

## DIVISION 0

### CONDITIONS OF THE CONTRACT

#### SECTION 00110

### INSTRUCTIONS TO BIDDERS

#### 1. Definitions

- A. All definitions set forth in the “General Conditions” are applicable to these Instructions to Bidders.
- B. Bidding documents include the Invitations to Bidders, Bid Form, Specifications, plans and any Addendum issued prior to receipt of bid.
- C. Addendum are written or graphic instruments issued prior to the execution of the contract which modify or interpret the bidding documents, including drawings and specifications, by additions, deletions, clarifications or corrections. Addendum will become part of the contract documents when the construction contract is executed.

#### 2. Bidders Representation

- A. Each bidder by making his bid represents that he has read and understands all the bidding documents.
- B. Each bidder by making his bid represents that he has visited the site and thoroughly familiarized himself with the local conditions under which the work is to be performed. Unfamiliarity with the site conditions will not be considered cause for extra payment.

#### 3. Bidding Procedures

- A. All bids must be prepared on the forms provided by Menard, Inc. (“Menard”), submitted in accordance with the Instructions to Bidders.
- B. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Invitation to Bidders, or prior to any extension thereof issued to the bidders.
- C. Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his bid of any part thereof for thirty days after the time designated for the receipt of bids in the Invitation to Bidders.
- D. Prior to the receipt of bids, Addendum will be mailed or delivered to each person or firm recorded by Menards as having received the bidding documents and will be available for inspection wherever the documents are kept available for that purpose.

Addendum issued after receipt of bids will be mailed or delivered only to the selected bidder.

- E. **Each bidder shall, as a part of his proposal, submit a list of all subcontractors and equipment suppliers with whom he proposes to contract with. Each bidder shall also designate the work to be performed with his own forces. This list shall accompany all payment requests.**
- F. Proposals shall be submitted in writing, identified with the project name, and name of bidder.
- G. Submit with bid, the person(s) who will be responsible for implementing, maintaining, inspecting and documenting the soil erosion control measures per the Stormwater pollution Prevention Plan (SWPPP) program, permit and Authority Having Jurisdiction (AHJ). Submit the person(s) storm water management certifications with the bid documents.
- H. Each bidder is given a copy of the "Sample Contract." If mark-ups of the contract are necessary, they are to be submitted with the bid for review. Revisions to the contract after successful bidder is selected are unacceptable. Contract will be considered null and void if contracts are received with changes.

4. Examination of Bidding Documents

- A. All contractors and subcontractors bidding shall carefully examine the bidding documents for all parts of the work to ascertain the conditions and requirements under which their work will be performed, and, not later than seven (7) days prior to the date for bids, shall make written request to Menards for interpretation or correction of any ambiguity, inconsistency or error which he may discover. Any interpretation or correction will be issued as an Addendum by Menards. Only a written interpretation or correction by Addendum shall be binding. No bidder shall rely upon any interpretation or correction given by any other method. Contractors will not be given extra payment for conditions and requirements which can be determined by examining the bidding documents.
- B. In cases where discrepancies or ambiguities occur between the drawings and specifications or in either the drawings or specifications, the contractor will be required to furnish the best quality of material and/or workmanship indicated, if he has not requested clarification of such items by Menards before submitting his proposal.

5. Substitutions

- A. Where the words "or equal", "equal to", "approved equal" or other synonymous terms are used in reference to materials, quality, methods, or apparatus, it is distinctly understood that the approval of any such substitutions must come from Menards whose decision is final and binding upon all concerned.

- B. Any product which may be used as an “or equal” must be submitted to Menards prior to the bid date.

6. Qualifications of Bidders

- A. The owner will not award the contract to any bidder who cannot furnish satisfactory evidence that he has adequate equipment and personnel to complete the work properly within the time stated in the proposal, and that he has suitable financial status to promptly meet all obligation incidental to performing the work.
- B. Menard Inc. will not award the contract to any bidder who cannot furnish satisfactory evidence that they will employ a competent person certified in the corresponding storm water management requirements covered under the applied permit.

7. Rejection of Bids

- A. The bidder acknowledges the right of the owner to reject any or all of the bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the owner to reject a bid if the bidder failed to furnish any required bid security, or to submit the data required by the bidding documents or if the bid is any way incomplete or irregular.

8. Signing of Contracts

- A. All contract documents including construction documents and SWPPP program documents will be signed in Eau Claire, Wisconsin prior to the commencement of work unless Menards approves otherwise. No extensions to the contract will be granted for delays by the contractor for not signing the contract in a timely manner. If contracts are sent to contractor, the contractor will agree that the contract was signed in Eau Claire and will be returned to Menard, Inc. within 3 days.
- B. Unless specified elsewhere herein, contractor and Menards agree that: i) electronically produced signatures and electronically reproduced signatures such as facsimile transmission or email/PDF file are valid for execution or amendment of this contract; and ii) this contract may be scanned or otherwise converted into an electronic and/or digital media file and a copy of this contract or the electronic data file produced from any such electronic or digital media format may serve and be given the same legal force and effect as the original.

## SECTION 00231

### GENERAL CONDITIONS

#### 1. Contract Documents

- A. The contract documents shall consist of the Construction Contract between Menards and the general contractor, drawings, specifications, bid documents, Addendum issued prior to the execution of the Construction Contract and modifications issued after the execution of the Construction Contract.

#### 2. Intent

- A. This set of specifications and the accompanying drawings are complementary and what is called for in either shall be binding as if called for by both. It is the intent of these specifications and the drawings to include all labor, materials, equipment and transportation necessary for the proper execution and completion of the entire project, including the installation of certain materials furnished by Menards. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers' responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material supplier's responsibility to supply at no additional cost to Menard, Inc.
- B. The general contractor, subcontractors and material suppliers working under these specifications and drawings shall each turn over his portion of the project in a complete operating condition irrespective of whether the drawings, the specifications or both cover each individual item in minute detail.
- C. Any ambiguities, errors, inconsistencies, or omissions discovered by a contractor, material supplier or a subcontractor shall be reported to the general contractor and Menards immediately for resolution. The more stringent requirement will apply.
- D. This section of the specifications shall apply to all other sections of the specifications and to the general contractor, subcontractors and material suppliers.

#### 3. Ownership of Drawings and Specifications

- A. The drawings, specifications and any other documents prepared by Menards remain the sole property of Menards. Neither the general contractor, nor any subcontractor or material supplier shall reproduce or claim ownership to any drawing, specification or document without the specific approval from Menards. **Contractor shall sign Confidentiality Agreement and submit with bid proposal.**

4. Supervision

- A. The general contractor shall supervise and direct the work, using the contractor's best skill and attention. The contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.
- B. The contractor shall be responsible to the owner for acts and omissions of the contractor's employee, subcontractor and their agent and employee and other persons performing portions of the work under a contract with the contractor.
- C. The contractor shall be responsible for inspection of portions of work already performed under this contract to determine that such portions are in proper condition to receive subsequent work.
- D. The contractor shall employ a competent project manager and superintendent and necessary assistants who shall be in attendance at the project site during performance of the work. The project manager and superintendent shall represent the contractor, and communications given to the superintendent shall be as binding as if given to the contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case using R.F.I. form provided at the end of this section.
- E. The superintendent and project manager (name previously submitted with bid) shall be approved by the Owner before the contract will be prepared for execution. The superintendent shall devote total and full time attention to the requirements of the construction documents and shall not work on any other project until final completion. The job supervision shall remain on site full time until all punch list items are completed. The project manager shall devote as much time as required to maintain current records, meetings, correspondence and payment request. Unless approved by Menard, Inc. the same job superintendent that started the project shall remain on site until project is complete.
- F. It is hereby agreed between Menards and the contractor that the contractor will perform any work that is directed by the Menards construction manager to meet the Menards contract completion date and will maintain the original management and supervision team to continue their office and job site duties on a full-time basis through contract completion date and/or any other time the contractor has any work being performed on the project regardless of the date or condition of project completion.
- G. Contractor must maintain a person(s) onsite who is certified in stormwater management and the associated Best Management Practices (BMP's). This person(s) must implement, maintain, inspect and document all storm water management activities under the SWPPP program, permit and AHJ requirements. Upon site mobilization, the permit, erosion control plan(s), civil engineers certification and contractor's person(s) certification must be laminated and posted on the wall of the job trailer. The erosion control log book must be accessible in the jobsite trailer at all

times and kept up to date daily. Documents to be maintained in the log book are, but not limited to:

1. End of the week and ½” or greater rain event inspection reports must be kept in chronological order.
2. All photos of deficiencies, corrections etc.
3. Delegation of Authority (or approved equal) form.
4. Subcontractor agreements and certifications.
5. SWPPP Program and all associated documents.
6. AHJ (ie: EPA) inspection reports and correspondence.
7. Civil Engineer and Contractors certification sign-off.
8. Menard Inc. Inspection reports and correction photos.
9. Notice of Intent (NOI) and Permit (NPDES or other).

All rain event inspection reports and log summary must be e-mailed to the Menard, Inc. project manager the next business day and end of the week reports and log summary must e-mailed to Menard, Inc. project manager by 12:00 noon (CDT) on Friday. A \$100.00 fine will be implemented per delinquent report. Fines may also be implemented for log book and SWPPP board deficiencies. SWPPP inspections, reports and maintenance are required to be fulfilled until the storm water permit is terminated. Once job trailer is removed, storm water log book must be kept at the store and maintained until permit is terminated.

As required by Federal Law, the general contractor will be required to monitor storm water discharges from the site and ensure those discharges do not exceed a specific numeric effluent limitation, by means of collecting water samples, performing the required testing of the samples, logging and reporting of the results and performing any corrective measures which may arise from the results.

H. Contractor shall conduct weekly progress meetings on site. The general contractor, job superintendent, project manager and all subcontractors performing work prior to that week, during that week and in the following week shall be in attendance. Meetings shall be scheduled so that Menards personnel can be in attendance.

I. Minimum Agenda For Weekly Site Meeting:

1. Organizational arrangement of contractor’s forces and personnel, and those of subcontractors, material suppliers and Owner’s construction manager.
2. Contractor certificates of insurance.
3. Status of Contractor – required submittals; list of subcontractors, schedule of values, etc.
4. Approved progress schedule. Work hours. Work outside of normal working hours (updated schedule).
5. Specific building regulations for work within and adjacent to existing building.
6. Critical work sequencing.
7. Procedures for processing field decisions; request for information procedures.
8. Change order process and procedures for processing change orders.

9. Procedures for processing applications for payment. Contract closeout procedures.
  10. Owner furnished equipment and materials process, procedures and coordination.
  11. Owner installed equipment and materials process, procedures and coordination.
  12. Owner separate vendor process, procedures and coordination.
  13. Submittal process, procedures and coordination.
  14. Temporary facilities and controls by Contractor.
  15. Temporary utilities provided by Owner.
  16. Procedures for preparation and maintenance of Project Record Documents.
  17. Contractor office, work, storage and parking areas.
  18. Work area security requirements.
  19. Safety procedures, first aid, and occupational safety and health requirements.
  20. Housekeeping, cleanliness, noise and dust control of work areas.
  21. Quality of workmanship required.
  22. Owner furnished testing and inspection services.
  23. Contractor's quality control procedures and requirements, inspection, testing and documentation.
  24. Status of building inspection.
  25. E-mail a minimum of 6 photos with daily job report at the end of each work day.
  26. Corrective measures to regain projected schedules.
  27. Erosion control measures, SWPPP program and BMP's.
- J. Documentation: Record minutes of conference and distribute typed copies to Owner's Construction Manager, participants and those affected by decisions made, 2 working days after conference date. Include with the minutes an updated construction schedule. Recording, producing and distributing by Contractor. Use format provided at the end of this section.
- K. The superintendent shall prepare daily progress reports which include his/her daily logs. These reports shall be sent to Menards by email transmission no later than noon on the following day. Use Daily Report Form at the end of this section. A minimum of six (6) photos shall be sent with each daily report photo documenting that day's progress. A \$100.00 fine will be collected for each delinquent report at the end of each week.
- L. Contractor shall maintain on site as required by authority having jurisdiction, erosion control inspection reports and maintenance logs.
- M. Contractor shall not allow any domestic pets on the jobsite premises.

## 5. Project Schedule

- A. The work to be performed hereunder shall be commenced and completed on or before the dates as shown in the contract. The general contractor agrees that time is of the essence and that the times stated shall only be modified by written agreement of the

parties. Completion means all work including punchlist items complete and all inspections complete. The contractor agrees that the owner will suffer financial loss if the project is not completed on the completion date.

