". Example: Contract 1234 – Request for Substitution
4. Submissions must be received by the substitution request deadline specified in Section A of the Contract Documents.

3.2. SUBMISSION REVIEW

A. The Project Architect, City Project Manager, members of the design team, and the Owners staff shall review all submissions for substitutions during the bidding phase.

3.3. SUBSTITUTION APPROVAL

A. All requests for substitutions that have been approved shall be published by Addenda to the bid documents.

NOTE SEE NEXT PAGE FOR SAMPLE SUBSTITUTION REQUEST FORM.

3.4. SUBSTITUTION REQUEST FORM

For Pre-bid Substitution Requests all text boxes on this form are required information for a complete request.

Substitution Request

Today's Date:

Project Title:

Project Number: *Contract Number:*

By completing and submitting this form for review the General Contractor affirms that all of the following statements are correct:

1. The General Contractor affirms that this request is in compliance with the requirements described in ***Specification 01 25 13 Product Substitution Procedures.***
2. The function, appearance, and quality of the proposed substitution are equal or superior to the specified item.
3. The proposed substitution does not affect dimensions shown on the drawings.
4. The proposed substitution will have no adverse affects on other trades, the construction schedule, or any specified warranty requirements.
5. Maintenance and service parts will be locally available for the proposed substitution. (GC shall provide supporting documentation in the attachments section below.)
6. The General Contractor shall be responsible for any and all costs associated with this substitution request if approved. This includes but is not to limited to fees for building design, engineering design fees, detailing fees, plan review fees, construction costs, and inspection fees.

GC Substitution Request:

General Title:

Related Specification:

Reason for Substitution:

Proposed Substitution:
(include Name, Model, etc.)

Submitted By: *Phone:*

Company: *Email:*

END OF SECTION

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SECTION 01 33 23
SUBMITTALS

PART 1 – GENERAL

1.1. SUMMARY

A. The General Contractor (GC) shall be responsible for providing submittals for review of all contractors and sub-contractors as designated in the construction documents. Submittals shall include but not be limited to all of the following:
   1. Equipment specified and pre-approved in the specification; to ensure quality, construction, and performance specifications have not changed since final design.
   2. Equipment specified by performance in the specification; to ensure that the intended quality, construction, and performance specified is met by the selected material or product.
   3. Shop, piece, erection, and other such drawings as indicated in the specifications to ensure all structural, dimensional, and assembly requirements are being met.
   4. Submittals indicating installation sequencing
   5. Submittals indicating control sequencing
   6. Contractor licensing, certification, and other such regulatory documentation when required by a specification.
   7. Other submittals as may be required by individual specifications.

B. The submittal process shall not be used to determine alternates to specified products or equipment. All considerations shall be reviewed during the bidding process and acceptable alternates shall be acknowledged by addendum prior to the closing of bidding. See bidding instructions for the information on submitting alternates for consideration.

D. In the event that a manufacturer has significantly changed a product (discontinued a model, changed dimension or performance data changed available colors, etc.) since bid opening the GC shall submit a Request for Information (RFI) to the Project Engineer requesting other approved alternates prior to uploading a digital submittal.

E. Contractors and sub-contractors shall be responsible for knowing the submittal requirements of ALL sections within their scope of work under the contract. The Owner reserves the right to request documentation on any materials, equipment, or product being installed where a submittal is not on file. If the material, equipment, or product installed is determined not to meet the intent of the specification the contractor/sub-contractor shall be required to remove and replace the items involved. The GC shall be solely responsible for all costs associated with the removal and replacement.

1.2. RELATED REFERENCES

A. Section 01 29 76 Progress Payment Procedures
B. Section 01 32 19 Submittals Schedule
C. Section 01 32 26 Construction Progress Reporting
D. All Technical Specifications, contract documents, construction drawings, and any published addendums during the bidding process.
E. All contract documents generated during the execution of the contract including but not limited to Requests for Information (RFI) and Construction Bulletins (CB).

1.3. SUBMITTAL REQUIREMENTS

A. A completed submittal shall meet the following requirements:
   1. Digital submittal shall be original PDF of manufacturer's data sheets or high quality color scan of the same.

a. Submittals shall not include sales fliers or other similar documents that typically do not provide complete manufacturers data.

2. Documents within the PDF submittal shall be printable to a sized sheet no less than 8-1/2 by 11 inches and no larger than 24 by 36 inches.

3. At the beginning of each submittal the contractor shall identify the plan reference (WC-1, EF-3, etc.) in RED block letters that the submittal is for.

4. Where multiple model numbers appear in a table the contractor shall identify the specific model being submitted by using a RED square, box, or other designation to distinguish the correct model from others on the page.

B. A complete submittal will include all information associated with the product or equipment as presented in plans, equipment tables, and specifications. Information shall include but not be limited to the following:

1. Dimensional data
2. Performance data
3. Resource requirements, power, water, waste, etc
4. Clearance and maintenance requirements
5. Finish information, colors, textures, etc.
6. Warranty information

C. Where a submittal includes material samples (carpet, tile, paint draw downs, etc.) the contractor shall do the following:

1. The Contractor shall submit the sample(s) as indicated in the specification.
2. The Contractor shall include a quality photograph(s) of the product with the digital submittal. Photographs shall meet the following requirements:
   a. Formatted to be between 500Kb and 1.0 Mb in file size
   b. Have no glare or flash reflection on the sample
   c. Sample fills the frame of the photo and shows detail as needed. Include multiple photos from other angles as needed.
   d. Scanned copies of products or photos are not acceptable.

D. Uploaded submittals should be relative and related to a specific written specification.

1. Do not upload submittals under a broad category or division (I.E. HVAC 23 00 00). Always upload by the specific specification that identifies a required product or performance to be met.
2. Group related items together if the specification is written that way. (I.E. all of the plumbing fixtures and trim relative to one specific specification should be submitted together).
3. Submittals shall be grouped and adhere to the divisions in the submittal schedule. Submittals that do not conform to the submittal schedule and/or specification divisions will be rejected for re-submittal.

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.1. GENERAL CONTRACTORS PROCEDURES

A. All required submittals will be submitted electronically by the GC.

B. Uploading the submittal indicates that the GC has reviewed and approved the submittal against the contract document requirements.

C. The GC shall discuss submittal status at all progress meetings and shall monitor submittal review/approval/re-submittal so as to not incur delays in the project schedule.

D. The GC and sub-contractors shall provide re-submittals as required.

3.2. SUBMITTAL REVIEW

A. The submittal shall be reviewed internally by the required Architect/Engineer and Owner Representative in a timely fashion and provide commentary on missing items, incorrect information, or incomplete shop drawings, etc as needed.

B. When the internal review is completed the CPM will notify the Project Engineer the submittal is ready for final review.

C. Information will be transmitted electronically.

3.3. PROJECT ENGINEERS REVIEW

A. Upon completion of the internal review the Project Engineer shall review all internal review comments, confer with the CPM as needed and determine the appropriate disposition status for the submittal (approved or resubmit).

B. The Project Engineer shall summarize final internal review comments onto the submittal cover sheet, provide a final disposition of the submittal and update the review status of the submittal to "Complete…" (with or w/o comments) or "Rejected".

C. A completed Final Review status initiates the CPM to notify the GC and appropriate sub-contractor(s) that the review of the submittal has been completed.

D. Information will be transmitted electronically.

END OF SECTION

SECTION 01 74 13
PROGRESS CLEANING

PART 1 – GENERAL

1.1. SUMMARY

A. Throughout the execution of this contract all contractors shall be responsible for maintaining the project site in a standard of cleanliness as described in this specification.

B. All contractors shall also comply with the requirements for cleaning as described in other specifications.

C. Work included in this specification shall include but not be limited to:

1. Safety Cleaning
2. Project Site Cleaning
3. Progress Cleaning
4. Final Cleaning

1.2. RELATED SPECIFICAITONS

A. Section 01 60 00 Product Requirements

B. Section 01 74 19 Construction Waste Management and Disposal

C. Section 01 76 00 Protecting Installed Construction

1.3. QUALITY ASSURANCE

A. The General Contractor (GC) shall conduct daily inspections, more often if necessary, of the entire project site to ensure the requirements of cleanliness are being met as described within these specifications.

B. All contractors shall comply with other regulatory requirements as they apply to waste recycling, reuse, hauling, and disposal requirements of any governmental authority having jurisdiction.

C. The Owner reserves the right to have work done by others in the event any contractor fails to perform cleaning as described within these specifications. The cost of any Owner provided cleaning shall be charged to the contractor through a deduct change order.

PART 2 - PRODUCTS

2.1. CLEANING MATERIALS AND EQUIPMENT

A. The Contractor shall provide all required personnel, equipment, and materials necessary to maintain the required level of cleanliness as described in this specification.

B. Use only cleaning materials and equipment that are compatible with the surface being cleaned, as recommended by the manufacturer, or as approved by the A/E.

C. Use only cleaning materials, equipment, and methods as recommended in the manufacturers care and use guide of the material, finish or equipment being cleaned.

PART 3 - EXECUTION

3.1. SAFETY CLEANING

A. All Contractors shall be responsible for safety cleaning as required by OSHA and other regulatory requirements as applicable.

B. Safety Cleaning shall include but not be limited to the following:

1. All work areas, passageways, ramps, and stairs shall be kept free of debris, scrap materials, pallets, and other large items that would obstruct exiting routes. Small items such as tools, electrical cords, etc are picked up when not in use.
2. Form and scrap lumber shall have nails/screws removed or bent over. Lumber shall be neatly stacked in an area designated by the GC.
3. Spills of oil, grease, and other such liquids shall be cleaned immediately or sprinkled with sand/oil-dry first, then cleaned.
4. Oily, flammable, or hazardous items shall be stored in appropriate covered containers and storage devices unless actively being used.
5. Oily, or flammable rags, and other such waste shall only be disposed of in authorized covered containers.
6. Disposal by burning shall not be allowed at any time.

3.2. PROJECT SITE CLEANING

A. This section applies to the general cleanliness of the project site as a whole for the duration of the execution of this contract.

B. Exterior Project Site Areas

1. The GC and other Contractors as appropriate shall ensure the following levels of cleanliness are applied to the exterior project site areas.
   a. The overall appearance of the project site is neat and orderly. Defined areas for material storage, material waste, job trailers, and the project area are clean and well maintained.
   b. The construction fence is maintained, erect with no gaps, and properly posted per all regulatory requirements.
   c. All erosion control measures are properly maintained, cleaned, and repaired as necessary.
   d. All loose materials (construction or waste) are properly tied or weighted down to resist blowing.
   e. All construction materials are properly covered with fully functional tarps or plastic wrap, protected from the weather, coverings are tied, strapped, or weighted down to resist blowing.
   f. Dust control is applied as necessary or as required by any regulatory requirement.