- B. Using the Construction Progress Bar Chart example as the model; the Contractor shall develop a detailed Construction Schedule with activity time duration in calendar days further describing his method for performing the work within 7 days of signing the contract. This schedule shall be similar in appearance to the example Construction Progress Bar Chart with enough detail to clearly represent work flow and areas to be completed. The Contractor shall review the Contractor's schedule with the Construction Manager weekly from award of contract, or at the pre-construction meeting, whichever is first. Failure of the Contractor to have a construction schedule approved by the Menards construction manager will be considered cause to withhold progress payments.
  - 1 The Construction Progress Bar Chart example is not to be construed as an indication by the Owner as to means, methods or techniques of construction to be employed by the Contractor.
  - 2 Critical path activities shall be indicated on the Contractor's detailed construction schedule.
- C. The Contractor shall provide to the Menards construction manager weekly reports on the Construction Schedule as determined by the Menards construction manager. The Contractor shall maintain current weekly updated detailed construction schedule in the site construction field office.
  - 1. Construction Schedule Updating: Progress information to be included in schedule updates includes actual start and finish dates, percentage complete, remaining duration or projected finish dates for all activities in progress during reporting period. Schedule updates may also include approved added activity descriptions. Updates to the schedule shall not change the contract completion date. The progress schedule shall be updated weekly and resubmitted to Menards. If contractor fails to do this, a scheduling company will be hired at the contractors expense to keep the schedule updated.
- D. Inclement weather shall not be considered as a reason or cause for an extension of time for contract performance. No exceptions will be made. The contractor will be expected to work whatever hours necessary to complete the project on the dates listed on the construction contract. Overtime, shift work, etc. is considered incidental to the project and is not reason for extra payment.
- E. Should the updated approved Construction Schedule show the Contractor to be behind schedule, the Contractor shall immediately devise a plan for recovery of lost time within one week and submit it to Menards, Troy Anderson, General Manager of Construction for approval. Once approved by the Menards, Troy Anderson, General Manager of Construction, the Contractor shall immediately put recovery plan into action.



- F. During period covered by recovery plan, the Contractor's progress will continue to be monitored against approved Construction Progress Chart. If the Contractor does not recover from delay as detailed in his recovery plan, Menards may exercise its option and complete the work. The Contractor shall bear all costs and expenses related to recovery from the Contractor's delays including costs, expenses and lost sales incurred by Menards.

6. Labor and Materials

- A. Contractor represents that all materials supplied are new and the specified quality. All materials supplied by the contractor that can be supplied by a Menards store either by a direct purchase or special order shall be. In no case shall the contractor purchase any materials from Home Depot, Lowes, subsidiaries of these companies or any other direct competition to be used or displayed on the project.
- B. Unless otherwise provided in the contract documents, the contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, snow plowing, ice removal and other facilities and services necessary for proper execution and completion of work, whether temporary or permanent and whether or not incorporated or to be incorporated in the work.
- C. General contractor to provide all utilities (gas, electricity, water, sewer, phone, etc.) to the job site until Menards accepts the building and all construction under the contractors' contract as complete. Menards will process payment to the utility company and deduct said amount from the contract amount.
- D. The contractor shall enforce strict discipline and good order among the contractors' employees and other persons carrying out the contract. The contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.  
**Smoking will not be permitted within the building.**
- E. If any labor disputes arise with any of the trades while completing the contract, Menard reserves the right to immediately terminate this contract and to pay the contractor for the actual in-place construction, and for materials on the job supplied by contractor. If Menard so chooses to terminate this contract because of labor disputes, this contract upon payment of above items shall be null and void and contractor shall have no other recourse to Menard. Should Menards choose not to terminate contract, Menards will be entitled to a 5% reduction of contract as damages for loss sales due to these disputes.

Contractor agrees that contractor will be sensitive to current labor issues and concerns and will undertake every reasonable precaution to prevent labor disputes from arising. Specifically the contractor agrees to undertake all necessary and appropriate action to diminish the likelihood of labor disputes, including, but not limited to, work-stoppage,

work slow-down, hand –billing or picketing, from impacting Menards on-going business operations, sales and/or future goodwill at any of its stores or building sites.

Should Contractor fail to prevent such labor disputes, Menards shall have the right, in its sole discretion, to withhold 1% of the total price of the original contract from Contractor as liquidated damages.

- F. Menard, Inc. and their contractors will be supplying various materials delivered via common carrier, Menard Inc. transportation or by other means on this project. Verify the material list, construction plans and specifications for Menard, Inc. supplied materials. The contractor shall devote a second person (designated for receiving) to be responsible for checking and receiving and unloading all incoming building materials. No construction material deliveries are to be refused. **Contractor is to supply manpower and equipment for unloading.** The contractor shall have an all-terrain forklift and operator on site at all times during the project. The contractor shall carefully check the condition and the number of articles being delivered against the freight bill and packing slip. The contractor will be liable for all materials signed for by him, including shortages and damages discovered at a later date. All copies of the freight bills and the packing slips shall be signed by the job supervisor or designated receiving clerk. If there is anything wrong with the merchandise, make sure the truck driver signs for freight shortages or damages on all copies of the freight bill. It should be indicated on the packing slip what was missing or damaged. Menards shall be notified within one week or contractor will be liable for all damages and or shortages. Contractor hereby acknowledges and agrees that if the packing slip does not state any missing or damaged merchandise, then it will be assumed the merchandise was misplaced or damaged onsite which contractor will bear the burden of replacing said merchandise. **All original freight bills and packing slips from the jobsite must be signed and submitted weekly to Menards or the contractor could be subject to costs if packing and shipping slips are not submitted within the time restraints.** The job supervisor will be required to give all freight bills and receiving to the Menard, Inc. project manager weekly. If the contractor fails to submit signed receiving weekly this will become cause for non-payment. In any case where materials are delivered with no packing slip or freight bill, use the Menard Inc supplied copy of the purchase order to check materials in and sign the copy of the purchase order. If shortages or damages are determined, write it on the copy of the purchase order and notify the Menard Inc. project manager as described above. Contractor to provide protection and storage of all materials supplied by Menards and or Menard contractors.

Within 2 weeks from the award of the contract, the contractor will be required to provide an adequate staging area for our masonry block materials, lumber etc. An area 200' x 200' should be adequate. With numerous truckloads of masonry block and schedule restraints, block deliveries will be made as time allows and possibly well in advance of the material required on-site. With the designated staging area in place, this will allow the transportation and delivery of said materials the flexibility of scheduling. The block deliveries may be delivered via van truck, so a pallet jack, forklift and adequate labor must be available to unload the materials in a timely manner.

7. Guarantee

- A. It is understood that all contractors and subcontractors shall guarantee their work to be free from defects in workmanship and materials for two years beyond the receipt of final occupancy and this guarantee shall include all materials supplied by or purchased from Menard. All materials and equipment supplied by contractor shall be new. The contractor shall provide Menards with a warranty and maintenance bond in the amount of \$250,000.00. The certificate provided shall note the start of the bond to be upon receipt of final occupancy. Prior to final close out, the contractor will contact the surety and request a Rider be issued to the original bond specifying the corrected dates and forwarded this Rider to Menards.

8. Bond

- A. The contractor shall, within 14 days after award of the contract, provide to Menards a warranty and maintenance bond in the amount of \$250,000.00. The bond period shall be two years beyond the receipt of final occupancy.
- B. If performance and payment bonds are required, use only forms that have been previously approved by Menards.

9. Taxes

- A. The contractor shall pay sales, consumer, use and similar taxes for the work or portions thereof provided by the contractor which is legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

10. Permits, Fees and Notices

- A. Unless otherwise provided in the contract documents, the contractor shall secure and pay for the building permit and other permits and governmental fees, licenses, inspections and city required bonds necessary for proper execution and completion of the work.
- B. The contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on performance of the work.
- C. If the contractor performs work contrary to laws, statutes, ordinances, building codes and rules and regulations without such notice to Menards the contractor shall assume full responsibility for such work and shall bear the attributable costs.

11. Codes

- A. Each subcontractor shall be responsible for meeting all code (latest adopted edition) requirements applicable to his section, including but not limited to, the International

Code, Standard Building Code, the Governing Building Design Code and applicable local requirements, BOCA, or Wisconsin Commercial Building Code, local codes, Occupations Safety and Health Act and American Disabilities Act and NFPA and any parties having jurisdiction.

12. Documents and Samples at the Site

- A. The contractor shall maintain at the site for the owner one record copy of the drawings, specifications, Addendum, change orders and other modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved shop drawings, product data, samples and similar required submittals. These shall be available to Menards

13. Shop Drawings, Product Data and Samples

- A. The contractor shall review, approve and submit to Menards shop drawings, product data, samples and similar submittals required by the contract documents with reasonable promptness and in such sequence as to cause no delay in the work or in the activities of the owner or of separate contractors. Review contractor submittal log at the end of this section.
- B. By approving and submitting shop drawings, product data, samples and similar submittals, the contractor represents that the contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the work and the contract documents.
- C. The contractor shall not be relieved of responsibility for deviations from requirements of the contract documents by Menards review of shop drawings, product data, samples or similar submittals unless the contractor has specifically informed Menards in writing of such deviation at the time of submittal and Menards has given written approval to the specific deviation. The contractor shall not be relieved of responsibility for errors or omissions in shop drawings, product data, samples or similar submittals by Menards review thereof.
- D. Submit drawings with graphic information at accurate scale. Show dimension and note which dimensions are based on field measurements. Identify materials and products in work drawn. Indicate compliance with specific standards and special coordination requirements. Do not use reproduction of contract documents on shop drawings.
  - 1. Include on each drawing the title, date, revision numbers and dates and identify the project.
  - 2. Provide a minimum of 3 copies of shop drawings.
  - 3. See pages 43-45 for shop drawing submittals.
  - 4. Submit 'Field Use' drawings via E-mail and CD.

14. Clean-Up

- A. On a daily basis the contractor shall keep the premises and surrounding area free from accumulation of waste material or rubbish caused by operations under the contract and for contractors hired by Menards. At completion of the work the contractor shall remove from and about the project waste materials, rubbish, the contractor's tools, construction equipment, machinery and surplus materials.
- B. If the contractor fails to clean up as provided in the contract documents, the owner may do so and the cost thereof shall be charged to the contractor.
- C. Finished floor surfaces are to be dust mopped daily and scrubbed with an automated scrubber a minimum of one time each week.

15. Testing

- A. The general contractor shall be responsible for any inspections that will be required by the local building inspections department and/or Menards. These inspections may include, but not limited to, the following: site preparation, foundation observation, placement of reinforcing steel, inspection of Portland cement concrete, bolted and welded structural steel connections and the testing of masonry mortar. Copies of the inspection reports shall be submitted to Menards, Menards shall reserve the right to perform independent tests on all materials and equipment furnished for the project. Menard will contract an independent testing agency to perform random construction testing.

16. Insurance

- A. The following types and amounts of insurance shall be carried by all subcontractors and the general contractor: see construction contract for additional requirements.
  - 1. Workman's Compensation Insurance, Public Liability and Unemployment Insurance, as required by law.
  - 2. Bodily Injury Insurance:
    - \$1,000,000 each person
    - \$1,500,000 each occurrence
    - \$1,500,000 each aggregate
  - 3. Property Damage Insurance:
    - \$500,000 limit
  - 4. Automobile Bodily Injury Insurance:

\$100,000 each person

\$500,000 aggregate

5. Automobile Property Damage Insurance:

\$100,000 limit

6. Builder's Risk "All Risk" Insurance: Before commencement of the work, the contractor shall submit written evidence that it has obtained, for the period of the contract, Builder's Risk "All Risk" Completed Value Insurance coverage (including flood and/or earthquake) upon the entire project which is the subject of this contract and including completed work and work in progress and materials supplied by Menards. Such insurance shall include as Additional Named Insureds: Menards and each of its officers, employees and agents; and any other persons with an insurable interest designated by Menards as an Additional Named Insured. **No exclusions can be written on this Policy.**

- B. **Each subcontractor shall furnish to the general contractor satisfactory proof of carriage of the insurance required, with duplicate copies forwarded to Menards immediately after the award of the subcontract and prior to performing any work. In no case shall the general contractor or subcontractor perform work on the site without proof of the required insurances.**

- C. Once received Menard, Inc. will call the insurance agents to verify coverage and said requirements.

17. Protection

- A. During the construction of the project, the general contractor and each subcontractor shall provide necessary protection for the work and materials under his jurisdiction against injury from dampness, cold, vandalism, theft or other casualty and shall not damage other property at the site.
- B. It will be the contractor's responsibility to manage the quality and maintenance of required equipment to perform the work (i.e. forklifts). Equipment must be managed and maintained as to eliminate the possibility of oil leaks/spills, battery acid spills, etc. All electric lifts will be required to have diaper protection around the bottom of the lifts. If oil spills or leaks occur on the interior or exterior slabs, immediate clean-up must be employed. 'Pour and Restore' product may be used to help on the aid of clean-up. All visible stains due to oil spills, leaks, acid stains, etc. on the finished concrete product will be back charged to the contractor at a rate of \$100.00 per square inch.

18. Non-Conforming Work

- A. In the case of faulty or defective work, Menards shall have the option, in addition to any other remedy it may have, to accept the faulty or non-conforming work and take an appropriate reduction in the contract sum.

19. Hazardous Waste

- A. Contractor shall not cause or permit any hazardous wastes or materials to be brought upon, kept, or used on or about the site. Contractor shall not store, discard, dump or otherwise release any petroleum products or waste oils on or about the site. If contractor breaches its obligations as set forth above or contaminates the site, contractor shall indemnify, defend and hold Menards harmless from any and all claims, judgments, damages, penalties, fees, costs, liabilities or losses which arise as a result of such contamination.

20. Promotional Ad

- A. Contractor for store opening to provide a full page ad in the main local paper; Congratulations Menards on the opening of the store. The ad shall contain a ½ page size photo of the front elevation. The remaining ½ page to be used for advertising for the general contractor and other contractors who worked on the project. Submit two copies to Menards for records. The date run shall be the first Saturday after soft opening.

Submit name of paper, a sample colored copy of the ad and dates it will run for approval prior to running the ad. Include the demographic area that the paper has circulated coverage.

The picture shall be of professional quality and the site shall be clean of debris or snow. Enclosed within these specifications is a sample of what the ad should resemble.

SECTION 00300

CONSTRUCTION BID PROPOSAL FORM

Bid Date: \_\_\_\_\_

Bid Time: \_\_\_\_\_

From: \_\_\_\_\_  
\_\_\_\_\_

Hereinafter called the "Bidder"

To: Menards  
5101 Menard Drive  
Eau Claire, WI 54703

For: \_\_\_\_\_ (type of project)  
\_\_\_\_\_ (project location)  
\_\_\_\_\_

1. The undersigned, having examined and being familiar with the local conditions affecting the work and with the Bidding Documents, including the Addenda (list out all Addenda by number and date). \_\_\_\_\_  
\_\_\_\_\_

hereby propose to furnish all labor, materials, equipment, supervision, etc., required for the performance and completion of the aforementioned Work as follows:

- a. For Base Bid – Construction of a new Menards retail store.  
Exhibit "A" Bid Proposal shall be attached and fully completed, to provide a detailed cost summary in order for bid proposal consideration.

Total Off-Site Cost:	_____
Total On-Site Cost:	_____
Total Building Cost:	_____
Total Warehouse Cost:	_____
Total Cost:	_____

- b. Unit Prices  
For changing specified quantities of work from those indicated by the contract drawings and specifications, upon written instructions of the Owner, the following unit prices shall prevail in accordance with the General Conditions.



The following unit prices shall include all labor, overhead and profit, materials, supervision, equipment, appliances, bailing, shoring, shoring removal, etc., required to complete the work items listed.

Only a single unit price shall be given and it shall apply for MORE or LESS work than that shown on the drawings and called for in the specifications as indicated to be included in the Base Bid. In the event of more or less units than so indicated is actually furnished, change orders shall be issued for the increased or decreased amount as approved by the Owner.

**Unit prices must be filled out and submitted with bid proposal.**

Section	Description	Unit	Hourly Rate	Cost/Unit
Div. 1	General Conditions	Week		/Week
	Snow plowing paved area	Event		/Event
	Sweep paved area	Each		/Each
Div. 2	Operator	Hour		/Hr.
	Laborer	Hour		/Hr.
	Off site granular fill trucked in and placed	Cu. Yd.		/Cu. Yd.
	Off site borrow fill trucked in and placed	Cu. Yd.		/Cu. Yd.
	Topsoil stripping	Cu. Yd.		/Cu. Yd.
	Unsuitable undercut and placed on site	Cu. Yd.		/Cu. Yd.
	Unsuitable undercut and trucked off site	Cu. Yd.		/Cu. Yd.
	Lime stabilization	Sq. Yd.		/Sq. Yd.
	Woven stabilization fabric	Sq. Yd.		/Sq. Yd.
	8" Base course placed and compacted	Ton		/Ton
	5" Asphalt paving (see requirements on plan)	Ton		/Ton
	Pavement stripping	L.F.		/L.F.
	Traffic signs	Each		/Each
	Guard rail	L.F.		/L.F.
	Curb and gutter	L. F.		/L.F.
	Water			
	8" Watermain (D.I.)(installed)	L.F.		/L.F.
	10" Watermain (D.I.)(installed)	L.F.		/L.F.
	8" Water valve	Each		/Each
	10" Water valve	Each		/Each
	Sanitary			
	4' Dia. Valve vault	Each		/Each
	6" Sanitary sewer (PVC)	L.F.		/L.F.
	4' Dia. Sanitary manhole	Each		/Each
	Storm			
	_____ Dia. Pipe	L.F.		/L.F.
	_____ Dia. Pipe	L.F.		/L.F.
	_____ Dia. Pipe	L.F.		/L.F.
	4' Dia. Manhole	Each		/Each
	6' Dia. Manhole	Each		/Each
	12" minus rip-rap	Sq. Yd.		/Sq. Yd.
	Landscaping			
	Sod (installed)	S.Y.		/S.Y.
	Seed	S.Y.		/S.Y.
	Pulverized black dirt (trucked and placed)	Cu. Yd.		/Cu. Yd.
	Deciduous tree (average cost)	Each		/Each
	Shrub (average cost)	Each		/Each
	Excelsior blanket	S.Y.		/S.Y.
	Maintenance (Landscaping)	Season		/Season
	Irrigation system	L.F.		/L.F.
	14' high chain link fencing (installation only)	L.F.		/L.F.
	Irrigation booster pump	Each		/Each
	Trenching	L.F.		/L.F.
Div. 3	Cement Finisher	Hour		/Hr.

	Laborer	Hour		/Hr.
	Interior floor 4" reinf.	Sq. Ft.		/Sq. Ft.
	Interior floor slab 6" thick reinf.	Sq. Ft.		/Sq. Ft.
	Exterior slabs 6" thick reinf.	Sq. Ft.		/Sq. Ft.
	Poured in place retaining wall 12" thick reinf.	Cu. Yd.		/Cu. Yd.
	Removal & replacement of existing concrete	Sq. Ft.		/Sq. Ft.
	Blankets for cold weather protection	Sq.Ft.		/Sq. Ft.
	Cold weather concrete material	Cu. Yd.		/Cu. Yd.
	Footings – interior	C.Y.		/C.Y.
	Footings – perimeter with keyway	C.Y.		/C.Y.
	Ashford Sealer	Sq. Ft.		/Sq. Ft.
	Saw cutting of concrete full depth	L.F.		/L.F.
	Removal and replacement 4" reinf. Slab	Sq. Ft.		/Sq. Ft.
Div. 4	12" CMU wall reinforced	Sq. Ft.		/Sq. Ft.
	Face brick, if applicable	Sq. Ft.		/Sq. Ft.
	Mason	Hour		/Hr.
Div. 5	Steel erection	Ton		/Ton
	Crane	Hour		/Hour
	Welder & operation	Hour		/Hour
	Deck installation	Sq.		/Sq.
Div. 6	Carpenter	Hour		/Hr.
	Install 20 gauge steel studs	Sq. Ft.		/Sq. Ft.
Div. 7	Soffit	Sq. Ft.		/Sq. Ft.
	Steel Siding	Sq. Ft.		/Sq. Ft.
	Roof	Sq. Ft.		/Sq. Ft.
	Siding	Sq. Ft.		/Sq. Ft.
	Epoxy floor joint filler	L.F.		/L.F.
	Exterior perimeter sealant	L.F.		/L.F.
Div. 7	Epoxy floor joint filler	Unit		/Unit
	Exterior perimeter sealant	Unit		/Unit
Div. 8	Aluminum single glass man door	Unit		/Unit
	Transom glass & framing	Sq. Ft.		/Sq. Ft.
Div. 9	5/8" Drywall wall applied	Sq. Ft.		/Sq. Ft.
	5/8" Drywall ceiling applied	Sq. Ft.		/Sq. Ft.
	Ceramic tile	Sq. Ft.		/Sq. Ft.
	Acoustical ceiling 2x4 with grid	Sq. Ft.		/Sq. Ft.
	Resilient flooring	Sq. Ft.		/Sq. Ft.
	Painting applied to walls 2 coats	Sq. Ft.		/Sq. Ft.
	Painter	Hour		/Hour
	Ceiling bar joist & deck	Sq. Ft.		/Sq. Ft.
	Transition strip installed	L.F.		/L.F.
	Carpet Installation	Sq. Ft.		/Sq. Ft.
Div. 10	Contractor supplied 6" steel bollard			
	Contractor supplied 8" steel bollard			
Div. 15	Pipe fitter	Hour		/Hour
	Plumber	Hour		/Hour
	Laborer	Hour		/Hour
	Fire pump	Each		/Each
	4" branch line	L.F.		/L.F.
	2" branch line	L.F.		/L.F.
	Sprinkler head	Each		/Each
	2" waste PVC	L.F.		/L.F.
	4" waste PVC	L.F.		/L.F.
	¾" water piping – copper	L.F.		/L.F.
	1" water piping – copper	L.F.		/L.F.
	2" water piping – copper	L.F.		/L.F.
	4" floor drain	Each		/Each
	4" clean out	Each		/Each
Div. 16	Electrician	Hour		/Hour

	Laborer	Hour		/Hour
	Lift rental	Weekly		/Week
	120 Volt floor outlet (complete)	Each		/Each
	120 Volt wall outlet (installed)	Each		/Each
	Overhead store lights (installed)	Each		/Each
	Light pole base (concrete) 3' diameter	Each		/Each
	Parking lot light (installed)	Each		/Each
	Exterior wall light	Each		/Each
	Perimeter yard lights	Each		/Each
	120 Volt breaker (installed)	Each		/Each
	277 Volt breaker (installed)	Each		/Each
	480 Volt breaker (installed)	Each		/Each
	½" Conduit PVC Installed	L.F.		/L.F.
	½" Conduit EMT Installed	L.F.		/L.F.
	¾" Conduit PVC Installed	L.F.		/L.F.
	¾" Conduit EMT Installed	L.F.		/L.F.
	1" Conduit PVC Installed	L.F.		/L.F.
	1" Conduit EMT Installed	L.F.		/L.F.
	3" Conduit PVC underground Installed	L.F.		/L.F.
	4" Conduit PVC underground Installed	L.F.		/L.F.

c. Mark-up of Additional Work

Shall not exceed 2.5% for overhead and profit for the subcontractor performing the work and 2.5% for the general contractor above actual cost. This should be reflected in the unit cost.

d. Project Duration

Building Start Date:

Building Substantial Completion Date:

Fixturing Start Date:

Merchandise Start Date:

e. Names of Major Subcontractors:

Names of major Subcontractors to be used for the designated major contract portions of the Work as listed herein are (Note: State one name for each subcontract listed)

Site Excavation: \_\_\_\_\_

Site Demolition: \_\_\_\_\_

Utilities: \_\_\_\_\_

Asphalt Paving: \_\_\_\_\_

Landscaping: \_\_\_\_\_

Concrete (Site): \_\_\_\_\_

Concrete (Bldg.): \_\_\_\_\_

Masonry: \_\_\_\_\_

Structural Steel: \_\_\_\_\_

Glass & Glazing: \_\_\_\_\_

E.I.F.S.(if applicable) \_\_\_\_\_

Drywall: \_\_\_\_\_

Painting: \_\_\_\_\_

Plumbing: \_\_\_\_\_

Automatic Irrigation: \_\_\_\_\_

Fire Sprinklers: \_\_\_\_\_  
Electrical: \_\_\_\_\_  
Carpentry: \_\_\_\_\_

2. **The Bidder must have a fully executed contract prior to the commencement of any work.**
3. The Bidder realizes the importance of completing the work on this contract in a timely manner. With that understanding, the Bidder will provide the personnel and equipment necessary to bring the project to completion, as determined by the Owner, on or before \_\_\_\_\_. The Owner will suffer financial loss if the project is not substantially complete by this date.
4. In submitting this bid it is understood that the right is reserved by the Owner to reject any and all bids and it is agreed that all bids may not be withdrawn for a period of thirty (30) days from the date finally designated for the receipt of the bids.
5. The Bidder hereby certifies:
  - a. That this proposal is genuine and is not made in the interest of or on behalf of any undisclosed person, firm or corporation, and is not submitted to conformity with any agreement or rules of any group, association or corporation.
  - b. That he has not directly or indirectly induced or solicited any other Bidder to put in a false or sham proposal;
  - c. That he has not directly or indirectly induced or solicited any person, firm or corporation to refrain from bidding; and
  - d. That he has not sought by collusion or otherwise to obtain for him or herself any advantage over any other Bidder or over the Owner.
  - e. Bidder will not discriminate against any employees or applicant for employment because of race, creed, color or national origin in connection with the performance of his work.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