C. Interior Project Site Areas

1. All Contractors shall ensure the following levels of cleanliness are applied to the interior project site areas.
   a. The overall appearance of the project site is neat and orderly. Defined areas for material storage, material waste, and project area are clean and well maintained.
   b. Stored materials are kept in original shipping containers whenever possible. Stored materials not in shipping containers are properly stored and protected according to other applicable specifications.
   c. All scraps and debris shall be properly disposed of as often as necessary to keep work areas, passageways, stairs, and ramps free of debris and clear for emergency exiting.
   d. Boxes, pallets, and other such shipping containers, are broken down, stored in a consolidated area or, disposed of as often as is necessary.
   e. Hand tools, supplies, materials, electrical cords not being used are picked up and sptored in gang boxes, not left as walking hazards in work areas, passageways, etc.

D. Job Trailer

1. The interior of the job trailer shall be kept clean and available as a work space at all times. The GC shall ensure that the following is provided for within the job trailer:
   a. Meeting space including tables and chairs.
   b. Sufficient space for all contractors to access the official construction documents, provide updates, etc.

3.3. PROGRESS CLEANING

A. This sub-section shall apply to all Progress Cleaning prior to the installation of finishes, fixtures, and trim (IE rough-in).

1. For the purposes of this section “clean” shall be defined as a level of cleanliness free of dust and other material capable of being removed by use of reasonable effort using a good quality janitor broom and shop-vac.
2. Daily cleanings shall be conducted by all contractors at the end of the work day as follows:
   a. Debris in excavated areas shall be removed prior to backfill and compaction.
   b. Debris in wall cavities, chase spaces, etc shall be removed prior to enclosing the spaces.
   c. Large items shall be properly stored, returned to designated areas, or disposed of as necessary.

d. Loose materials shall be properly secured.
e. Flammable or hazardous materials are properly stored or disposed of.

3. Weekly cleaning shall be conducted by all contractors as designated by the GC. Weekly cleanings shall include all the above for a daily cleaning and other necessary cleaning as designated by the GC.

B. This sub-section shall apply to Progress Cleaning in preparation for the installation of finishes, fixtures, and trim.
a. Surfaces receiving finishes shall be thoroughly cleaned prior to contractors applying finish materials. The GC shall be responsible for inspecting the area and surfaces being cleaned for finish prior to the sub-contractor applying the finish. This shall include but not be limited to the following:
i. Wall surfaces shall be wiped clean of dirt and oily residues, vacuumed free of dust, and shall be free of surface imperfections prior to painting or installing wall coverings.
ii. Metal surfaces shall be wiped clean of dirt and oily residues, and be free of surface imperfections prior to painting.
iii. Flooring shall be broom swept of large and loose items then vacuumed clean of dust and small particles, and damp mopped clean and dried prior to installing any flooring finish. Additional cleaning may be required depending on the preparation requirements recommended by the flooring material manufacturer.

C. This sub-section shall apply to Progress Cleaning after the installation of finishes, fixtures, and trim.
1. For the purposes of this section "clean" shall be defined as a level of cleanliness free of dust and other material capable of damaging or visually disfiguring finished work, finishes, fixtures, and trim.
2. Progress Cleaning at this point in the contract shall be conducted immediately as follows:
a. Dust, dirt, etc shall be swept and vacuumed off of finish flooring and trim.
b. Liquid spills shall be cleaned up according to the spill type. This shall include drips and spills caused by paint, stain, sealants, and other such items.
3. The Contractor(s) at no additional cost to the Owner shall be responsible for replacing any finished work, finishes, fixtures, and trim damaged or disfigured because of inadequate or improper cleaning.

3.4. FINAL CLEANING

A. As noted in Specification 01 29 76 Progress Payment Procedures, Progress Payment Milestone Schedule, Final Cleaning shall not be conducted prior to requesting the 90% contract total progress payment and all of the following shall be complete:
1. All final regulatory inspections including but not limited to Building Inspection Department and Madison Fire Department inspections have been successfully completed.
2. All Quality Management Observation (QMO) reports have been closed out.
3. All Demonstration and Training has been completed.
4. All Attic Stock has been consolidated and located to its designated area
5. All protection for installed construction shall be removed prior to final cleaning by the contractor responsible for providing the protections. This shall include the removal of any adhesive residues left behind from tapes. Contractors shall only use manufacturer authorized cleaning materials for removing adhesives, etc.

B. For the purposes of this section "clean" shall be defined as a level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

C. The GC shall be responsible for ensuring that all requirements under this section are being met.

D. General Requirements
1. Employ experienced personnel or professional cleaners for final cleaning as necessary for the areas or equipment being cleaned.
2. Cleaning equipment used shall be commercial grade equipment commonly used by professional cleaners.
3. Cleaning equipment and materials shall be cleaned, rinsed, or replaced to ensure a uniform level of cleanliness is being maintained during the final cleaning. This shall include but not be limited to the following:
a. Vacuum cleaner bags and/or filters are changed and/or cleaned as often as necessary.
b. Dust & wipe down rags are washed, rinsed, or replaced before starting each room.
c. Mopping equipment
i. Mop water for washing shall have cleaning solution added to the amount and temperature per manufacturer's recommendations. Mop washing water shall be replaced often to maintain the levels of the cleaning solution and temperature required.
ii. Mop water for rinsing shall remain clean, clear, and be replaced as often as necessary.
iii. Mop heads shall be rinsed often and replaced as necessary.

iv. Mop heads and buckets shall be thoroughly rinsed with each change of water.
v. Only new mop heads shall be used for rinsing.

E. Refer to all other specifications in this contract for specific requirements regarding final cleaning of finishes, fixtures, equipment, etc.

F. Exterior Cleaning shall include but not be limited to the following:
1. All exterior glazing surfaces have been professionally cleaned and are free of dust and streaking.
2. Metal roofs, siding, and other surfaces shall be clean of dirt and free of splashed or excess materials such as sealants, mortar, paint, etc.
3. All exterior furnishings shall be clean, waste receptacles shall be empty.
4. Paved areas shall be clean, free of dirt, oily stains and other such blemishes
5. Exterior lights and diffusers are clean and free of dust.

G. Interior Cleaning shall include but not be limited to the following:
1. Remove all labels, stickers, tags, and other such items which are not required by code as permanent labels.
2. All interior glazing surfaces, including mirrors, have been professionally cleaned and are free of dust and streaking.
3. All interior surfaces have been cleaned of excess materials such as paint, sealants, etc and have been wiped free of dust.
4. Interior metals, fixtures, and trim have been cleaned free of dust and oily residues
5. Carpet flooring has been thoroughly cleaned; vacuumed free of dust, excess glues and other stains removed per manufacturers use and care instructions.
6. Resilient flooring has been thoroughly cleaned; vacuumed free of dust, excess glues and other stains removed, mopped and buffed per manufacturers use and care instructions.
7. Interior non-occupied concrete floors shall be broom cleaned, vacuumed free of dust, excess glues and other stains removed per manufacturers use and care instructions.
8. Light fixtures, lamps, diffusers and other such items have been dusted and cleaned as necessary.

3.5. CALL BACK WORK

A. The GC shall be responsible for ensuring that any contractor returning to the project site for completion or correction work has re-cleaned and restored the area to the levels described in section 3.4 above upon completion of the work. This shall include but not be limited to the following:
1. The immediate area(s) where work was completed.
2. Adjacent areas where dust or debris may have traveled.
3. Other areas occupied during the completion of the call back work.
4. Path of entrance/exit, to/from the area(s) of work.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.1. SUMMARY

A. This specification includes administrative and procedural requirements for the recycling, re-use, salvaging, and disposal of non-hazardous construction and demolition waste.

B. The General Contractor (GC) shall be fully responsible for complying with all applicable ordinances and other such regulatory requirements during the execution of this contract.

1.2. RELATED SPECIFICAITONS

A. 01 29 76 Progress Payment Procedures

B. 01 33 23 Submittals

C. 01 77 00 Closeout Procedures

D. Other Divisions and Specifications that may address the proper disposal of construction or demolition waste as it pertains to work being conducted under that particular specification.

1.3. CITY ORDINANCES

A. There are two (2) Madison General Ordinances (MGO) that the City of Madison has regarding construction and demolition waste.

1. MGO 10.185, Recycling and Reuse of Construction and Demolition Debris, describes the requirements associated with this ordinance including definitions, documentation requirements, and penalties.
2. MGO 28.185, Approval of Demolition (Razing, Wrecking) and Removal, describes the requirements associated with applying for and receiving a demolition permit.

B. All City of Madison, Board of Public Works, contracts being conducted by City Engineering, Facility Management, for construction, remodeling, or demolition shall comply with the above ordinances regardless of project type or size.

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.1. GENERAL GUIDELINES FOR ALL WASTES

A. Recycle all paper and beverage containers used by workers, sub-contractors, suppliers and visitors to the project site.

B. All revenues, savings, rebates, tax credits, and other such incentives received from recycling, reusing, or salvaging waste materials shall accrue to the GC unless specified otherwise in the contract documents.

C. Separate recyclable, reusable, and salvageable waste from other waste materials, trash, and debris except where Waste Management Disposal Company allows comingled waste materials, see section 1.8.D above.

1. Separate by type in appropriate containers or designated areas according to the approved waste management plan away from the construction area. Do not store within the drip lines of existing trees.
2. Inspect containers and bins frequently for contamination and inappropriately sorted materials. Remove contaminated materials and resort as necessary.

3. Stockpile bulk materials such as sand, topsoil, stone, etc., on site away from the construction area and without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water, and cover to prevent windblown dust. Do not store within the drip lines of existing trees.
4. Whenever possible store items off the ground and/or protect them from the weather.