IF AN INDIVIDUAL:

\_\_\_\_\_  
Name of Individual

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Firm Name (if any)

\_\_\_\_\_  
State Residence Address

\_\_\_\_\_  
Address for Communications

\_\_\_\_\_  
By: \_\_\_\_\_  
Signature

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Name of Partnership

[illegible]

## Division 0

## SECTION 00350

### CONFIDENTIALITY AGREEMENT

Effective Date: \_\_\_\_\_

Menards ("Menard") is currently accepting bids/proposals from various contractors/suppliers. In order to submit a precise and accurate bid/proposal, a contractor/supplier must receive access to confidential information from Menard including, but not limited to, blue prints, store locations, specifications, diagrams and other information relating to the construction and remodeling of the Menard stores. In consideration for being privileged with this confidential information, for the purpose of possibly submitting a bid/proposal,

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City/State/Zip Code)

Agrees to enter into the following Confidentiality Agreement:

1. To keep secret and not disclose any of the confidential information provided by Menard including, but not limited to, blue prints, store locations, specifications, diagrams and other information related to the store construction, regardless of where or by what means that information is provided and regardless of whether that information is in writing or communicated orally;
2. To not permit any of its employees or agents to sell, transfer, publish, disclose, display or otherwise make accessible, in whole or in part, any of the confidential information described in paragraph 1 of this Agreement;
3. To use the confidential information described in paragraph 1 only for the purpose of formulating a precise and accurate bid/proposal to be submitted to Menard;
4. That Menard is under no obligation to accept a particular bid/proposal and that this Agreement shall remain in effect regardless of whether or not Menard and the contractor enter into a contract for the proposed work;
5. That any additions or modifications to this Agreement shall be in writing and signed by both parties;
6. That all of the confidential information described in paragraph 1 and any copies of that information shall be returned to Menard upon request;
7. That this Agreement is made under and shall be construed according to the laws of the State of Wisconsin;
8. That any lawsuit pertaining to this Agreement shall be venue only in a court of competent jurisdiction in Eau Claire County in the State of Wisconsin and that the contractor accepts this venue;
9. That Menard shall be entitled to all actual and consequential damages arising out of any disclosure of the confidential information described in paragraph 1 or for any other damages arising out of any other violation of the provisions of this Agreement; and
10. That Menard shall be entitled to all reasonable attorneys' fees and/or expenses that it incurs to enforce any provision of this Agreement.

### PARTICIPANT IN THE BIDDING PROCESS

\_\_\_\_\_  
(Name of Contractor)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Printed Signatory's Name)

\_\_\_\_\_  
(City/State/Zip Code)

\_\_\_\_\_  
(Printed Signatory's Title)

**EXHIBIT “A” – STORE PARCEL  
DETAIL BID BREAKDOWN**

	<u>Sub-Total</u>	<u>Total</u>
<b>DIVISION 1 – GENERAL CONDITIONS</b>		_____
Permit Cost	_____	
Indirect Cost	_____	
Temporary Protection	_____	
Field Office	_____	
Storage	_____	
Clean up & Dumpsters	_____	
Insurance/Bonds	_____	
Supervision	_____	
Special State Tax	_____	
Other	_____	
Guard Service Cost	_____	
Winter Conditions Cost (If Applicable)	_____	
Material Handling (I.E. Roofing HVAC)	_____	
Misc. Construction Cost	_____	
<b>DIVISION 2 – SITE WORK</b>		_____
Demolition	_____	
Foundation Excavation	_____	
Grading	_____	
Plumbing/Sewer/Water	_____	
Stone Base Course	_____	
Paving	_____	
Landscape Irrigation	_____	
Chain Link Fencing	_____	
Wrought Iron Fencing	_____	
Landscape	_____	
Retaining Walls (block)	_____	
Misc. Site Work	_____	
<b>DIVISION 3 – CONCRETE</b>		_____
Concrete Foundation	_____	
Concrete Floor	_____	
Site Concrete	_____	
Concrete Retaining Walls	_____	
<b>DIVISION 4 – MASONRY</b>		_____
Building Masonry	_____	
Site Masonry	_____	
Brick work (if applicable)	_____	
Stone Masonry	_____	
<b>DIVISION 5 – STEEL</b>		_____
Structural Steel	_____	
Structural Steel Racking	_____	
Steel Stud Work	_____	
Garden Center Frames	_____	

	<u>Sub-Total</u>	<u>Total</u>
<b>DIVISION 6 – CARPENTRY</b>		
Rough & Finish		
Wood Blocking		
<b>DIVISION 7 - THERMAL/MOISTURE PROTECTION</b>		
Waterproofing		
Insulation		
Sealants		
Metal Siding/Roofing		
Smoke Vents/Skylights		
<b>DIVISION 8 – DOORS/WINDOWS</b>		
Metal Doors & Frames		
Wood Doors & Frames		
Overhead Doors		
Hardware		
Bifold Doors		
<b>DIVISION 9 – FINISHES</b>		
Gypsum Sheathing		
Plaster (EIFS) – if applicable		
Carpet		
Ceramic		
Rubber/Vinyl Flooring		
Acoustical Ceiling Cost		
Painting Cost		
<b>DIVISION 11 – SPECIALTIES</b>		
Dock Levelers & Seals		
Toilet Partitions		
<b>DIVISION 15 – MECHANICAL</b>		
Underground		
Overhead		
Finishes		
<b>DIVISION 16 – ELECTRICAL</b>		
Building Complete		
Site work Electrical		
Sound System Complete		
Fire Alarm System Complete		
Security Alarm System Complete		
Camera System Complete		
Phone System Complete		
Computer System Complete		
<b>OVERHEAD/PROFIT COST</b>		
<b>GRAND TOTAL</b>		

Alternative Bid Proposals (Indicate as an Add or Deduct to the total cost)



1. 7" Non-reinf. Concrete over 4" of stone base in lieu of asphalt paving yard area only.
2. Provide cabled wire distribution for overhead lighting run of top side of roof deck in lieu of surface mounted conduit to underside of deck (in the low ribs only).
3. Performance and payment bond for the complete project.

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**EXHIBIT “A” – WAREHOUSE  
DETAIL BID BREAKDOWN**

	<u>Sub-Total</u>	<u>Total</u>
<b>DIVISION 1 – GENERAL CONDITIONS</b>		_____
Indirect Cost	_____	
Temporary Protection	_____	
Field Office	_____	
Storage	_____	
Clean up & Dumpsters	_____	
Insurance/Bonds	_____	
Supervision	_____	
Special State Tax	_____	
Other	_____	
Winter Conditions Cost (if applicable)	_____	
Permit Cost	_____	
Miscellaneous Construction Cost	_____	
<b>DIVISION 2 – SITEWORK</b>		_____
Grading	_____	
Excavation	_____	
Stone Base	_____	
<b>DIVISION 3 - CONCRETE</b>		_____
Concrete Foundation (if applicable)	_____	
Concrete Slab	_____	
Retaining Walls (if applicable)	_____	
<b>DIVISION 4 – MASONRY</b>		_____
Masonry Walls (if applicable)	_____	
<b>DIVISION 5 - STEEL</b>		_____
Structural Steel (if applicable)	_____	
Structural Steel Racking	_____	
Miscellaneous Metals	_____	
<b>DIVISION 6 - CARPENTRY</b>		_____
Rough & Finish	_____	
<b>DIVISION 7 – THERMAL &amp; MOISTURE PROTECTION</b>		_____
Under slab Insulation (if applicable)	_____	
Metal Siding, Roofing and Trim	_____	
Other Siding, Roofing, etc. (if applicable)	_____	
Insulation	_____	
Caulking	_____	
Waterproofing	_____	

	<u>Sub-Total</u>	<u>Total</u>
<b>DIVISION 8 – DOORS &amp; WINDOWS</b>		_____
Prehung doors & hardware	_____	
Sliding doors & hardware	_____	
Specialty skylights (if applicable)	_____	
Other (specify)	_____	
<b>DIVISION 9 – FINISHES</b>		_____
Painting	_____	
<b>DIVISION 16 - ELECTRICAL</b>		_____
Rough in Electrical	_____	
Finish Electrical	_____	
Fire Alarm	_____	
Security	_____	
CCTV	_____	
Other	_____	
<b>OVERHEAD/PROFIT</b>		_____
<b>GRAND TOTAL</b>		_____

**EXHIBIT "A" – OFF PARCEL CONSTRUCTION  
DETAIL BID BREAKDOWN**

	<u>Sub-Total</u>	<u>Total</u>
<b>DIVISION 1 – GENERAL CONDITIONS</b>		_____
Indirect Cost	_____	
Temporary Protection	_____	
Field Office	_____	
Storage	_____	
Clean up & Dumpsters	_____	
Insurance/Bonds	_____	
Supervision	_____	
Special State Tax	_____	
Conditions (if applicable)	_____	
Water	_____	
Permit Cost	_____	
Miscellaneous Construction Cost	_____	
Other (specify)	_____	
<b>DIVISION 2 – SITEWORK</b>		_____
Demo	_____	
Traffic Lights	_____	
Utilities	_____	
Base Course	_____	
Grading	_____	
Paving	_____	
Concrete	_____	
Striping	_____	
Traffic Control	_____	
Landscaping	_____	
Fencing	_____	
Miscellaneous (specify)	_____	
<b>DIVISION 16 - ELECTRICAL</b>		_____
Future Conduit	_____	
Lighting	_____	
Signage	_____	
Other (specify)	_____	
<b>OVERHEAD/PROFIT</b>		_____
<b>GRAND TOTAL</b>		_____

## DIVISION 1

### GENERAL REQUIREMENTS

#### SECTION 01152

### APPLICATION FOR PAYMENT

#### 1. Pre-requisites to Initial Payment

- A. Menards will not approve initial payment under the contract until Menards has received and approved:
1. List of subcontractors, complete with addresses and phone numbers;
  2. Provide evidence that all subcontractors and material suppliers are contracted for the project. In no case will payment be made before subcontracts and material contracts are awarded.
  3. Construction progress schedule;
  4. Schedule of values;
  5. Verification of all required bond coverage;
  6. Certificates of all required insurance;
  7. Copy of the construction contract, signed by Menards and the contractor;
  8. Confirmation in writing that availability of materials specified will not cause delay in the progress of the construction schedule;
  9. Show evidence that scarce and/or hard to obtain materials is on order and will be available where required to be installed;
  10. Final request for substitutions;
  11. Provide surveyors certification showing building pads properly located;
  12. The soils engineer certification that building pads have been properly compacted;
  13. Test results as indicated under Testing Requirements;
  14. Lien waivers from the contractor and subcontractors for the current payment request (use lien waiver form, page 30).
  15. Civil Engineers and contractor certification sign-off of soil erosion control training..
  16. Erosion Control Log book, SWPPP, permit, and employed person(s) certification is posted in the job trailer.
  17. All SWPPP program documents signed.
- B. Contractor shall provide a notarized statement to Menards with the first payment application listing all pre-requisite items completed.