3.2. GUIDELINES FOR RECYCLABLE, RE-USABLE, AND SALVAGEABLE WASTE

A. The following guidelines is not a complete or all inclusive list and shall be adjusted as needed by the methods and procedures identified in the Waste Management Plan.
B. Asphalt Paving: Break-up into transportable pieces or grind, transport to an authorized recycling facility.
C. Carpet and Pad: Separate carpet and pad scraps, containerize and transport to an authorized recycling facility.
D. Ceiling System Components: Suspended ceiling system components shall be sorted by material type as follows:
   1. Broken, cut, or damaged tiles shall be containerized, transport to an authorized recycling facility.
   2. Damaged, or cut tracks, trim and other metal grid system components shall be sorted with other metals of similar types, palletize, transport to an authorized recycling facility.
E. Clean Fill: When allowed by Division 31 Specifications; concrete, masonry, stone, asphalt pavement, sand and other such materials may be used as clean fill on this project site. The GC shall verify with the Project Engineer, Structural Engineer, or Civil Engineer as necessary prior to using any materials as clean fill. Materials shall be processed, placed, and compacted as specified. If not being re-used on site, transport to an authorized recycling facility.
F. Clean Wood Materials: Including but not limited framing cutoffs, wood sheathing or paneling materials, structural or engineered wood products, and pallets or crates. Clean Wood shall be free of paints, stains, oils, preservatives and other such contaminates.
   1. Useable pieces shall be sorted by type and dimension, bundled and transported off site by the GC or returned to the supplier.
   2. Non-useable pieces shall be palletized or containerized, transport to an authorized recycling facility.
   3. Clean, uncontaminated sawdust and wood shavings shall be bagged, transport to an authorized recycling facility.
G. Concrete: Break-up into transportable pieces, remove all reinforcing and other metals, transport to an authorized recycling facility.
H. Glass Products: Shall be sorted by types, do not include light fixture lamps and bulbs. Products broken in shipment shall be returned to the supplier. Broken or cracked items still in frames shall be taped to prevent further breakage and injury to workers. Transport to an authorized recycling facility.
I. Gypsum Board: Stack large clean pieces on wooden pallets or container, store in a dry location, transport to an authorized recycling facility.
J. Light Fixture Lamps and Bulbs: Fluorescent tubes shall be containerized, transport to an authorized recycling facility.
K. Masonry and CMU: Remove all metal reinforcing, anchors, and ties, clean undamaged pieces and neatly stack on pallets, transport damaged pieces to an authorized recycling facility.
L. Metals: Sort metals by type as follows, this does not include piping:
   1. Architectural metals including but not limited to siding, soffit, and roofing panels shall be sorted by material, palletize or bundle as needed and transport to an authorized recycling facility.
   2. Structural steel, sort by size and type; palletize and transport to an authorized recycling facility.
   3. Miscellaneous metals such as aluminum, brass, bronze, etc shall be sorted by type, containerized or palletized as necessary, transport to an authorized recycling facility.
M. Packaging and shipping materials
   1. Cardboard boxes and containers: Breakdown all cardboard boxes and containers into flat sheets. Bundle and store in a dry location until transported for recycling.
   2. Pallets:
      a. Whenever possible require deliveries using pallets to remove them from the project site.
      b. Neatly stack pallets in preparation for reusing them or providing them to other companies for salvage or re-use.
      c. Break down pallets into component wood pieces that comply with the requirements for recycling clean wood materials. Neatly stack or palletize pieces in preparation for transportation.
   3. Crates: Break down crates into component wood pieces that comply with the requirements for recycling clean wood materials. Neatly stack or palletize pieces in preparation for transportation.
   4. Polystyrene Packaging: Separate and bag materials.

N. Piping and conduit: Reduce all piping and conduit to straight lengths, sort and store by size, material and type. Remove supports, hangers, valves, boxes, sprinkler heads, and other such components, sort and store by size, material and type. Transport to authorized recycling facilities according to material types.

O. Roofing: Roofing materials shall be sorted and containerized by type, transport to authorized recycling facilities according to material types.

P. Site-Clearing Waste: Sort all site waste by type.

1. Only stockpile soils types and quantities required for re-use on the project site. All remaining quantities shall be transported off site to an authorized facility that receives such materials.
2. Brush, branches, and trees with no marketable re-use shall be transported to facilities for chipping into mulch.
3. Trees with a marketable re-use shall be salvaged and transported to facilities that specialize in processing trees for future use as wood products.

3.3. GUIDELINES FOR DISPOSAL OF WASTES

A. The following guidelines shall be adjusted as needed by the methods and procedures identified in the Waste Management Plan.

B. Any waste that is contaminated, organic, or cannot be recycled, re-used, or salvaged shall be legally disposed of in an authorized landfill or incinerator. Disposal methods shall follow all applicable regulatory requirements.

C. No waste material of any kind, except those types designated as clean fill in section 3.4 above, shall be allowed to be buried on the project site at any time.

D. No burning of any kind of waste material shall be permitted on this project site at any time.

E. Paint and Stain: Paints, stains, and their containers shall be disposed of as follows:

1. Whenever possible containers should be thoroughly cleaned immediately after emptying and sorted with as appropriate (metal or plastic) for recycling
2. Empty containers, regardless of type or base material, may be disposed of with lids off with general garbage.
3. Latex paint may be placed with general garbage if properly solidified as follows:
   a. Small amounts (an inch or less in can): Remove lids and allow paint to dry out in the can and harden. Protect cans from rain and freezing.
   b. Large amounts (more than one inch): Mix paint with equal amounts of cat litter, stir and allow to completely dry. Alternate method: mix with commercial paint hardener.
4. Oil-based or combustible paints and stains, regardless of liquid or solid, shall be transported to an approved facility that takes such items such as Dane County Clean Sweep Sites.

F. Treated Wood Materials: Treated wood materials including but not limited to wood that has been painted, stained, or chemically treated shall not be recycled or incinerated.

END OF SECTION

SECTION 01 76 00
PROTECTING INSTALLED CONSTRUCTION

PART 1 – GENERAL

1.1. SUMMARY

A. The purpose of this specification is to provide clear responsibilities, guide lines, and requirements related to providing protection to already installed construction.

B. Already installed construction shall include but not be limited to the following:

1. Any existing site feature such as pavement, curbs, drainage features, utilities, landscaping features (trees, shrubbery, plantings, flagpoles, etc) and other such exterior items not associated with the building whether on or adjacent to the project site.
2. Any existing structure on or adjacent to the project site.
3. Any existing interior work that may be adjacent to the new work including all paths of ingress/egress to areas associated with accessing the Work.
4. Any existing feature of any kind within the public right-of-way that may be on the project site property, adjacent to the project site or across the street from the project site.

C. All contractors shall be familiar with the specifications of their Division of Work for specific requirements on protection of the Work.

D. The requirements noted within this specification do not relieve any contractor of the responsibility for compliance with any code, statute, ordinance, or other such regulatory requirement having jurisdictional authority over these contract documents.

1.2. QUALITY ASSURANCE

A. It shall be the responsibility of every contractor and worker assigned to the project to be diligent in protecting all existing work, and newly installed construction.

B. It shall be the General Contractors' (GC) responsibility under the contract to provide all reasonable protection methods, materials, or precautionary measures required to protect new or existing construction as described in within this specification to the project as a whole.

1. The GC shall be responsible to ensure any damaged new or existing construction is repaired or replaced at no additional cost to the Contract.
2. The GC at his/her discretion may direct other contractors to provide and maintain protection of completed work associated with their Division of Work. I.E.: The carpet installer may be required by the GC to provide carpet protection along traveled paths, ingress/egress, etc after installation.

C. It shall be the responsibility of the GC to ensure that all materials being used to protect installed construction are compatible with, and/or adjacent to, the materials being protected. This shall include but not be limited to the material used as covering, tapes used to fasten protective materials, etc.

1.3. RELATED SPECIFICATIONS

A. Parts of this specification will reference articles within "The City of Madison Standard Specifications for Public Works Construction".
   1. Use the following link to access the Standard Specifications web page:
      http://www.cityofmadison.com/business/pw/specs.cfm
      a. Click on the "Part" chapter identified in the specification text. For example if the specification says "Refer to City of Madison Standard Specification **2**10.2" click the link for Part II, the Part II PDF will open.
      b. Scroll through the index of Part II for specification 210.2 and click the text link which will take you to the referenced text.
      c. City Standard Detail Drawings (SDD) may be located from the index in Part VIII.

B. Section 01 60 00 Product Requirements

C. Section 01 74 13 Progress Cleaning

PART 2 - PRODUCTS

2.1. FENCING MATERIALS AND BARRICADES

A. Except where noted in other areas of the construction documents the responsible contractor may provide any of the following that sufficiently provide a sturdy physical barrier and/or visual barrier as necessary for the intended application.
   1. Standard orange construction barrels each with a standard rubber base ring and reflective tape
      a. Provide flashing amber lights as needed to increase night time visibility
   2. Steel "T" style fence posts
   3. 4'0" high standard orange construction fence
   4. Traffic barricades
   5. Jersey barriers
   6. Other types of fencing or barricades typically used in the construction industry

B. The contractor responsible for providing the fencing materials and barricades shall also be responsible for maintaining them. This shall include but not limited to fixing damaged fencing, standing up barrels that have been knocked over, realigning barrels, and ensuring flashing lights are fully operational at all times.

C. The following fencing and barricade designations, and their use descriptions shall be used throughout this specification to provide uniformity in describing protection requirements.
   1. Type A, Jersey Barriers, to be used as permanent blocking devices to deny access to alternate project site entrances or exits.
   2. Type B, Traffic Barricades, to be used as temporary blocking devices to deny access to alternate project site entrances or exits.
   3. Type C, Construction Barrels without construction fencing shall be used for lane closures, temporary blocking devices to deny access and the protection of single locations (I.E. identify the location of an access structure) that do not require fencing.
   4. Type D, Construction Barrels with construction fencing where it becomes necessary to surround an object with a complete visual barricade and it is impractical or unacceptable to install fence posts. The surround shall be constructed in such a manner as to provide a buffer zone around and access to the item being protected.
   5. Type E, Steel "T" Fence Posts with construction fencing to surround an object with a complete visual barricade and it is practical to install fence posts. The surround shall be constructed in such a manner as to provide a buffer zone around and access to the item being protected.
   6. Type X, Other fencing or barricade types that may be designated and detailed within the construction documents shall use additional alpha numeric designations.

2.2. EROSION CONTROL PROTECTION

A. Refer to City of Madison Standard Specification 210.2 for authorized materials associated with erosion control materials.

2.3. INTERIOR FINISH PROTECTION MATERIALS

A. Except where noted in other areas of the construction documents or this specification the responsible contractor:
   1. Shall not provide the cheapest or least effective method as an effort to meet any protection requirement.

2. Shall provide materials of sufficient quality, and durability to provide adequate protection based on the seasonal conditions and the anticipated duration at the time the protection will be needed.
3. Shall provide sufficient quantity of protection material to protect the construction as needed.

B. Prior to installing protective measures the responsible contractor shall propose to the GC, Project Engineer (PE) and City Project Manager (CPM) the proposed plan for protection, materials to be used and samples as necessary.
1. The PE and CPM reserve the right to disapprove any proposed method and/or material and/or make alternate proposals.

PART 3 - EXECUTION

3.1. GENERAL EXECUTION REQUIREMENTS

A. The GC shall be responsible for ensuring all of the following procedures and requirements are implemented as needed for the duration of the Work performed under this contract.

B. The GC shall also be responsible for the following:
1. Reporting any incident of damage to existing property, right-of-way, or utility to the CPM immediately upon rendering the incident safe, and notifying emergency response teams, and emergency utility crews as needed.
2. Conduct a site walk through prior to leaving at the end of each day to assess:
   a. Protection measures are properly in place, provide correction actions as necessary.
   b. Note damage to existing completed work and schedule repair/replacement as needed.
3. Ensure all contractors and workers are being diligent in protecting existing work, and newly installed construction.

3.2. PROTECT ADJACENT PROPERTIES

A. Whenever possible through the design process the City of Madison shall have previously provided notice to adjacent property owners that work will be occurring on or near their property. The City of Madison shall also have obtained any permanent or temporary easements that may be necessary to complete any Work on adjacent properties.

B. It shall be the responsibility of the GC to do the following for all Work under this contract being performed on or adjacent to the property line:
1. Contact the adjacent property owner and provide him/her with information on the work to be done, equipment to be used, and estimated duration of the work. Information to be updated and communicated to property owner(s) as construction progresses and site conditions change.
   a. If any adjacent property is a rented or leased space the GC shall also make contact and provide the same information to the tenants.
   b. Determine from the owner and/or tenants if there are any concerns for children, pets, special plantings, or other concerns.
2. Discuss the following with all contractors performing work on or near the property line.
   a. Work to be completed and timeline.
   b. Concerns of adjacent property owners/tenants from item 1 above.
   c. Which protective measures will be necessary to protect adjacent properties and address the concerns of adjacent property owners/tenants.
3. Ensure all protective measures are placed and maintained during the execution of Work on or adjacent to the property line. Interact with the adjacent property owners/tenants as needed.

C. Any contractor doing work on or adjacent to the property line shall install and maintain any protective measure identified in the contract documents, this specification, or as directed by the GC.

D. The GC shall be responsible for restoring any damage to structure and property located on or adjacent to the property line.
1. Restoration shall include but not be limited to repair or replacement using like materials and finishes to its original condition or better.
2. Restoration of landscaping materials shall include watering of any seed, sod, or other planting of any kind for a reasonable period of time to encourage germination and root development.

E. The GC shall keep the CPM informed directly to any issues pertaining to adjacent property owners and tenants.

3.3. PROTECT LANDSCAPING FEATURES

A. Except where specifically stated in other areas of the construction documents the following minimal protection requirements shall apply under this section.

1. Whenever possible do not install new landscape features until exterior building construction has been completed, equipment such as scaffolding and lifts are no longer needed and have been removed, and heavy equipment operation is no longer required.
2. Whenever possible remove and temporarily store all existing landscape features such as benches, waste receptacles, signage, and other such features that will be within the area of Work that can be removed.
3. Landscape features that cannot be removed such as flag poles, light poles, light bollards, etc. shall be protected with Type D fencing for areas on pavement or Type E fencing for areas on soil.
4. Planting beds shall be protected using Type E fencing around the exposed perimeter of the planting bed as needed.
5. The City of Madison Standard Specification 107.13 shall apply to all tree protection in and around the project site at all times.

3.4. PROTECT UTILITIES

A. The contractor shall be responsible for notifying all utilities to determine emergency response procedures and protection requirements prior to installing any construction protection.
   1. This includes requesting utility marking through Diggers Hotline.
      a. Call 811 or 1-800-242-8511 to request a public utility locate
      b. For emergency locate call (262) 432-7910 or (877) 500-9592
   2. Contact the Owner and CPM for any available private utility information on the property that may be available prior to calling a private utility locating company.

B. Except where specifically stated in other areas of the construction documents the following minimal protection requirements shall apply under this section.
   1. Hydrants, lamp posts, electrical transformers, and other utility pedestals shall be protected with Type D fencing for areas on pavement or Type E fencing for areas on soil. Fence posts shall be located so as to not be directly over the utility main.
   2. Storm sewer structures in pavement shall have proper inlet protection according to City of Madison Standard Specification 210.1(g) and Type C Construction Barrels when necessary.
   3. Storm sewer structures in turf and other landscaped areas shall have proper inlet protection according to City of Madison Standard Specification 210.1(g) and Type E fencing for areas on soil.
   4. Stormwater management features such as greenways, retention/detention ponds, bio-filtration ponds and other such features shall be properly protected according to the appropriate erosion control measure specified on the Erosion Control Plan. See multiple sections of City of Madison Standard Specification 210.1
      a. For the protection of hard to see items such as structures, castings, inlets, etc. in grassy areas provide Type E fencing for areas on soil.
      c. For the protection of storm water management features having special soils and plants such as bio-filtration ponds provide Type E fencing for areas on soil.
   5. Other structures and covers including but not limited to cleanouts, wiring hand holes, valve boxes, access structures, grease trap structures, etc shall be protected as follows:
      a. Provide Type E fencing for areas on soil.
      b. When paving operations are complete provide a construction barrel or cone near structures as necessary depending on required heavy construction traffic.

3.5. PROTECT PUBLIC RIGHT OF WAY

A. Except where specifically stated in other areas of the construction documents the following minimal protection requirements shall apply under this section.
   1. All public right-of-way (area from behind the sidewalk to the centerline of the street) shall remain open and accessible except during periods of active work. At such times the public right of way shall be properly closed and signed as referenced in City of Madison Standard Specification 107.9.
   2. Bus stops and bus stop structures shall remain accessible at all times.
   3. Traffic signage and traffic signals, traffic control boxes shall be protected with Type D fencing for areas on pavement or Type E fencing for areas on soil.
      a. Protection at traffic signage/signals shall not obstruct the viewing of the sign/signal for its intended purpose at any time.

B. When additional protection for traffic control is required, the use of barricades, guardrails, lane closures and other such procedures will be detailed within the construction documents.

C. When additional protection for overhead sidewalk cover is required the contract documents shall indicate the specific location and structural requirements of the protective structure.

3.6. PROTECT STORED MATERIALS

A. All contractors shall refer to Specification 01 60 00 Product Requirements for all storage and protection requirements of building materials and products delivered to the site.

3.7. PROTECT WORK - EXTERIOR

A. Provide all temporary services that may be required to protect the installed material from heat, cold, humidity, etc, while materials such as concrete, mortar, sealants, paints, etc, are drying and/or curing.

B. Open trenches, pits, and other such excavations shall be properly covered, lined, or shored as needed during periods of inclement weather to prevent the caving of soils onto existing work in progress. Refer to the appropriate specifications and/or regulatory requirements governing this type of work as necessary.

C. Provide adequate protection at all openings with heavy duty tarps, plastic sheathing, or wood framing and sheathing as needed to protect interior work in progress from inclement weather as needed.

D. Protect exterior finishes of all kinds with heavy duty tarps or plastic sheathing as needed while landscaping is being installed through full germination of seeded areas or installation of filter fabric and mulches to keep dust, dirt, and mud off of finished exterior surfaces.

E. Designate specific curb mounting points and provide wood blocking where small vehicles, skid loaders and other such equipment may need access to areas being landscaped.

F. Provide plywood turning pads for skid loaders to turn on to prevent tire marking on new pavement.

G. Do not permit the parking of vehicles with any kind of fluid leaks to park on new pavement.

H. The contractor shall be responsible for cleaning, repairing, or replacing any completed work or work in progress under this specification as deemed necessary by the CPM without additional cost to the contract.

3.8. PROTECT WORK - INTERIOR

A. The GC shall do all of the following:

1. Provide all temporary services that may be required to protect the installed material from heat, cold, humidity, etc, while materials such as concrete, mortar, sealants, paints, etc, are drying and/or curing.
2. Provide adequate visual and/or physical protection as needed to protect newly completed interior work such as paint, flooring material, sealants, grouts, etc that may be drying and/or curing.
3. Provide adequate space and materials for cleaning boots, tool boxes, supplies, and other items coming into the project site once finish work has begun.
4. Clean dirtied areas and repair/replace damaged areas immediately.

B. The contractors responsible for interior work shall be responsible for protecting their work and finishes from dirt, mud, snow, spills, splatters, and physical damage after installation as follows:

1. Protect vinyl composite, rubber composite, painted/stained concrete, and tiled flooring as follows:
   a. Define foot traffic areas and protect with Ramboard Temporary Floor Protection products as a minimum basis of design or other protection product(s) compatible with installed flooring product if Ramboard is not compatible. Products to be used shall be new.
      i. Tape all edges, seams, etc with a good quality tape that does not leave sticky residue. Do not allow any debris or other material between the installed flooring and the protection material.
      ii. Repair tears immediately, replace worn areas with like material as necessary.
2. Protect carpeted areas as follows:
   a. Define foot traffic areas and protect with a minimum of 6mil, clear, polyethylene sheeting 3 feet wide. Products to be used shall be new.
      i. Tape all edges, seams, etc with a good quality tape that does not leave sticky residue. Do not allow any debris or other material between the installed flooring and the protection material.
      ii. Repair tears immediately, replace worn areas with like materials as necessary.
3. Protect all finished walls in high traffic areas with Ramboard Temporary Wall protection products or approved equal.
      i. Tape all edges, seams, etc with a good quality tape that does not leave sticky residue. Do not allow any debris or other material between the installed flooring and the protection material.
      ii. Repair tears immediately, replace worn areas with like materials as necessary.
3. Protect counter tops, cabinets, and other finished surfaces with large sheets of thick cardboard or Ramboard products. Do not allow toolboxes, finish materials, parts and other such items to be placed on finished materials.

C. All protection shall stay in place until the CPM, PE, and GC mutually deem the project is ready for Final Cleaning. The contractors responsible for protecting the work shall be responsible for removing the protection and removing any adhesive residue at that time. Contractors shall only use manufacturer authorized cleaning materials for removing adhesives, etc.

D. Contractors doing work in un-protected areas of finished work shall be required to provide drop cloths and other protection as noted within this specification for the duration of their work.

1. Finished areas shall be sufficiently covered to accommodate all equipment, and materials being used to complete the work being done.
2. Finished areas shall be sufficiently covered to prevent splatters, over spray, etc when doing touch-up work.
3. Contractors who do not provide sufficient protection under this sub-section shall be responsible for any costs associated with cleaning, repairing or replacing already finished construction at no additional cost to the contract.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.1. SUMMARY

A. The purpose of this specification is to clearly define and quantify the requirements associated with closing a City of Madison Public Works Contract for facility related work.

B. All contracts have two distinct but related paths. Each path needs to be properly closed independently in order to close the contract as a whole.

1. Construction closeout is related to closing out all of the Work associated with the construction documents.
   a. It shall be the responsibility of all contractors to be fully aware of the required Work and closeout requirements involved in their individual trades.
2. Contract closeout is related to closing out all of the administrative aspects of the contract in general.
   a. It shall be the responsibility of all contractors to be fully aware of the administrative requirements required by the contract and to provide the supporting documentation required.
3. Construction Closeout must be completed before Contract Closeout can begin.

C. This specification will provide general knowledge associated with the following areas:

1. Construction Closeout Requirements
2. Construction Closeout Procedure
3. Contract Closeout Requirements
4. Contract Closeout Procedure
5. Final Payment and Certificate of Completion

1.2. RELATED SPECIFICATIONS

A. Contractors shall review all references to other specifications including specifications relating to the execution of the Work associated with their Division or Trade.