2. Progress Payments

- A. Make application for payment on original AIA Document G702, with AIA Document G703 continuation sheet or sheets as required. Also, contractor shall submit an itemized “Contractors Affidavit” in the form as shown in “Attachment B” to the construction contract (use format on page 29).
- B. Application to include Menards - approved change orders. Contractor shall not list unapproved change orders on the payment request.
- C. Submit two signed copies to Menards of original AIA Document G702 with construction sheet G703 and copies of sign change orders applicable to that payment request.
- D. Provide **original** lien waiver from the general, all subcontractors, material suppliers, service suppliers and rental equipment suppliers. Lien waiver should equal the exact amount requested on the payment request and are **originals** and **notarized**. Lien waivers should also list the remaining amount owed. Provide original waiver of notarized mechanics lien waivers statement from each subcontractor and general contractor requesting payment for the current payment request using the enclosed lien waiver form. No other form will be accepted. All material suppliers, rental companies, sub-subcontractors shall be listed on this lien waiver form.
- E. The percentage of payment “retainage” as defined in the construction contract is withheld from each payment, the remaining sum (final payment) will not be paid until at least 35 days after recordation of the Notice of Substantial Completion but not before all work required under the contract has been carried out, the work has been finally inspected and accepted by Menards and all items noted for pre-requisites to final payment have been completed. **Retainage includes all contractors, subcontractors and material supplier, etc.**
- F. Menards will review percentages as noted in the schedule of values. Menards will not be responsible for the mathematics or modifications required in payment requests. General contractor cannot invoice more than the percentage completed for all work, general conditions and profit.
- G. Schedule of value change. The amounts listed on the first payment request should not change from payment request to payment request for each subcontractor, material supplier, etc. unless approved by Menards. In the event that the schedule of values are changed in any amount, the Contractor shall submit to Menards a signed and **notarized** schedule of value change utilizing the enclosed schedule values change form at the end of this section.

- H. All progress payments will be held if storm water books, daily reports, progress photos etc are not up to date or maintained under the requirements of the contract documents or permits.

3. Requesting and Utilizing Menard Store Credit

- A. Menards will issue store credit to the Contractor in the amount shown in the Building Construction Contract – Article 6 – Contract Sum. The total dollar amount of Menard store credit the Contractor is to receive per the contract should be subtracted from the Contractors general conditions total, and listed as a separate line item on the payment application AIA form G703. The scheduled value column for Menard store credit on AIA form G703 should show the total store credit to be paid out.
- B. The Contractor will request store credit when making application for payment by indicating the requested amount in the “this period” column of AIA form G703.
- C. The Contractor can make a special request for store credit very early in the project by simply setting up a payment request and marking it “Special pay request for store merchandise credit”. Sufficient work to cover the request must have been completed such as the footings have been dug and the interior column pads poured. An original notarized lien waiver must accompany the request.
- D. The Contractor may want to request the entire amount of store credit on the very first application, or a portion on each application. The Contractor must include a brief note on the application to indicate if payment will be in the form of one certificate, or in smaller denominations. For example: one certificate of \$50,000, or 10 certificates for \$5,000, or 50 certificates for \$1,000.
- E. The Contractor will receive Menard store credit certificates as requested with their regular payment. When using the certificates at the store level, the Contractor will make their selections and present the certificate(s) to the cashier upon arriving at the register. The cashier will accept the certificate as payment up to the face value. If the entire certificate is not used, it will be devalued by the amount of the purchase, validated to show the remaining balance, and returned to the Contractor. The certificates can be used at any Menards location and never expire.
- F. Contractors may prefer to order merchandise by calling the departments to arrange for delivery directly to the jobsite, saving time and money. Menards offers a wide variety of products including: Building Materials, Hardware, Electrical, Millwork, Wallcoverings, Plumbing and Floorcoverings.
- G. **Once the store credit certificates have been utilized and additional financing be needed, Menards also offers the Menard Big Card, Contractors credit card and commercial credit cards.**

4. Pre-requisites to Final Payment

- A. Menards will not approve final payment under the contract until Menards has received in an acceptable form:
1. Evidence of satisfactory completion of the work, including but not limited to, the punch list items;
  2. All guarantees and warranties required under the contract;
  3. Operation, maintenance data and instructions and warranty statements;
  4. Final accounting of all allowance amounts;
  5. Evidence of filing and recording of Notice of Completion, and closing of lien period without filing of liens;
  6. Sworn affidavit of total release stating that all workmen and persons employed, all firms supplying materials, and all subcontractors on the work have been paid in full, and that there are no bills outstanding against the work for either labor or materials except certain items, if any, to be set forth in the affidavit covering disputed claims or items in connection with which notices to withhold have been filed under provisions of the statutes of the state where the work was constructed; use enclosed form at end of this section;
  7. Final list of subcontractors, sub-subcontractors and principal vendor including addresses and phone numbers;
  8. Receipt of lien releases;
  9. Evidence that all utility invoices have been paid;
  10. Receipt of all test results;
  11. Receipt of all bonds and warranties;
  12. All as-built drawings required by contract;
  13. Landscaping payment is contingent upon completion of all contract work.
  14. Stormwater log book is located and up to date with inspection reports at the store. Store Management has been trained as to the contents and importance of the Stormwater log book.

5. Lien Claim

- A. In the event that a lien or a personal liability notice or like actions is filed or that there exists a potential lien situation, the Contractor will within 10 days resolve the situation to the satisfaction of the Owner. If the lien or personal liability notice is not cleared by the 10 days as required, the contractor agrees to bond the full amount of the lien and/or personal liability notice. The bond will be presented to Owner 10 day lien notice. The Contractor agrees to defend and indemnify Menards against any and all lien claims and/or personal liability notices. If the contractor fails to resolve the lien or bond over the lien within 10 days contractor agrees to pay owner \$500.00 per day starting on the eleventh day running 7 days in a week until the lien claim is resolved of the resolution.



- B. In the event Menards has to secure legal services through outside council or company council, Contractor agrees to reimburse Owner for said cost regardless of the resolution of the claim. At Menards option, it can suspend any further payments to the general contractor until the lien claim or personal liability notice or like actions are resolved.

## SECTION 01153

### CHANGE ORDER PROCEDURE

- A. Change orders will not be considered for contractor or subcontractors errors, omissions, mistakes, scheduling, code compliance, site condition, weather, etc. and will not be considered.
- B. The change order shall indicate the actual cost of the work and shall have attached all back up documentation, haul slips, time sheets, material break down, etc. The cost of the change order fee (5%) includes all overhead, profit and operational items such as taxes, bonds, printing costs, mailing costs, insurance and any other incidental costs. No other itemized costs or mark ups will be acceptable. Cost of the work shall not exceed unit cost in bid proposal.
- C. The contractor shall require a written provision under contract with the subcontractor that the subcontractor submit any changes in cost to adjust the subcontract amount by use of written change order. No adjustments will be accepted by the Contractor nor Menards from the subcontractor except for those submitted on written change order.

#### 1. Compensation

- A. The contractor, including subcontractors mark-up should not exceed 5% total or 2.5% subcontractor mark-up, 2.5% general contractor mark-up, of the change above actual cost to cover overhead, profit, supervision, cartage, bonds, insurance and incidental costs. General contractor will not be entitled to any mark up if the change occurs after job supervisor is no longer on site or if no additional supervision is required.
- B. In a like manner, changes in the contract sum due to reductions in the scope of work shall include 5% for the contractors and subcontractors profit and overhead.
- C. If Menards is required to process cost which will be a back charge to the contractor, Menards will be entitled to a 10% mark up for administrative costs.
- D. Menards can contract with subcontractor direct to perform any extra work if it so chooses. Contractor shall have no recourse to Menards for mark up, general condition, profits, etc.

## 2. Submittals and Review

- A. Use **original AIA G701** change order form for submittal. Make submittals directly to Menards **unless the situation requires immediate action. Change orders are to be signed prior to doing the work.** The change order shall clearly state the original contract amount, revised contract amount and any extension or reduction in the schedule.
- B. **To expedite the processing of change orders and clarify costs, all change orders shall be accompanied by a written detailed breakdown from all contractors, subcontractors and suppliers involved, indicating hours, equipment and materials listed and unit prices.**
- C. Change orders are to be dated and numbered in sequential order. Contractor shall submit with each change order an update of the change order log enclosed at the end of this section.
- D. When the review process of any change order becomes excessive due to improper or incomplete submittals by the contractor, the contractor will reimburse Menards for time attributed to the additional reviewing process. Said amount will be deducted from the final payment due the contractor.
- E. Change orders should not be listed on the payment request until approved. Change orders should appear in the original AIA payment request as a separate line item. The listing for the change order in the payment request should break out amounts owed to subcontractors, material suppliers, rental companies and service suppliers. These amounts should appear as separate line items under the listing for the change orders. Change order payments to subcontractors, suppliers, rental companies and service suppliers should remain as separate line items throughout the project and should not be transferred and added or deducted from their base contract line item.

### SECTION 01300

#### SUBMITTALS AND SUBSTITUTIONS

## 1. Description

- A. Make submittals required by the contract documents and revise and resubmit as necessary to establish compliance with the specified requirements. Contractor to utilize the contractor submittal log provided at the end of this section and comply with the time frames listed within the log form.

2. Substitutions

- A. The contract is based on the standards of quality established in the contract documents. Substitutions will be considered only when listed at the time of bidding, or when substantiated by the contractor's submittal of required data within 14 calendar days after award of the contract.
- B. Do not substitute materials, equipment or methods unless such substitution has been specifically approved in writing by Menards.
- C. Where the phrase "or equal" occurs in the contract documents, do not assume that the materials, equipment or methods will be approved as equal unless the item has been specifically so approved for this work by Menards in writing.
- D. Accompany each submittal with a letter of transmittal showing all information required for identification and review.

3. Shop Drawings and Product Data

- A. Make shop drawings accurately to a scale sufficiently large enough to show all pertinent aspects of the item and its method of connection to the work.
- B. Submit shop drawings in the form of two hard copies of each within 3 weeks of award of contract by Menards
- C. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portion of the contents is being submitted for review.
- D. Submit 'Field Use' drawings via E-mail and CD.

4. Review

- A. Review by Menards does not relieve the contractor from responsibility for errors or nonconformities which may exist in the submitted data. Should a governing authority suggest, imply or direct the placement of any material or system other than what was submitted and approved by Menards. Before the contractor proceeds, Menards must approve these changes in writing.

SECTION 01410  
TESTING AND INSPECTION

1. Description

- A. Menard, Inc. will provide testing as described in this section and elsewhere in the contract documents. In no case shall any testing be omitted without written approval from Menards

2. Payment for Testing

- A. Menard, Inc. will contract and pay for a independent testing firm to provide the testing set forth within this Section 01410.
- B. When supplemental tests requested by the owner indicate non-compliance with the contract documents, costs of supplemental tests associated with that non-compliance will be deducted by the owner from the contract sum, and subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the costs thereof shall be paid by the contractor.
- C. The general contractor shall provide on site monitoring and testing required by authority having jurisdiction, OSHA, etc.
- D. General contractor to provide carbon dioxide monitoring during and 2 weeks after the interior floor slab pours. Irregardless if this is an owner direct contract.

3. Execution

- A. Except as may be otherwise specifically approved by Menards have the testing laboratory secure and handle all samples and specimens for testing.
- B. Provide access to the work at all times for representatives of the testing laboratories. Provide facilities for such access as required.
- C. Contractor shall initiate and coordinate for all testing and inspection required by the contract documents and governmental agencies having jurisdiction.

4. Soil Inspection and Testing

- A. Also see pertinent sections of Division 2 of these specifications.
- B. Make required inspections and tests including, but not necessarily limited to:
  - 1. Visually inspect on-site and imported fill and backfill, making such tests and retests as necessary to determine compliance with the contract documents.

2. Make field density tests on samples from in-place material as required by the contract documents.
  3. As pertinent, inspect and test the scarifying and recompacting of cleaned subgrade; inspect the progress of excavating, filling, and grading; make density tests and fills and backfills; and verify compliance with provisions of the contract documents and governmental agencies having jurisdiction.
- C. **Make and distribute necessary reports and certificates within 24 hours of test.**
5. Excavation and Backfilling Testing
  - A. Also see pertinent sections of Division 2 of these specifications.
  - B. Minimum compaction tests shall be taken every twenty-five lineal feet and two vertical intervals for foundation backfill. General contractor shall be responsible for coordinating testing. **Test results shall be transmitted to Menards within 24 hours by testing company.**
  - C. Compaction equipment shall be of the static type, vibratory type or a combination of both types. All areas shall be compacted to a minimum of 98% of the maximum density at its optimum moisture content +/- 2% using modified proctor density (ASTM D1557).
6. Asphalt or Concrete Pavement Testing
  - A. Also see pertinent sections of Division 2 of these specifications.
  - B. Prior to placement of asphalt or concrete paving take 20 thickness test of the base course as directed by Menards. Do not place pavement prior to test result approval.
  - C. During asphalt/concrete placement, contractor will take 10 random core samples from the pavement to determine pavement thickness, base course thickness, extractions, and density test and strength determinations. **Verify mix design. Submit results to Menards prior to payment of work.** Whenever the cores show a thickness deficiency greater than 0.50 inch, the pavement shall be considered defective and shall be replaced. Where the cores show a deficiency between .10 and .40 inch the contractor may either replace the pavement or leave in place in consideration of a payment deduction (per Section 2500). All core test to be taken during the placement of the asphalt or concrete paving. (See Section 02500)

7. Underground Utilities Testing

- A. Also see pertinent sections of Division 2 of these specifications.
- B. Compaction equipment shall be of the static type, vibrator type or a combination of both types. All areas shall be compacted to a minimum of 98% of the maximum density at its optimum moisture content +/- 2% using modified proctor density (ASTM D1557).
- C. Perform at least two tests in random backfill layers for every 400 linear feet of trench.