B. Section 01 29 76 Progress Payment Procedures
C. Section 01 32 16 Construction Progress Schedules
D. Section 01 74 13 Progress Cleaning
E. Section 01 45 16 Construction Waste Management and Disposal
F. Section 01 76 00 Protecting Installed Construction
G. Section 01 78 23 Operation and Maintenance Data
H. Section 01 78 36 Warranties
I. Section 01 78 39 As-Built Drawings
J. Section 01 79 00 Demonstration and Training
K. Other requirements as noted in the contract documents signed by the General Contractor

1.3. DEFINITIONS

A. ***Substantial Compliance***: A letter provided to the City of Madison Building Inspection and signed by the Project Engineer indicating that all Work has been completed to a level that would allow Owner Occupancy and that all construction is in compliance with the construction documents. A copy of this letter is also provided to the

State of Wisconsin Department of Health and Safety as necessary to clear plan review requirements. This letter does not represent construction closeout.

B. ***Certificate of Occupancy***: The Regulatory letter from the City of Madison Building Inspection Department indicating that all regulatory requirements and inspections have been completed and the building may now be occupied for its intended use. This letter does not represent construction closeout.

C. ***Certificate of Substantial Completion***: A letter provided by the Department of Public Works, signed by the City Engineer indicating that Construction activities are substantially complete. This letter does represent construction closeout and the date of this letter begins the date of the Warranty Period.

D. ***Construction Closeout***: The point in the contract where all contractual requirements associated the execution of the Work as described in the plans, specifications, and other documents have been successfully met and the items described in 1.3.A, .B, and .C above have been completed.

E. ***Final Progress Payment***: The progress payment associated with achieving Construction closeout as described in 1.3.D above. At this point the contractor may request all monies associated with the contract be paid with the exception of held retainage.

F. ***Contract Closeout***: The point in the contract where all contractual requirements associated with the City of Madison, Board of Public Works contract has been successfully met.

G. ***Final Payment***: The final contract payment submittal that may be approved by the City of Madison after all contractual requirements of the Public Works Contract have been met and any remaining monies (retainage) due to the contractor may be released for the Final Payment.

1.4. QUALITY ASSURANCE – CONSTRUCTION CLOSEOUT

A. All contractors shall be responsible for properly executing the construction closeout requirements associated with their Work as described in the specifications governing their Work.

B. The GC shall be responsible for all of the following:

1. Ensuring that all contractors have met the construction closeout requirements associated with their Work.
2. Coordinate the collection of all construction closeout deliverables from all contractors, provide the deliverables to the Project Engineer and City Project Manager for review as necessary, and ensure all contractors correct deficiencies of deliverables and resubmit as needed for final acceptance.
3. Ensure all closeout requirements identified in the Construction Closeout Checklist below have been completed as intended by the construction documents.

1.5. QUALITY ASSURANCE – CONTRACT CLOSEOUT

A. The City of Madison, Department of Civil Rights (DCR) monitors contract compliance for construction and procurement contracts to ensure that local, state and federal regulations are followed by contractors working on City of Madison Public Works (PW) projects. DCR will monitor all PW projects from contract award through the final payment at the close of the project. Contractors will be required to submit reporting paperwork throughout the PW project process.

1. Contractors are encouraged to visit the web site identified below for additional information, checklists, forms, and other information provided by DCR as it relates to Contract Compliance.
   http://www.cityofmadison.com/Business/PW/contractCompliance.cfm
2. Questions regarding the process should be directed to parties and offices as identified on the various forms, documents, and instructions or contact:
   City of Madison, Department of Civil Rights
   210 Martin Luther King Jr. Blvd., Room 523
   Madison, WI 53703
   (608) 266-4910

B. All Sub-Contractors have submitted the applicable required documents described in item 1.5.D below to the General Contractor (GC) for Contract Closeout.

C. The GC has submitted the required applicable documents described in item 1.5.D below for all contractors to the appropriate City of Madison Agency per instructions associated with each submittal.

D. The documents required for submittal to the City of Madison for Contract Closeout may include any/all of the items listed below depending on contract type. It is the sole responsibility of all contractors to know and submit the required and complete documentation in a timely fashion.

1. Weekly Payroll Reports
2. Employee Utilization Reports
3. Agent or Subcontractor Affidavit of Compliance with Prevailing Wage Rate Determination
4. Prime Contractor Affidavit of Compliance with Prevailing Wage Rate Determination

5. Documentation required for Small Business Enterprise (SBE) goals
6. Other documents as maybe required or requested through the Finalization Review Process

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.1. CONSTRUCTION CLOSEOUT CHECKLIST

A. All contractors shall be responsible for reviewing the drawings and specifications within their Divisions of Work to provide a complete and comprehensive list of all Construction Closeout Requirements to the GC.
   1. The checklist shall include all items identified within the construction documents that require any of the following (and examples) prior to moving into Contract Closeout Procedures:
      a. Documents indicating a specified level of performance has been achieved, such as:
         i. Test reports of all types
         ii. Startup reports
      b. Required documentation, such as:
         i. As-builts and record drawings
         ii. Operation and maintenance data
      c. Physical items to be turned over to the owner, such as:
         i. Attic stock
         ii. Keys
      d. Required maintenance completed, such as:
         i. Ducts cleaned
         ii. Filters replaced
      e. Owner and Maintenance Training

B. Each list shall indicate the title of the closeout requirement, the associated specification of the requirement, the required result or deliverable, the responsible contractor(s), and a column to verify the item has been turned in and completed.

C. The GC shall be responsible for all of the following:
   1. Consolidating all the closeout lists into one master Construction Closeout Checklist.
      a. The checklist shall be in a tabular data format similar to the sample below
   2. Resubmit the checklist as needed after initial reviews have been completed.

D. The GC shall work with all contractors to amend the Construction Closeout Checklist throughout the execution of the project based on changes and modifications as necessary.

Title	Specification	Description	Responsibility	Completed
Quality Management Observation Reports	01 45 16	All QMO reports have been properly responded to, reviewed and closed by the CPM.	All, GC	
As-Built Drawings	01 78 39	As-Built drawings have been reviewed and accepted per the specification	All, GC	
Testing and Balancing	23 09 23	Provide final TAB reports indicating design performance has been achieved	HVAC	

3.2. CONSTRUCTION CLOSEOUT REQUIREMENTS

A. The timely submittal or completion of closeout requirements shall go hand in hand with the Progress Payment Milestone Schedule that can be found in Specification 01 29 76 Progress Payments. No payments shall be made until all requirements for that payment have been met.
   1. The GC and all major Subcontractors, PE, and CPM, shall review all requirements for Construction/Contract Closeout during two (2) special meetings.
      a. The first meeting shall be held at the 50% Contract Total Payment milestone. This meeting shall discuss the requirements associated with various construction/contract closeout documentation and events when they are due with respect to progress payments.
      b. The second meeting shall be held at the 70% Contract Total Payment milestone. This meeting shall review the contractors progress regarding the closeout checklist, begin making plans for upcoming deadlines such as scheduling training, where to put attic stock, and when they are due with respect to progress payments.

2. The GC, PE, and CPM, shall utilize the Construction Closeout checklist to ensure that all construction closeout requirements have been met.

3.3. CONSTRUCTION CLOSEOUT PROCEDURE

A. Upon successful completion and final acceptance of all Construction Closeout Requirements the GC may submit to the CPM and PE the request for Final Progress Payment (100% contract total, less retainage).

B. The PE will confirm with the design consultants, CPM, and other City of Madison staff that all requirements of the Work have been completed and will do the following:
   1. Approve the final progress payment application
   2. Provide the required signed payment documents to the CPM
   3. Provide the required Letter of Substantial Compliance to the following as required:
      a. State Safety and Building Division
      b. Local Building Inspection office
      c. GC
      d. CPM

C. The CPM shall draft the City Letter of Substantial Completion for signature by the City Engineer. This letter shall state any of the following that may still be tied to the contract and/or warranty:
   1. Indicate that the date of the letter shall also be the beginning of the Warranty period.
   2. Indicate any allowed due outs, reasons for them, and anticipated dates of finalization.

D. The GC and all subcontractors shall finalize all warranty letters associated with their Work using the date noted on the City Letter of Substantial Completion, and provide the CPM with all warranties as described in Specification 01 78 36 Warranties. Upon receipt and final approval of the Warranties the CPM may initiate final processing of the Final Progress Payment (100% contract total, less retainage).

3.4. CONTRACT CLOSEOUT REQUIREMENTS

A. The GC and all sub-contractors shall follow all requirements associated with documenting contract compliance and provide documentation as required or requested by DCR or PW staff. All contractors are encouraged to stay current with submissions of the following documentation:
   1. Weekly Payroll Reports no later than the Progress Payment equal to 50% of the contract total.
   2. Employee Utilization Reports
   3. Agent or Subcontractor Affidavit of Compliance with Prevailing Wage Rate Determination
   4. Prime Contractor Affidavit of Compliance with Prevailing Wage Rate Determination
   5. Documentation required for Small Business Enterprise (SBE) goals
   6. Other documents as maybe required or requested through the Finalization Review Process

B. Near the Progress Payment equal to 80% of the contract total the GC shall request in writing a Finalization Review. At that time DCR or PW staff shall prepare a report of all contract documentation submitted to date. A list of missing items or outstanding issues will be emailed to the GC. No additional follow-up will be generated by DCR or PW Staff.

3.5. CONTRACT CLOSEOUT PROCEDURE

A. The Contract Closeout Procedure will not begin until the Construction Closeout Procedure has been completed.

B. When the GC feels he/she has successfully met all of the Contract Closeout Requirements associated with Section 3.3 above the GC may submit to the request for Final Payment to the CPM.

C. The CPM shall sign and submit the Final Payment request for processing.

D. DCR and PW staff shall do a complete review of all documentation associated with item 3.3.A above.

E. The GC shall be notified directly by DCR or PW Staff of any documentation that may still be missing, have incomplete information, or other outstanding issues. It shall be the responsibility of the GC to continue follow-up with DCR and PW staff until all documentation has been successfully submitted and accepted.

F. When all required documentation associated with Contract Closeout has been successfully submitted and accepted by DCR and PW Staff the City of Madison shall process the Final Payment of any remaining monies including retainage.

END OF SECTION

SECTION 01 78 36
WARRANTIES

PART 1 – GENERAL

1.1. SUMMARY

A. The purpose of this specification is to provide clear responsibilities and guide lines related to providing all Warranties and Guarantees related to the Work, workmanship, materials, equipment, and other such items required by the Construction Documents.

B. Manufacturers' disclaimers and limitations on product warranties do not relieve any contractor of the warranty on the Work that includes the product.

C. Manufacturers' disclaimers and limitations on product warranties do not relieve suppliers, manufacturers and any contractor required to provide special warranties under the contract documents.

1.2. RELATED SPECIFICATIONS

A. Section 01 29 76 Progress Payment Procedures

B. Section 01 77 00 Closeout Procedures

C. Section 01 78 23 Operation and Maintenance Data

D. Other Divisions and Specifications that may address more specifically the requirements for Warranties related to the installation of all items and equipment installed under the execution of the Work.

1.3. DEFINITIONS

A. See specification 01 77 00 for the definitions of the following terms that may also be used in this specification:

1. Substantial Compliance
2. Certificate of Occupancy
3. Certificate of Substantial Completion
4. Construction Closeout
5. Contract Closeout

B. Emergency Repair: The Owner or Owner Representative reserves the right to make emergency repairs as required to keep equipment or materials in operation or to prevent damage to property and injury to persons without voiding the contractors warranty or bond or relieving the contractor of his/her responsibilities during the warranty period.

C. Installer: The company or contractor hired to install a finished product that was manufactured and supplied specifically for the Work within this contract. The Installer may or may not be the same company that supplied the product. See the definition for supplier.

D. Supplier: Any company that makes a specific finished product for the Work from information within the Contract Documents. Examples of suppliers would include custom cabinets, steel stairs and railings, etc. A supplier would not be a company that distributes items manufactured by others such as an electrical or plumbing supplier.

E. Warranty: A written guarantee from the manufacturer to the owner on the integrity of a product and its installation, and the manufacturers' responsibility to repair or replace the defective product or components within a specified time from the date of ownership. Warranty may also be used interchangeably with Guarantee. The following warranty types may be part of any specification within the Work associated with the Construction Documents:

1. Expressed Warranty: A warranty that provides specific repair or replacement for covered components of a product over a specified length of time.

2. Implied Warranty: A warranty that is not stated explicitly by a seller or manufacturer that the product is merchantable and fit for the intended purpose.
3. Standard Product Warranty: Preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner. Standard warranties may be for any amount of time but shall not be for anything less than one (1) year from the warranty date.
4. Special Warranty: A written warranty required by the Contract Documents either to extend the time limit provided under a standard warranty or to provide greater rights to the Owner.

F. Warranty Date: The effective date that begins all warranty periods required for products, installations, and work-manship associated with the execution of the Work for this contract. The Warranty Date shall be set by the CPM.

G. Related Damages and Losses: When correcting failed or damaged Warranted Work, remove and reinstall (or replace if necessary) the construction that has been damaged as a result of the failure or the construction that must be removed and replaced to obtain access for the correction of Warranted Work.

H. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected reinstate the warranty by a new written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation unless specifically noted otherwise in a specification.

I. Replacement Cost: All costs that may be associated with Work being replaced under warranty including but not limited to the following:
1. Related damages and losses
2. Labor, material and equipment
3. Permits and inspection fees
4. This shall be regardless of any benefit the Owner may have had from the Work through any portion of its anticipated useful service life.

J. Replacement Work: All materials, products, required labor, and equipment necessary to replace failed or damaged warranted to an acceptable condition that complies with the requirements of the original Construction Documents.

K. Owners Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, and remedies.
1. Rejection of Warranties: The Owner reserves the right to reject any warranty and to limit the selection of products with warranties not in conflict with the requirements of the contract documents.
2. Where the Contract Documents require a Special Warranty or similar commitment on the Work or product, the Owner reserves the right to refuse acceptance of the Work until the Contractor presents evidence the entities required to countersign such required commitments have done so.

1.4. GENERAL CONTRACTORS RESPONSIBILITIES

A. The General Contractor (GC) shall be responsible to remedy, at his/her expense, any defect in the Work and any damage to City owned or controlled real or personal property when the damage is a result of:
1. The GC's failure to conform to Contract Document requirements.
   a. Any substitutions not properly approved and authorized may be considered defective.
2. Any defect in workmanship, materials, equipment, or design furnished by the GC or Sub-contractors.

B. All warranties as described in this specification and these Contract Documents shall take effect on the date established by the CPM, as noted in Section 1.3F above.
1. All warranties shall remain in effect for one (1) year thereafter unless specifically stated otherwise in the Contract Documents or where standard manufacturer warranties are greater.

C. The GC's warranty with respect to Work repaired or replaced, including restored or replaced Work due to damage, will run for one (1) year from the date of Owner Acceptance of said repair or replacement.
1. This shall be regardless of any benefit the Owner may have had from the Work through any portion of its anticipated useful service life.

D. Warranty Response
1. See Section 3.5 of this specification.

PART 2 – PRODUCTS - THIS SECTION NOT USED

PART 3 - EXECUTION

3.1. WARRANTY CHECKLIST

A. All contractors shall be responsible for reviewing the drawings and specifications within their Divisions of Work to provide a complete and comprehensive list of all Warranty Requirements to the GC.

B. Each list shall indicate the title (and plan identifier when applicable) of the warranted item, the associated specification of the warranted item, the terms of the warranty (years), and a column to verify the item has been turned in and completed.

C. The GC shall be responsible for all of the following:

1. Consolidating all the warranty lists into one master Warranty Checklist and submitting electronically.
    a. The checklist shall be in a tabular data format similar to the sample below.
2. Resubmit the schedule as needed after initial reviews have been completed.

D. The GC shall work with all contractors to amend the Warranty Checklist throughout the execution of the project based on changes and modifications as necessary.

Title	Specification	Terms	Completed
Overhead Door Operator	08 36 00	MFR 2yr	
Exterior Bench and Trash Receptacles	12 93 00	MFR 3 year warranty on finish	
Kitchen Sink (SK-1)	22 42 00	MFR 5 year	
Disposal (D-1)	22 42 00	MFR 7 year parts and in-home service	
Toilet (WC-1)	22 42 00	MFR 1 year limited	

3.2. LETTERS OF WARRANTY

A. All letters of warranty shall be in a typed letter format and provide the following information:

1. The letter shall be on official company stationary including company name, address, and phone number.
2. Indicate project name, contract number, and contract address the warranty is for on the reference line.
3. Provide a description of the warranty(ies) being provided.
    a. Include Division, Trade, or Specification information as necessary.
    b. Only combine warranties of related Divisional Work together. Create new letters for additional Divisions as necessary.
4. Indicate the effective Warranty Date. As noted in Section1.3.F above, the Warranty Date shall be the date the Certificate of Substantial Completion was signed by the City Engineer.
5. Contractor Letters of Warranty shall only be signed by a principal officer of the company.
6. After signing the letter provide the GC with a high quality color scanned image in PDF format and the original signed letter.

B. The GC shall be responsible for the Final Warranty submittal as identified in Section 3.4 below.

C. The GC shall obtain letters of warranty from all of the following:

1. The General Contractor shall provide warranty letters for all Work that was self performed under the contract documents, identify all trades or Divisions of Work.
2. All Sub-contractors shall provide warranty letters for Work performed under the contract documents; identify all trades or Divisions of Work.
3. Suppliers, as required by other specifications within the Construction Documents where the manufacture of a specific product unique to the Work of this contract was required.
    a. The terms and conditions of the Supplier Letter of Warranty shall be as defined by the specifications associated with the Work but shall not be less than the industry standard of repair, or replace defective materials and workmanship within one (1) year of the warranty date.
    b. When the supplier is also the installer a single written letter may be submitted identifying both the warranty for the manufacture of the product and the warranty for the installation of the product.
4. Installers as required by other specifications within the Construction Documents where the installation of a specific product unique to the Work of this contract was required.
    1. The terms and conditions of the Installer Letter of Warranty shall be as defined by the specifications associated with the Work but shall not be less than the industry standard of repair, or replace defective materials and workmanship associated with the installation of the product within one (1) year of the warranty date.
5. Special Letters of Warranty shall be required from any contractor, supplier, installer or manufacturer who agrees to provide warranty services required by any Division Specification in excess of their Standard Product Warranty.

3.3. STANDARD PRODUCT WARRANTY

A. All contractors shall be responsible for collecting and providing copies of all standard product warranties for commercially available products purchased and installed under this contract.

B. Only one copy of the manufacturers' standard warranty needs to be submitted as representative for all quantities of the same model number used throughout the Work.

C. Provide the manufacturers certificate, letter, or other standard documentation for each Standard Product Warranty submitted as follows:

1. Whenever possible a PDF version of the document shall be used.
    a. If a PDF version is used all additional information shall be completed using simple PDF editing tools such as text boxes, highlight, etc.
    b. If a PDF version is not available and an original document is furnished the additional information shall be neatly hand written and highlighted on the document in such a fashion so that it does not obscure any part of the written warranty.
2. Provide the following additional information on each warranty document:
    a. Contract warranty date.
    b. Provide the manufacturer name and model number of the product if not specified within the warranty.
        i. Where the manufacturer name and model number is specified within the warranty it shall be highlighted for visibility.
    c. Provide the plan identifier (LAV-1, WC-2, etc) when applicable.

D. Each completed warranty shall be saved as a digital PDF. The file shall be named using the specification number and item description. I.E. 22 42 00 Toilet (WC-1).pdf
    a. Where an original certificate was furnished provide a high quality colored scan of the completed document with the additional information. Save the scanned image in PDF format and use the same naming convention as indicated above.

E. Provide all PDF files and any original documents to the GC for final consolidation to be provided to the Owner.

3.4. FINAL WARRANTY SUBMITTAL

A. The GC shall receive all required warranties (digital PDF and any original documents) from all contractors, suppliers, installers and manufacturers.

B. The GC shall inventory all received warranties with the Warranty Submittal List to ensure all required warranties have been received and all warranty periods are correct according to the specifications.

C. Provide with each Operation and Maintenance Manual a complete copy of any associated warranty.

D. Scan all warranties into a single organized electronic PDF file as follows:
1. Organize the PDF file into an orderly sequence based on the table of contents of the Specifications.
2. Provide a typed Table of Contents for the entire file at the front of the document.
3. Provide bookmarks and links to each individual PDF to enable quick navigation through the PDF document.

E. Submit electronically, the warranty submittal for review by the PE and CPM.

F. Correct any deficiencies or omissions and resubmit as necessary.

3.5. WARRANTY NOTIFICATION, RESPONSE, EXECUTION AND FOLLOW-UP

A. Warranty Notification:
1. The City of Madison uses an email notification system for all warranty related issues. The GC will be required to provide, and keep current during the warranty period, a minimum of two (2) email addresses and phone numbers of current employees to receive email notifications and provide response regarding Work associated with these construction documents.
    a. In the event a Warranty Issue is deemed by the City of Madison to be an emergency, the GC shall first receive a phone call with a follow-up email from the CPM.