8. Concrete Inspecting and Testing

- A. Also see pertinent sections in Division 3 of these specifications.
- B. Portland cement:
  - 1. Secure from the cement manufacturer certificates of compliance delivered directly to the concrete producer for further delivery directly to the testing laboratory.
  - 2. Require the certificates of compliance to positively identify the cement as to production lot, bin or silo number, dating and routing of shipment, and compliance with the specified standards.
- C. Aggregate:
  - 1. Provide one test unless character of material changes, material is substituted, or additional test is requested by Menards
  - 2. Sample from conveyor belts or batching gates at the ready-mix plant;
    - a. Sieve analysis for conformance with specified standards and grading analysis
    - b. Specific gravity test for compliance with specified standards.
  - 3. **Inspect for reactive shale or coal aggregate in no case shall this be permitted (cherts).**
  - 4. **Supplier shall submit to owner a notarized letter guaranteeing that the concrete mix will not have any pop out problems. No concrete will be allowed on site without the guarantee.**
- D. Laboratory design mix:
  - 1. After approval of aggregate, and whenever character or source of materials is changed, provide mix design in accordance with ACI 613.
  - 2. Provide designs for all mixes prepared by a civil engineer who is licensed in the same state that the project is in.

E. Molded concrete cylinders:

1. Provide three test cylinders for each 150 cubic yards (or less, if required by governing agencies), or fraction thereof, of each class of concrete of each day's placement.
2. Test one cylinder at 7 days, one at 28 days, and one when so directed, but in no case later than 49 days.
3. **Report the mix, slump, age, date, location of concrete in the structure, and all test results.**
4. Take specimens and make tests in accordance with applicable ASTM Standard specifications.

F. Core tests:

1. If core tests for the building, yard area and or on exterior slabs Menard, Inc. will determine from testing reports.
2. Cut from locations directed by Menards securing in accordance with ASTM C42, and prepare and test in accordance with ASTM C39.
3. Using all required personnel and equipment, throughout progress of concrete placement verify that finished concrete surfaces will have the level or slope that is required by the contract documents.

9. Concrete Floor Flatness Test

A. **Perform flatness test on all concrete floors.**

Face Floor Flatness Number:

Specified Overall Value =  $F_F$  (SOV) 50

Minimum Local Value =  $F_F$  (MLV) 30

Face Floor Levelness Number:

Specified Overall Value =  $F_L$  (SOV) 39

Minimum Local Value =  $F_L$  (MLV) 20

1. Floor Tolerance Measurement.  $F_F$  and  $F_L$  tolerances shall be tested in accordance with ASTM E-1155. Actual overall F-numbers shall be calculated using the inferior/superior area method.
2. Timeliness of Floor Profile Tests & Reports. All floor tolerance measurements shall be made by the tester within 24 hours after slab installation. In all cases, tolerance measurements shall precede the removal of shores and forms. Results of all floor profile tests - including a running tabulation of the overall  $F_F$  and overall  $F_L$  values for all of the random-traffic slabs installed to date - shall be provided to the contractor within 48 hours after each slab installation.

B. **Submit results to Menards within 48 hours after the pour and 7 days prior to any floor covering installation.**

C. Retest all areas that are noncompliance after corrective measures have been taken.

10. Concrete Reinforcement Inspecting and Testing

A. Also see pertinent sections in Division 3 of these specifications.

B. Prior to use, test all reinforcement steel bars for compliance with the specified standards.

1. Material identified by mill test reports, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the testing laboratory for certifications.

2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

C. Provide continuous inspection for all welding of reinforcement steel.

11. Structural Steel Inspecting and Testing

A. Also see pertinent sections in Division 5 of these specifications.

B. Prior to use, test all structural steel for compliance with the specified standards.

1. Material identified by mill and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish heat number, mill analysis, and mill test reports to the testing laboratory for certification.

2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

C. Shop welding:

1. Provide qualified testing laboratory inspector if the shop fabricator is not licensed and approved by appropriate governing authorities.

2. On single pass welds, inspect after completion of welding and prior to painting.

3. On multiple pass welds with cover pass on the back side, provide continuous inspection.

D. Field welding: Provide continuous inspection by a qualified testing laboratory inspector, who is licensed and approved by appropriate governing authorities.



12. Waiver of Inspection and/or Test

- A. Specified inspections and/or tests may be waived only by the specific written approval of Menards, and such waivers will be expected to result in credit to the owner equal to normal cost of such inspection and/or test.

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

1. Description

- A. Temporary facilities and controls required for this work include, but are not necessarily limited to:

1. Temporary utilities such as heat, water, sewer, electricity and telephone, internet service to the job trailer;
2. Field office for the contractor's personnel including a plan table, chair, phone for Menards project manager;
3. Sanitary facilities;
4. Temporary construction such as tarpaulins, barricades, canopies, shoring and bracing;
5. Dust control;
6. Maintenance of traffic;
7. Dewatering;
8. Collection and disposal of waste;
9. Snow removal;
10. Debris removal from public roads;
11. Ventilation fans.

- B. Related work described elsewhere:

1. Requirements of other contract documents apply to the work of this section as fully as though repeated herein. These include, but are not necessarily limited to, General Conditions, Supplementary Conditions and pertinent portions of sections in Division 1 of these specifications.
2. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their own portions of the work is not part of this section.
3. Permanent installation and hook-up of the various utility lines are described in other sections.

- C. Contractor will be required to supply a computer with a camera and WIFI at the job trailer to utilize SKYPE capabilities as needed for job coordination meetings or communications as deemed necessary.

The requirements are as follows:

If Cellular:

- 4GLTE speeds
- Ability to do Wi-Fi with leap or WPA
- More than two bars of service
- Ability to do multiple devices connected to the network

If Cable/DSL

- Data speed at least 5Mbps
- Ability to do Wi-Fi with leap or QPA
- Ability to do multiple devices connected to the network

2. Utilities

A. Water:

1. Provide and pay for necessary temporary piping and water supply.

B. Electricity:

1. Provide and pay for necessary temporary wiring and power supply.
2. Provide area distribution boxes so located that the individual trades may furnish and use 100-foot maximum length extension cords to obtain power and lighting at points where needed for work, inspection and safety.
3. Provide temporary lighting for on and off site areas as may be required by governing agencies, or for proper and safe conditions throughout the progress of the work.
4. Contractor is responsible for all cost of electric until completion of contract and when Menards accepts the project as complete for fixturing. **Menards will pay the utility bills for the usage and invoice the contractor for these costs during the construction period.**

C. Heating:

1. Provide and maintain heat necessary for proper conduct of operations needed in the work until completion of contract and Menards accepts the project as complete for fixturing. **Menards will pay invoices for gas usage off our permanent meter and invoice the contractor for these costs during the construction period.**

2. Temporary heaters are the responsibility of the general contractor; in no case shall temporary heaters be placed so they recycle indoor air. Temporary units must be set up to bring in fresh air.

D. Ventilation:

1. General contractor to provide ventilation fans to maintain air quality in the building and prevent carbonization of the floor slab.

3. Field Offices and Storage

A. Contractor's facilities:

1. Provide a field office trailer and storage trailers adequate in size and accommodation for contractor's offices, supply and storage of materials supplied by Menard.
2. Within the contractor's facilities, provide enclosed space adequate for holding project meetings. Furnish with table, chairs and utilities. Provide a separate plan table and chair for Menards project manager.
3. Field trailer shall be equipped with wireless internet service. Contractors' job superintendent shall have a computer with e-mail and digital camera. All field reports with 6 digital photos shall be emailed to Menards Project Manager and Assistant Manager of Store Planning/Design/Construction at the end of each work day.
4. Contractor shall move field office operations inside the main building when Menards determines the move necessary. Field office trailer shall be removed from the site at same time. The field trailer shall not remain on the site once the fixture phase begins.

B. Sanitary facilities:

1. Provide temporary sanitary facilities in the quantity required for use by all personnel. Maintain in a sanitary condition at all times.

C. Drinking water:

1. Provide clean drinking water in an adequate amount for all job personnel.

4. Temporary Construction

- A. Provide and maintain for the duration of construction all scaffolds, enclosures, tarpaulins, canopies, warning signs, steps, platforms, bridges and other temporary construction necessary for proper completion of the work in compliance with pertinent safety or other regulations conforming with all governing jurisdictions.

- B. Structural design of all items used in the construction of the building and not a permanent part thereof, including but not necessarily limited to, shoring and bracing for concrete, masonry work, earth work and like items, hoisting devices, and the temporary bracing for structural steel and like items is the sole responsibility of the contractor. All such items shall conform to requirements of governing codes.
  - D. Install project signs, outlots signs, etc. supplied by Menards
    - 1. Install in a visible location as directed by owner using a minimum of 2 treated 4 x 4 post imbedded a minimum of 3' below grade.
    - 2. Remove signage at end of project as directed.
5. Project Security
- A. Provide such watchmen, patrols, fencing, locked storage and other security means as are required to adequately protect the work, to protect materials stored at the site of the work and elsewhere and to protect the interests of the contractor, Menards, and all other parties having such interest, until completion of the work and its acceptance by Menards
  - B. Menards will not assume any responsibility for the loss of, or damage to, materials, tools, appliances or work arising from acts of theft, vandalism, malicious mischief or other causes. All Menard supplied materials lost or damaged will be the contractors' responsibility to replace.
6. Dust Control
- A. Provide effective means of dust control both within the structure and on the surrounding site.
7. Maintenance of Traffic
- A. Maintain traffic on all streets adjacent to or leading to the site. Where construction operations interfere with the free movement of traffic, provide traffic controls, flagmen or similar devices to efficiently control traffic movement as required by local governmental agencies.
8. Dewatering
- A. Furnish and maintain all pumps or other dewatering devices which may be required by this work. Contractor will not look to Menards for extra cost for dewatering.
9. Collection and Disposal of Waste

- A. Collect waste from construction areas and elsewhere daily. Handle hazardous, dangerous or unsanitary waste materials separately from other waste by containerizing properly. Dispose of all waste material in a lawful manner. Including materials from contractors directly hired by Menards
10. Snow Removal
- A. Contractor to provide adequate snow removal for site access including frontage roads, etc. to perform work.
  - B. Prior to store fixturing or as directed by Menards, plow all parking lot, yard and road areas. Pile snow in areas directed by Menards as many times as needed. Spread concrete safe de-icer to remove ice if required. This applies to all paved areas and exterior concrete. All debris must be removed from the snow. Any remaining debris will be the responsibility of the general contractor.
  - C. Snow removal from roof deck will be the responsibility of the general contractor. General contractor is to provide adequate manpower and equipment to remove snow without delaying the roofing installation.
11. Temporary heat and ventilation to maintain proper temperature and air quality for all work.
12. Generators
- A. Contractor to provide and maintain generators under the requirements of the contract documents for whatever means necessary to complete the work.
  - B. Contractor to provide fuel for any generators.
  - C. All associated generators costs (rental maintenance, fuel, etc.) will be the sole responsibilities of the contractor.

## SECTION 01700

### PROJECT CLOSE-OUT

1. Substantial Completion
- A. Before requesting inspection for certification of substantial completion, complete the following. List exceptions in the request.
    - 1. In the Application for Payment that coincides with, or first follows, the date substantial completion is claimed; show 100 percent completion for the portion of the work claimed as substantially complete. Include

supporting documentation for completion and a statement showing an accounting of changes to the contract sum.

- a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
2. Advise Menards of pending insurance change-over requirements.
3. Submit specifications warranties, workmanship bonds, maintenance agreements, final certifications and similar documents organized in manual form, 2 copies are required.
4. Obtain and submit releases enabling the owner unrestricted use of the work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
5. Deliver tools, spare parts, extra stock and similar items.
6. Complete start-up testing of systems and instruction of the owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups and similar elements.
7. Complete final clean up requirements, including touch up painting. Touch up and otherwise repair and restore marred exposed finishes.
8. Complete management training and sign off form.
9. **COMPLETE STORE PLANNING/CONSTRUCTION CLEANING CHECKLIST WHICH IS LOCATED AT THE END OF THIS SECTION.**

## 2. Final Acceptance

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
  1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certifications of insurance for products and completed operations where required.
  2. Submit an updated final statement, accounting for final additional changes to the contract sum.
  3. Submit a certified copy of the Menards final inspection list of items has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the architect.
  4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of substantial completion or when the owner took possession of and responsibility for corresponding elements of the work.
  5. Submit consent of surety to final payment.
  6. Submit a final liquidated damages settlement statement.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
8. Verify that all bonds have been submitted to Menards

3. Close-out Procedures

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the owner's personnel to provide instruction to proper operation and maintenance. If installers are not experienced in procedures, provide instructions by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.
13. Management training form.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

C. Operating and maintenance manual and warranty item requirements:

1. Submit two 3 ring binders and CD ROM.
2. Have project label on front cover and contractor name.
3. O&M Manuals must be complete and ready for store management when they arrive on site. They should be placed on the general manager's desk. When the general manager arrives, time should be made to show them the

book. \$100 per day price will be enforced for each day the store general manager is without his closeout O&M manuals.

4. Contents of Operation and Maintenance Manual to include but not limited to:

- a. Final list of subcontractors, sub-subcontractors and principal vendors including addresses and phone numbers.
- b. Letter from general contractor title "Warranty for General Contracting".
- c. Copy of Warranty Bond.
- d. "Excavation/Sanitary/Storm/Paving" - include utility as-built drawings on CD Rom.
- e. "Concrete Flat Work".
- f. "Structural Steel Erection".
- g. "Light Gauge Framing/Drywall/Acoustical".
- h. "Ceramic Tile".
- i. "Painting" - including products and mix specifications.
- j. "E.F.I.S.".
- k. "Fencing".
- l. "Fire Protection" - including as-built drawings on CD Rom, cut sheets on all materials, test results and certifications.
- m. "Plumbing" - including as-built drawings and cut sheets on all materials supplied on CD Rom.
- n. "Electrical" - including as-built drawings and schedules on CD Rom.
- o. "Landscaping" - including installed plant material list, landscape bond.
- p. "Masonry".
- q. "Garden Center Bi-Fold Doors"
- r. "Overhead Doors/Loading Dock Equipment".
- s. "Dock Levelers".
- t. "Caulking" - including cut sheets on materials installed.
- u. "Carpentry".
- v. "Automatic Irrigation System" - including as-built drawings on CD Rom.
- w. "Sound System" – include all product data.
- x. "Security System".
- y. "Fire Alarm System".

Tab each one of the divisions with the name in quotes. Also include warranty for each one.

- D. Stormwater Log Book submitted to Store Management and complete with up to date inspection reports, SWPPP map and logs, etc.
- E. List of required As-builts to submit on CD ROM. Use this list of general requirement, however, discuss final list of plans with Menard project manager.



#### 4. Final Cleaning

- A. General: General cleaning during construction is required by the general conditions and included in section “Temporary Facilities”.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer’s instructions.
  - 1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
    - a. Remove labels that are not permanent labels.
    - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
    - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Vacuum carpeted surfaces. Scrub tiled floor areas and concrete floors. Clean all light shields and lenses. (High bay lights and lenses by others).
    - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
    - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
    - f. Any areas left unclean will be cleaned by Menards at contractors’ expense.
    - g. If high bay light fixtures and lenses have excessive dust, fingerprints etc. it will be the contractors responsibility to clean off. Use gloves to prevent fingerprints during cleaning.

## **New Store As-Built Drawings**

<b><u>Plans</u></b>	<b><u>Label As:</u></b>
Civil Plans	Civil Plans
MS1	Site Concrete Plan
L1, L2, etc.	Landscape Plans
E1	Site Electrical Plan
E4	Electrical Panel Schedule Plan
EL-1A	Electrical Floor Plan
EL-1B	Electrical Drop/Overhead Plan
EL-4	Underground Fiber Optic, Phone CATS and Computer CATS
EL-5A and EL5B	Overhead Fiber, Phone, Computer CCTV Plan
SEC1	Overhead Burglar Alarm Plan (Include Zone Listing)
FPE 1, FPE 2, etc.	All Fire Alarm Plans (Include Zone Listing)
P2 & P3	Plumbing Plans
Irrigation	Irrigation Plans/Product Data from Subcontractor
Fire Protection Subcontractor	All Fire Sprinkler Plans/Product Data from Menard Inc
Menards Product Data:	All Contract Cut Sheets and Product Data

**NOTE:** The file cannot be larger than 9,600 KB. If so, it will not upload onto MyMenards. Due to this, some of the files may have to change. Accommodate it as needed.

**Change Order****AIA Document G701 –**

OWNER	[ ]
ARCHITECT	[ ]
CONTRACTOR	[ ]
FIELD	[ ]
OTHER	[ ]

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES; CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION OR MODIFICATION. AUTHENTICATION OF THIS ELECTRICALLY DRAFTED AIA DOCUMENT MAY BE MADE BY USING AIA DOCUMENT D401

**PROJECT:**

(name, address)

**PROJECT NUMBER:****CHANGE ORDER NUMBER:****TO CONTRACTOR:**

(name, address)

**DATE:****PROJECT NUMBER:****CONTRACT DATE:****ATTENTION:***The Contract is changed as follows:***CONTRACT FOR:**

---

***Not valid until signed by the Owner, Architect and Contractor.***

---

The original (Contract Sum)(Guaranteed Maximum Price) was	\$
Net change by previously authorized Change Orders	\$
The (Contract Sum)(Guaranteed Maximum Price) prior to this Change Order was	\$
The (Contract Sum)(Guaranteed Maximum Price) will be (increase)(decreased)	
(unchanged) by this Change Order in the amount of	\$
The new (Contract Sum)(Guaranteed Maximum Price) including this Change Order will be	\$

*The Contract Time will be (increased)(decreased)(unchanged) by ( ) days.**The date of Substantial Completion as of the date of this Change Order therefore is*

**NOTE: This summary does not reflect changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive.**

ARCHITECT	CONTRACTOR	OWNER
Address	Address	Address
BY	BY:	MENARD, INC. BY:
DATE	DATE	DATE

AIA DOCUMENT G701 – CHANGE ORDER – 1987 EDITION – AIA – COPYRIGHT 1987 – THE AMERICAN INSTITUTE OF ARCHITECTS, 1725 NEW YORK AVENUE, N.W., WASHINGTON, D.C., 20006-5292.. WARNING: Unlicensed photocopying violates U.S. copyright laws and is subject to legal prosecution. This document was electronically produced with permission of the AIA and can be reproduced without violation until the date of expiration as noted below.

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Menards

Request for Information

DATE: \_\_\_\_\_ RFI NO: \_\_\_\_\_

TO: Fax (715) 876-2423 PROJECT: \_\_\_\_\_  
(City, State)

FROM: \_\_\_\_\_  
(General Contractor)

\_\_\_\_\_  
(Project Superintendent) SPECIFICATION SECTION: \_\_\_\_\_

\_\_\_\_\_  
(Job Site Fax Number) DRAWING/DETAIL: \_\_\_\_\_

INFORMATION REQUESTED: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Requested By: \_\_\_\_\_ Request has been reviewed by Menards  
Project Manager. ☐ YES ☐ NO

REPLY: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Menards response shall not be considered as a Change Order or Change Directive, nor does it authorize Changes in the Contract Sum or Contract Time.

**DAILY REPORT FORM**

DATE:

JOB #

WEATHER: CLEAR OVERCAST RAIN SNOW WIND

JOB NAME: \_\_\_\_\_

TEMP: LOW \_\_\_\_\_ HIGH \_\_\_\_\_

SUPERINTENDENT: \_\_\_\_\_

Certified SWPPP Inspector \_\_\_\_\_

TRADE	FIRM NAME	NO. EMP.	WORK PERFORMED/AREA WORK PERFORMED TODAY	EQUIPMENT	HOURS
Super.					
Labor					
Excavation					
Sitework					
Utilities					
Landscape					
Paving					
Site Conc.					
Concrete					
Masonry					
Rebar					
Steel					
Rough Carp.					
Fin. Carp.					
Seal/Insul.					
Roofing					
Doors/HM					
Alum. Frame					
Drywall					
Painting					
Ceiling					
Flooring					
HVAC					
Sprinkler					
Plumbing					
Electrical					
Equipment					

1. Materials received today: \_\_\_\_\_
2. Extra Work or backcharge work performed and who authorized it: \_\_\_\_\_
3. Inspections: \_\_\_\_\_
4. Stormwater Log Book up to Date: \_\_\_\_\_
5. Safety: Injuries, Issues: \_\_\_\_\_
6. Is project on schedule \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Days (Behind) (Ahead) \_\_\_\_\_
7. List problems causing delays: \_\_\_\_\_
7. Additional comments/occurrences, verbal instructions, owner requests, etc. \_\_\_\_\_

SUPERINTENDENT'S SIGNATURE: \_\_\_\_\_ if additional space is required, use &amp; attach a separate sheet.

CERTIFIED SWPPP INSPECTOR SIGNATURE \_\_\_\_\_

CONTRACTOR PROGRESS MEETING # \_\_\_\_\_  
CONTRACTORS NAME AND ADDRESS

Project: \_\_\_\_\_

Date: \_\_\_\_\_

Next Meeting Date: \_\_\_\_\_

Location: \_\_\_\_\_

In Attendance

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Not In Attendance

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Distribution of Meeting Minutes

Safety:

Schedule:

SWPPP:

Old Business:

Item #	Action Req.'d By	Description

New Business:

Item #	Action Req.'d By	Description

Request for Information:

Insurance Certificate:

Schedule:

Payment Issues:

Submittal Log:

General:

Site Work:

Concrete:

Masonry:

Structural Steel:

Carpentry:

Thermal Moisture Protection:

Doors & Windows:

Finishes:

Specialties:

Equipment:

Mechanical:

Electrical:

TO OWNER: PROJECT: APPLICATION NO.: DISTRIBUTION TO:  
 FROM CONTRACTOR: VIA ARCHITECT PERIOD TO: ☐ OWNER  
 PROJECT NOS.: ☐ ARCHITECT  
 CONTRACT DATE: ☐ CONTRACTOR

CONTRACT FOR: The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown hereto is now due.

CONTRACTOR: \_\_\_\_\_ Date: \_\_\_\_\_

1. ORIGINAL CONTRACT SUM ..... \$

2. Net change by Change Orders ..... \$

3. CONTRACT SUM TO DATE (Line 1 + 2) ..... \$

4. TOTAL COMPLETED & STORED TO DATE ..... \$  
 (Column G on G703)

5. RETAINAGE:  
 a. % of Completed Work ..... \$  
 (Column D + E on G703)  
 b. % of Stored Material ..... \$  
 (Column F on G703)  
 Total Retainage (Line 5a + 5b or Total in Column I of G703) ..... \$

6. TOTAL EARNED LESS RETAINAGE ..... \$  
 (Line 4 less Line 5 Total)

LESS PREVIOUS CERTIFICATES FOR PAYMENT  
 (Line 6 from prior Certificate) ..... \$

7. CURRENT PAYMENT DUE ..... \$

8. BALANCE TO FINISH, INCLUDING RETAINAGE  
 (Line 3 less Line 6) ..... \$

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
if approved this Month		
TOTALS		
NET CHANGES by Change Order		

### CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract, Continuation Sheet, AIA Document G703, is attached.

### ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the work has progressed as indicated, the quality of the work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the amount certified.

AMOUNT CERTIFIED ..... \$  
 (Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT  
 By: \_\_\_\_\_ Date: \_\_\_\_\_  
 This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

**WAIVER OF LIEN TO DATE**

STATE OF \_\_\_\_\_ )  
 )ss.  
COUNTY OF \_\_\_\_\_ )

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by \_\_\_\_\_ to furnish \_\_\_\_\_ for the premises known as \_\_\_\_\_ of which Menard, Inc. is the owner.