B. Warranty Response:
1. The GC shall upon notification by the City of Madison provide warranty response as follows:
    a. Critical Systems or equipment: Where damage to equipment and other building components, or injury to personnel is probable provide immediate emergency shut-down information and an on-site response team as soon as possible but in no case shall on-site response exceed 24 hours.
    b. For non-critical responses where damage or injury is unlikely provide on-site response no later than the next business day.

c. Where Technical Assistance support is part of the written warranty provide all assistance necessary via phone, text, or internet systems as indicated by the warranty. If issues cannot be resolved provide on-site response no later than the next business day.

d. If the request cannot be supported in sufficient time as outlined above the Owner (or Owner Representative) reserves the right to contact other contractors or service companies having similar capability to expedite the repair or replacement and shall invoice all associated costs to the Owner back to the GC.

C. Warranty Execution:

1. The GC shall provide all repairs or replacements as necessary to restore broken or damaged Work to the original level of acceptance as intended by the Contract Documents.
   a. Provide all materials, equipment, products, and labor necessary to complete the repair or replacement associated with the Warranty Issue.
   b. Provide all cleaning services as may be required before, during, and after the repair or replacement as per Specification 01 74 13 Progress Cleaning.
   c. Provide any protection necessary for existing construction as per Specification 01 76 00 Protecting Installed Construction
   d. Provide new letters of warranty when required.

D. Warranty Follow-up:

1. Logged Warranty Issues:
   a. The GC shall provide complete documented responses of all logged Warranty Issues. Responses shall provide a description of work completed, by who, inclusive dates, and photos of completed or repaired work.
      i. Provide call back response if work is not acceptable.
   b. The City Project Manager shall review the submitted response documentation and do a field inspection if necessary.
      i. If work is not acceptable, contact GC to review details and expectations of the repair as needed.
      ii. If work is acceptable close the Warranty Issue.
2. Warranty Reviews:
   a. The GC shall be responsible for scheduling on-site review with all of the following:
      i. City Project Manager, and other City staff as needed
      ii. Owner and Owner Tenant Representative
      iii. Plumbing, Heating, Electrical Sub-contractors
      iv. Other Sub-contractors that may be responsible for open Warranty issues
   b. Reviews shall be scheduled at 6 months, and 11 months after the effective date of the warranty. The review meetings shall:
      i. Review the status of all open Warranty Issues, determine course of action and estimated date of completion.
      ii. As appropriate, provide shut-down, start-up, testing, and training of off-season equipment as required by the contract documents.
      iii. The 11th month review shall review all open Warranty Issues, final plan for resolution, and all Warranty Issues where a new letter of warranty may have been issued.

END OF SECTION

SECTION 13 34 18
POST FRAME BUILDING SYSTEMS

PART 1 – GENERAL

1.1. SUMMARY

A. This Section Includes
1. Factory fabricated engineered wall column
2. Factory fabricated engineered roof truss.
3. Factory fabricated engineered siding panels and metal roofing.
4. Prefinished metal trim items.
5. Prefinished ridge vents and soffits.

1.2. REFERENCE STANDARDS

A. Preservative Treated Lumber
1. American Wood Preserves Association (AWPA)
a. Treated item shall comply with AWPA standard UC3B minimum.
b. Treated items shall bear the quality markwith appropriate specification information, along with and stamped by the participating mill or agency involved.

B. Framing Lumber
1. Lumber grading rules and wood species
a. National Design Specifications for Wood Construction, current edition.
b. Northeastern Lumber Manufacturer's Association, Inc. (NELMA).
c. Southern Pine Inspection Bureau (SPIB): Southern Pine.
d. West Coast Lumber Inspection Bureau (WCLIB): Douglas Fir.
e. Western Wood Products Association (WWPA): Douglas Fir and Ponderosa Pine.

C. Wood Trusses
1. All lumber used in the design of wood trusses must be kiln dried and graded in accordance with current grading rules. Design stresses allowed are those listed in the current editions of the respective Lumber Association’s grading rules and National Design Specifications (NDS supplement) for wood construction.
2. The design of wood members must be in accordance with the formulas published in the current edition of the National Design Specifications for Wood Construction.

3. Light metal toothed connector plates and joint design must conform to specifications as set by the current edition of Truss Plate Institute's (TPI) National Design Standard for Metal Plate Connected Wood Truss Construction.
    a. Connector plates shall be fabricated from ASTM A 653 SS, 20 gauge Grade 40, or 18 gauge, Grade 80, steel sheets galvanized with G-60 coating.
4. Truss members and joints must be designed in accordance with the current edition of TPI. All truss designs must be accompanied by complete and accurate shop drawings and contain the following information :
    a. Slope or depth, span and spacing of the truss.
    b. Heel bearing height.
    c. Design loading to include:
        i. Top chord live load
        ii. Top chord dead load
        iii. Bottom chord dead load
        iv. Concentrated loads and their points
    d. Adjustments to lumber and plate design values for conditions of use.
    e. Plate type, thickness of gauge, and size.
    f. Lumber size, species and grade for each member.

1.3. SYSTEM DESCRIPTION

A. Clear span frame - coordinate with drawings.
B. Primary framing -wood roof trusses and columns.
C. Secondary framing - purlins, girts, bracing and other items as required.
D. Wall and roof systems - preformed metal panels.

1.4. DESIGN REQUIREMENTS

A. Coordinate building loads. Refer to design load tables on plans.
B. Building Code: 2015 International Building Code (IBC), including unbalanced roof loads required by the most current version of ASCE 7-10.

1.5. SUBMITTALS

A. Submit under requirements of Section 01 33 23 - Submittals.
B. Supply four (4) sets of the following bearing a Professional Engineering Seal registered in the State of Wisconsin
    1. Complete detailed shop and erection drawings indicating size and location of each building component and part. Certify that specified roof and wind load requirements are met.
    2. Truss engineering calculations and design calculation should include the following:
        a. Bending moments and axial forces for each member.
        b. Basic plate design values.
        c. Design analysis for each joint indicating that proper plates have been used.
        d. Successful bidder shall provide written proof of a third party inspection program in force for the truss manufacturer used on project.
    3. Standard color chart supplied by Manufacturer for the owner/architect to choose from.
    4. Brochures/details/samples of specialty accessory products used or specified on this project.

1.6. QUALITY ASSURANCE

A. Building package by a pre-engineered building Manufacturer with 10 years of doing business.
B. Building package shall be supplied by a pre-engineered building Manufacturer. All structural components shall be supplied by a source with one warranty.
C. Exterior fastened steel panels, Columns, and Trusses shall be fabricated by Manufacturer. They shall not be manufactured or assembled on-site.
D. Design of structural components shall be performed under the direct supervision of a Profession Engineer with at least 10 years' experience in design of this type of structure and licensed in the State of Wisconsin.
E. Package (shell) erection shall be supervised by Manufacturer's representative builder or Manufacturer employed field superintendent.

1.7. QUALIFICATIONS

A. Structural components shall be designed under direct supervision of a Professional Engineer employed by the Manufacturer.

B. An adequate number of skilled work people shall be employed who are thoroughly trained and experienced in the necessary skills. They will be completely familiar with the specified requirements and methods for proper performance of work.

1.8. REGULATORY REQUIREMENTS

A. All applicable building codes and/or ordinances covering this work shall be the responsibility of the contractor.

B. Work together with regulatory agencies or authorities to provide data as requested.

1.9. ENVIRONMENTAL REQUIREMENTS

A. Material packaging for minimum natural resource waste on project.

1.10. DELIVERY, STORAGE AND HANDLING

A. Prefabricated components, i.e., trusses, columns, steel sheathing and other items, shall be delivered and stored so they will not be damaged or deformed.

B. Roofing and siding panels will be stored so water will drain freely.

C. Panels shall not be stored such that they are in contact with any other material that could create staining or discoloration.

1.11. WARRANTY

A. Contractor to warrant to the original owner , commencing on the date of its substantial completion and subject to limitations, exclusions and conditions set forth herein, as follows:

1. For fifty (50) years
   a. Free of Charge, Contractor will replace or repair, at its option, treated structural posts that fail because of insect damage or because of decay that occurs under normal conditions and proper use.
2. For forty (40) years
   a. Free of Charge, Contractor will replace or refinish, at its option, painted steel roofing or siding panels if the paint peels, cracks, checks, flakes, or blisters to an extent that is apparent by ordinary outdoor visual observation when exposed to normal weather and atmospheric conditions. Damage or loss resulting from exposure to atmospheric pollutants, including but not limited to animal waste or other corrosive conditions, is excluded under this warranty.
3. For thirty (30) years
   a. Free of Charge, Contractor will replace or refinish, at its option, painted steel roofing or siding panels should the color change or chalk more than the specifications shown in the following table:

	Vertical Installation	Non-Vertical Installation
Chalk (ASTM D-4214)	8	6
Color Change (ASTM D-2244)	5	7

1. For twenty (20) years
   a. Free of Charge, Contractor will replace or repair, at its option, acrylic coated Galvalume® steel roofing or siding panels should they rupture, perforate, or fail structurally when exposed to normal weather and atmospheric conditions. Damage or loss resulting from exposure to atmospheric pollutants, including but not limited to animal waste or other corrosive conditions, is excluded under this warranty.
2. For seven (7) years
   a. Free of Charge, Contractor will repair leaks in steel roofing panels that result from defects in material or workmanship except those leaks occurring where the building is connected to an adjacent structure.
3. For five (5) years
   a. Free of Charge, Contractor will replace or repair, at its option, those portions of the structural framework, including roofing and siding panels, damaged by wind or snow loads that do not exceed design specifications.
   b. Free of Charge, Contractor will replace or repair, at its option , sliding doors damaged by wind or snow so long as the door is in a locked-open or locked-closed position when the damage occurs .

c. Free of Charge, Contractor will replace or repair, at its option, painted steel or acrylic coated Galvalume® steel roofing or siding panels perforated by hail.

4. For one (1) year
   a. Free of Charge, Contractor will repair any other defects in materials or workmanship.

PART 2 – PRODUCTS

2.1. BUILDING SYSTEM MANUFACTURERS

A. Approved Manufacturers. Subject to compliance with specifications, manufacturers that may be incorporated into the work include:
   1. Wick Buildings
   2. Morton Buildings
   3. Lester Buildings

B. If alternative Manufacturer is proposed bid is to document how proposed manufacturer meet specifications and follow substitution request procedure per 00 43 25.

2.2. MATERIALS - FRAMING

A. Columns
   1. Full Length Laminated Column
      a. Factory fabricated from minimum 3 ply 2" x 6" M-23 or 2400 MSR Southern Yellow Pine (SYP). Columns shall be full-length (un-spliced) nail laminated plys up through 20' with middle ply to have short truss support block. Columns over 20' length shall be spliced (a minimum of 3' length) with reinforced metal truss plates pressed in place over splice on the outside laminate. Refer to page 2 in this section 1.03 Reference Standards/ C. Wood Trusses/ letter a. referencing connector plates.
      b. The area in contact with the ground shall be pressure treated. This is in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition, with a wood preservative to a net retention of 60 pounds per cubic foot of CCA Type - C formulation.
   2. Perma Column
      a. Factory fabricated from minimum 3 ply 2" x 6" M-23 or 2400 MSR Southern Yellow Pine (SYP). Columns shall be full-length (unspliced) nail laminated plys up through 20' with middle ply to have short truss support block.
      b. Columns over 20' length shall be spliced (a minimum of 3' length) with reinforced metal truss plates pressed in place over splice on the outside laminate.
      c. The area in contact with the ground shall be "Perma-Column" or equal, with 10,000 psi Reinforced Pre-Cast Concrete with Polymer fiber reinforcement and premium grade continuous steel reinforcement welded or structural reinforcing "U" bracket attached to laminated wood column 3 ply (or as required) with 1h Thru-Bolts. Uplift Anchors Galvanized. Shop fabricated by building system manufacturer and delivered to project site w/laminated column attached. Field Assembly not acceptable.

B. Wood Trusses
   1. Lumber
      a. Top chord: M-23 Machine Stress Rated (MSR) or better Southern Yellow Pine (SYP).
      b. Bottom chord: M-23 Machine Stress Rated (MSR) or better Southern Yellow Pine (SYP).
      c. Webs: 1650 Machine Stress Rated (MSR) or better Spruce Pine Fir (SPF).
   2. Trusses shall be constructed of surfaced lumber, smooth and free of all cracks and checks.
   3. Plates: Connector plates shall be fabricated from ASTM A 653 SS, 20 gauge Grade 40, or 18 gauge, Grade 80, steel sheets galvanized with G-60 Coating.
   4. Design and fabricate trusses and connections to withstand designated snow and wind loads and all dead loads.
   5. Fabricate trusses in plant, using mechanical or hydraulic fixtures as required to bring members into contact. Install plates in accordance with Manufacturer's instruction.
   6. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

C. Baseboards
   1. 2" x 8" #1 or better Southern Yellow Pine (SYP).
   2. This member shall be pressure treated with a wood preservative to a net retention as specified by the American Wood Preservers Association (AWPA) for ground contact conditions. Treatment shall be

Osmose MicroPro copper Azol (MCA) with .15 pounds of preservative per cubic foot of wood. Member shall be Kiln dried to a maximum of 19% moisture content. The preservative shall penetrate 100% of the sapwood.

a. This treated member shall be attached to columns with a minimum of 3 hot dipped galvanized nails (ASTM A153).

3. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

D. Wall Girts
1. 2" x 6" 1650 MSR Spruce Pine Fir (SPF) or M-23 or 2400 MSR Southern Yellow Pine (SYP) as required by design at appropriate spacing.
2. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

E. Purlins and Truss Ties
1. 2" x 4 " 1650 MSR or better Spruce Pine Fir (SPF) or M-23 or 2400 MSR Southern Yellow Pine (SYP) as required by design dependent upon roof loading specification.
2. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

F. Overhang Framing
1. Provide fabricated rafter frames.
2. Provide 2" x 6" 1650 MSR or better Spruce Pine Fir (SPF) factory beveled fascia boards.
3. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

G. Wind Bracing
1. Provide "T'd" 2" x 6" or 2" x4" 1650 MSR or better Spruce Pine Fir (SPF) from endwall column to first truss back.
2. Provide 2" x 4" 1650 MSR diagonal in roofline bracing as required by design.
3. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

H. Framing Around Openings
1. Provide 2" x 6" or 2" x 4" 1650 MSR or better Spruce Pine Fir (SPF) around personnel doors and windows.
2. Provide 2" x 6" or 2" x 4" 1650 MSR or better Spruce Pine Fir (SPF) around overhead door openings.
3. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

I. Headers
1. Provide built-up M-23 or 2400 MSR Southern Yellow Pine - Machine Stress Rated (MSR) or better Southern Yellow Pine (SYP) headers as required to meet proper loading.
2. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

J. Incidental framing
1. Provide 1650 MSR or Better 2” x 4” Spruce Pine Fir (SPF)
2. Shall be treated in accordance with the "American Wood Preserves Association" (AWPA) standards latest edition for exterior, above ground, exposed construction.

2.3. MATERIALS – PREFINISHED

A. Roof Panels - Exposed Fastened Steel Panels
1. All roofing panels shall be 29 gauge (.015 minimum thickness) steel with a G- 90 galvanized zinc coating. Panels shall be a minimum structural strength ASTM A Grade-80, 82,000 PSI tensile strength. All panels shall include a zinc phosphate pre-treatment, then covered with a total of .55-.65 mil thick paint system. Paint system shall consist of a corrosion-resistant prime coat and an architectural finish coat of Ceram-A-Star 1050.

a. All metal roof and sidewall panels shall be fastened with minimum of 1" color-matched EPDM washered #9 screw fasteners placed in the flat of the steel next to all major ribs along every row of girts and purlins. All fasteners shall be color-matched to wall and roof panels and trim.

B. Sidewall Siding - Exposed Fastened Steel Panels
1. All siding panels shall be 29 gauge (.015 minimum thickness) steel with a G-90 galvanized zinc coating. Panels shall be a minimum structural strength ASTM A446 grade E, 82,000 PSI tensile strength. All panels shall include a zinc phosphate pre-treatment, then covered with a total of 1.5 mil thick paint system.

Paint system shall consist of a corrosion-resistant prime coat and an architectural finish coat of Ceram-A-Star1050.

a. All metal roof and sidewall panels shall be fastened with minimum of 1" color-matched EPDM washered #9 screw fasteners placed in the flat of the steel next to all major ribs along every row of girts and purlins. All fasteners shall be color-matched to wall and roof panels and trim.

C. Metal Trim Items

1. Trim

a. Roofing and siding panels shall be trimmed using painted trim with the same paint product specifications as the roofing and siding panels. Standard trim to be placed at all corners, ridge line, rake (intersection of roof and endwall), eave (intersection of roof and sidewall) and base (bottom of sidewall and endwall steel.) All standard trims, overhang fascias, track covers, slide door jambs and trims to be available in building panel covers. Overhead door trims and slide door jamb trims shall be one piece up to 16'. All other trims shall be a minimum of 12' in length to eliminate splices.

2. Fasteners

a. All framing lumber shall be fastened with 10d, 16d and 60d ring shank nails. All machine bolts used shall be a minimum grade 1, A307. All metal roof and sidewall panels shall be fastened with minimum of 1" color- matched EPDM washered #9 screw fasteners placed in the flat of the steel next to all major ribs along every row of girts and purlins. All fasteners shall be color- matched to wall and roof panels and trim.

D. Soffits

1. Overhangs

a. Soffits shall be aluminum vented or non-vented as required. Colors shall closely match building panel colors.

E. Ridge Vent

1. Accessories

a. Provide Manufacturer's standard engineered ridge cap or ridge lite, flashings and eave and gable trim. Field-fabricate minor flashings as shown on erection drawings.

b. Provide Manufacturer's standard ridge vents as shown on drawings.

i. Flow Thru (Profile Vent) 12 sq. in/LF (net free area per foot length)

2.4. MATERIALS - OTHER

A. Closure Strips

1. Closed cell foam premolded to match configuration of panels.

B. Sealant

1. Silicone sealant shall be used.

PART 3 – EXECUTION

3.1. EXAMINATION

A. Verify that site conditions meet Manufacturer's requirements and design requirements for this region.

3.2. ERECTION - FRAMING - GENERAL

A. Erect framing in accordance with Manufacturer's established construction procedures.

B. Make all components and building plumb, square, straight and true to lines.

C. Provide adequate temporary bracing to assure structure remains plumb and square.

D. Altering of structural members will not be permitted.

3.3. ERECTION FRAMING

A. Columns

1. Auger hole to plan depth of the diameter shown on plans.
2. Pour ready mix concrete pad in the bottom of each hole per plans.
3. Install 2" x 4" hold down blocks at the bottom of each column.
4. Accurately position column in the hole.
5. Backfill with dry soil compacted in 8" lifts.

B. Baseboards

1. Install 2"x 8" treated plank, at grade, using Manufacturer recommended fasteners.

C. Wall Girts

1. Install 2"x 6" girts at centers called for on plan.
2. Install 2"x 6" overhang nailer, if required, at the top.

D. Trusses
1. Set trusses in place in center member of the column using lifting methods as approved by the Manufacturer.
2. When properly positioned install 1/2”x 5 1/2” machine bolts and Manufacturer recommended 16d ring shank nails through two of the column laminates and the truss heel.
3. Brace trusses as recommended by Manufacturer.

E. Purlins
1. Install 2" x 4" purlins at 24" on center and attach to trusses with 60d ring shank nails and 1Od toe nails.

F. Truss Ties
1. Install 2” x 4” truss ties at location recommended by Manufacturer.
2. Truss ties shall run from endwall to endwall.

G. Incidental Framing
1. Install 2" x 4" or 2" x 6" blocking as required according to building Manufacturers recommendations.

3.4. ERECTION - PREFINISHED METALS, GENERAL

A. In accordance with Manufacturer's established construction procedures, install prefinished metal parts.
B. All components made to be plumb, square, straight and true to lines.
C. Care shall be taken when cutting prefinished materials to ensure cuttings do not remain on finished surface.
D. Fasteners shall be properly installed. Do not under or overdrive.
E. Components shall be properly installed to assure freedom from rattles.

3.5. ERECTION - PREFINISHED METALS

A. Roofing Panels
1. Panels shall be installed perpendicular to supports aligned straight with end fascias.
2. Panels shall be fastened to purlins with 1-1/2" EPDM washered #9 screw fasteners.

B. Siding Panels
1. Panels shall be installed perpendicular to supports aligned level and plumb. Attach to wall girts and purlins with 1" EPDM washered #9 screw fasteners.

C. Trim Items
1. Trim items shall be installed at the base, at any wainscot transition, corners, top of steel siding, fascias, gables and ridge using appropriate 1" screw fasteners.

D. Vented Ridges
1. Use screw fasteners to install applicable vent option.
2. Insure that the minimum Manufacturer's clear throat opening is maintained.

E. Soffits
1. Soffits shall be installed to interlock with trim items at top of steel siding and at fascias.
2. Solid or optional vented soffit shall be used at end overhang.
3. A combination of solid and perforated soffits shall be provided for balanced ventilation at side overhangs.

F. Gutters and Downspouts (optional)
1. Gutters shall be installed with concealed gutter brackets, with screw fasteners 36" on center.
2. Silicone sealant and silicone rubber gaskets shall be used at laps to maintain leak prevention and to relieve stress due to thermal movement.

G. Filler Strips
1. Closed cell foam filler strips shall be provided at the top and bottom of the roofing panels.

3.6. TOLERANCES/QUALITY ASSURANCE

A. Framing Members
1. Shall follow and adhere to the NFBA document "Accepted Practices for Post- frame Construction Framing Tolerances."

B. Siding and Roofing
1. Shall be installed in their "True Position."

END OF SECTION