The undersigned, for and in consideration of \_\_\_\_\_ (\$ \_\_\_\_\_) Dollars and other good and valuable considerations, the receipt whereof is hereby acknowledged, do(es) hereby waive and release any and all lien or claim of, or right to, lien, under the statutes of the State of \_\_\_\_\_, relating to mechanic's liens, with respect to and on said above-described premises, and the improvements thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of all labor, services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises, INCLUDING EXTRAS.\*

DATE \_\_\_\_\_ COMPANY NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
\_\_\_\_\_

**SIGNATURE AND TITLE** \_\_\_\_\_

\*EXTRAS ARE LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT

**CONTRACTOR'S AFFIDAVIT**

STATE OF \_\_\_\_\_ )  
 )ss.  
COUNTY OF \_\_\_\_\_ )

TO WHOM IT MAY CONCERN:

THE UNDERSIGNED, \_\_\_\_\_ BEING DULY SWORN, DEPOSES  
AND SAYS THAT HE OR SHE IS \_\_\_\_\_ OF \_\_\_\_\_  
WHO IS THE CONTRACTOR FURNISHING \_\_\_\_\_ WORK ON THE BUILDING  
LOCATED AT \_\_\_\_\_ OWNED BY MENARD, INC.

That the total amount of the contract including extras\* is \$ \_\_\_\_\_ on which he or she has received payment of \$ \_\_\_\_\_ prior to this payment. That all waivers are true, correct and genuine and delivered unconditionally and that there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses of all parties who have furnished material or labor, or both, for said work and all parties having contracts or sub contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to become due to each, and that the items mentioned include all labor and material required to complete said work according to plans and specifications:

NAMES & ADDRESSES	WHAT FOR	CONTRACT AMOUNT	CHANGE ORDERS	AMOUNT PAID	THIS PAYMENT	BALANCE DUE

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE \_\_\_\_\_ SIGNATURE \_\_\_\_\_

SUBSCRIBED AND SWORN TO BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, \_\_\_\_\_

\*EXTRAS ARE LIMITED TO CHANGE ORDERS,  
BOTH ORAL AND WRITTEN, TO THE CONTRACT.

My Commission Expires: \_\_\_\_\_  
NOTARY PUBLIC



STATE OF  
COUNTY OF

FINAL WAIVER OF LIEN

TO WHOM IT MAY CONCERN

WHEREAS the undersigned has been employed by \_\_\_\_\_ to furnish  
\_\_\_\_\_ for the premises known as  
\_\_\_\_\_ of which Menard, Inc. is the owner.

THE undersigned, for and in consideration of \_\_\_\_\_ (\$\_\_\_\_\_) and other good and valuable considerations, the receipt whereof is hereby acknowledged, do(es) hereby waive and release any and all lien or claim of, or right to, lien, under the statutes of the State of \_\_\_\_\_, relating to mechanic's liens, with respect to and on said above-described premises, and the improvements thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of labor services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises.

Given under my hand and seal on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Signature and Title \_\_\_\_\_

NOTE: All waivers must be for the full amount paid. If waiver is for a corporation, corporate name should be used, corporate seal affixed and title of officer signing waiver should be set forth; if waiver is for a partnership, the partnership name should be used, partner should sign and designate himself as partner.

CONTRACTOR'S AFFIDAVIT

STATE OF  
COUNTY OF

TO WHOM IT MAY CONCERN:

The undersigned, being duly sworn, deposes and says that he is \_\_\_\_\_ of the  
\_\_\_\_\_ who is the contractor for the \_\_\_\_\_ owned by Menard, Inc. That the  
work on the building located at \_\_\_\_\_ total amount of the contract including extras is \$\_\_\_\_\_ on which he has received payment of  
\$\_\_\_\_\_ prior to this payment. That all waivers are true, correct and genuine and delivered  
**unconditionally** and that there is no claim either legal or equitable to defeat the validity of said waivers. That the following are  
the names of all parties who have furnished material or labor, or both, for said work and all parties have contracts or  
subcontracts for specific portions of said work or for material entering into the construction there of and the amount due or to  
become due to each, and that the items mentioned include all labor and material required to complete said work according to  
plans and specifications.

Names	What For	Contract Price	Amount Paid	This Payment	Balance Due

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Subscribed & sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Signature: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_  
NOTARY PUBLIC



## SCHEDULED VALUES CHANGE FORM

**PROJECT :**  
(name, address )

Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**CONTRACTOR:**  
(name, address )

**NOTE** : THIS IS NOT A CHANGE ORDER DOCUMENT.

This form must accompany all payment requests which propose changes in the total contract price due sub contractors, which DO NOT change the total contract price negotiated with the OWNER.

The amounts due sub contractors are changed as follows:

Contractor Name	Original Contract Amount	Revised Contract Amount	Reason for the change in Contract Value
	\$	\$	

The undersigned acknowledges that the above changes in contract value are correct, that these changes accurately reflect the dollar amounts due the sub contractors shown above, and that these revised contract values are now established for all subsequent payment requests and corresponding lien waivers until such time as Owner is notified otherwise in writing.

STATE OF \_\_\_\_\_ )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

By: \_\_\_\_\_

Title: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

My Commission Expires \_\_\_\_ / \_\_\_\_ / \_\_\_\_

## SCHEDULED VALUES CHANGE FORM

**PROJECT :**  
(name, address )

Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**CONTRACTOR:**  
(name, address )

**NOTE :**      THIS IS NOT A CHANGE ORDER DOCUMENT.

This form must accompany all payment requests which propose changes in the total contract price due sub contractors, which DO NOT change the total contract price negotiated with the OWNER.

The amounts due sub contractors is changed as follows:

Contractor Name	Original Contract Amount	Revised Contract Amount	Reason for the change in Contract Value
_____	\$ _____	\$ _____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The undersigned acknowledges that the above changes in contract value are correct , that these changes accurately reflect the dollar amounts due the sub contractors shown above, and that these revised contract values are now established for all subsequent payment requests and corresponding lien waivers until such time as Owner is notified otherwise in writing.

STATE OF _____ )	By: _____
) ss.	Title: _____
COUNTY OF _____ )	

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
My Commission Expires \_\_\_\_ / \_\_\_\_ / \_\_\_\_

## AFFIDAVIT OF TOTAL RELEASE AND CERTIFICATION OF ALL BILLS PAID

THE UNDERSIGNED hereby certifies that he (or she) has examined and is authorized and empowered to execute this Affidavit as the owner, partner, or officer as the case may be, of the contractor named below (the "Contractor") employed in connection with the construction project (the "Project") mentioned below.

In consideration for the full and final payment to the Contractor for all service in connection with the project, the receipt and adequacy of which are hereby acknowledged, the Contractor hereby releases and waives all liens and claims to liens which the Contractor may have on or affecting the Project or Project property as a result of the Contractor's contract(s) for the Project or for performing labor and/or furnishing materials that are in any way connected with any construction of any building(s) or improvement(s) for the Project whether on the Project property or elsewhere. The Contractor further certifies and warrants that all subcontractors of labor and/or materials supplied to, for, through or at the direct or indirect request of the Contractor and/or subcontractor.

1. \_\_\_\_\_  
(Print or type the firm or individual name of the Contractor)
2. \_\_\_\_\_  
(Print or type the Contractor's address)
3. \_\_\_\_\_  
(Print or type the name of the person signing for the Contractor)
4. \_\_\_\_\_  
(Print or type the position of the person signing for the Contractor)
5. Description of the Project (use an additional page, if necessary):
6. Date that the Project was totally completed: \_\_\_\_\_

The undersigned certifies that the foregoing information is true and correct and acknowledges that the owner of the Project has placed a material reliance on such information in directing final payment to the Contractor.

EXECUTED this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
(To be signed by the person shown in item 3 above)

Subscribed and sworn before me this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Notary Public: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

PERFORMANCE BOND  
Exhibit "A"

KNOW ALL MEN BY THESE PRESENTS, That \_\_\_\_\_ (hereinafter called the "Principal"), as Principal and \_\_\_\_\_ a corporation, duly authorized to do business in \_\_\_\_\_, (hereinafter called the "Surety"), are held and firmly bound unto Menards (hereinafter called the "Obligee"), and its representatives, successors and assigns, in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), for payment of which sum well and truly to be made the said Principal and Surety bind themselves, and their respective heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has been awarded a contract with Obligee for \_\_\_\_\_ (hereinafter called the "Contract") and which contract is hereby referred to and incorporated by express reference as if fully set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal shall well and truly perform all the work, undertakings, covenants, terms, conditions and agreements of said contract within the time provided therein and any extensions thereof that may be granted by Obligee, and during the life of any maintenance obligation, guaranty or warranty required under said Contract, and shall also well and truly perform all the undertakings, covenants, terms, conditions and agreements of any and all modifications of said Contract that may hereafter be made, and shall indemnify and save harmless said Obligee of and from any and all loss, damage and expense, including costs and attorneys' fees, which the said Obligee may sustain by reason of Principal's failure to do so, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The said surety agrees that no change, extension of time, alteration, addition, omission, waiver, or other modification of the terms of either the said Contract or in the said work to be performed, or in the specifications, or in the plans, or in the contract documents, or any forbearance on the part of either the Obligee or Surety to the other, shall in any way affect said Surety's obligation on this Bond, and said Surety does hereby waive notice of any such changes, extensions of time, alterations, additions, omissions, waivers, or other modifications.

The parties executing this Bond on behalf of Principal and Surety represent and warrant that they are duly authorized to bind the Principal and Surety respectively.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ the name and corporate seal of each corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SURETY: \_\_\_\_\_

PRINCIPAL: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
(Surety's Address)

\_\_\_\_\_  
(Principal's Address)

Witness:

Witness:

\_\_\_\_\_  
or Secretary's Attest

\_\_\_\_\_  
or Secretary's Attest

[SEAL]

[SEAL]

PAYMENT BOND  
Exhibit "A"

KNOW ALL MEN BY THESE PRESENTS, That \_\_\_\_\_ (hereinafter called the "Principal"), as Principal and \_\_\_\_\_ a corporation, duly authorized to do business in \_\_\_\_\_, (hereinafter called the "Surety"), are held and firmly bound unto Menards (hereinafter called the "Obligee"), and its representatives, successors and assigns, in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), for payment of which sum well and truly to be made the said Principal and Surety bind themselves, and their respective heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has been awarded a contract with Obligee for \_\_\_\_\_ (hereinafter called the "Contract") and which contract is hereby referred to and incorporated by express reference as if fully set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall promptly make payment in full to all persons or entities supplying labor, material, supplies, services, utilities and equipment in the prosecution of the work provided for in said Contract and any and all modifications of said Contract that may hereafter be made, and shall indemnify and save harmless said Obligee of and from any and all loss, damage and expense, including costs and attorneys' fees, which the said Obligee may sustain by reason of Principal's failure to do so, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The said surety agrees that no change, extension of time, alteration, addition, omission, waiver, or other modification of the terms of either the said Contract or in the said work to be performed, or in the specifications, or in the plans, or in the contract documents, or any forbearance on the part of either the Obligee or Surety to the other, shall in any way affect said Surety's obligation on this Bond, and said Surety does hereby waive notice of any such changes, extensions of time, alterations, additions, omissions, waivers, or other modifications.

The said Principal and the said Surety agree that this Bond shall inure to the benefit of all persons or entities as supplying labor, material, supplies, services, utilities and equipment in the prosecution of the work provided for in said Contract, as well as to the Obligee, and that any of such persons or entities may maintain independent actions upon this Bond in the name of the person or entities bringing any such action.

The parties executing this Bond on behalf of Principal and Surety represent and warrant that they are duly authorized to bind the Principal and Surety respectively.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SURETY: \_\_\_\_\_

PRINCIPAL: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
(Surety's Address)

\_\_\_\_\_  
(Principal's Address)

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

\_\_\_\_\_  
or Secretary's Attest

\_\_\_\_\_  
or Secretary's Attest

[SEAL]

[SEAL]

**CONTRACTOR  
SUBMITTAL LOG -  
WEEK \_\_\_\_\_  
(Updated and  
Submitted Weekly  
by Contractor to  
Menards)**

Date: \_\_\_\_\_

Project: \_\_\_\_\_ Superintendent: \_\_\_\_\_ Cell: \_\_\_\_\_

Contractor: \_\_\_\_\_ PM: \_\_\_\_\_ Cell: \_\_\_\_\_

[illegible]



**CONTRACTOR  
SUBMITTAL LOG -  
WEEK \_\_\_\_\_  
(Updated and  
Submitted Weekly  
by Contractor to  
Menards)**

Date: \_\_\_\_\_  
Project: \_\_\_\_\_ Superintendent: \_\_\_\_\_ Cell: \_\_\_\_\_  
Contractor: \_\_\_\_\_ PM: \_\_\_\_\_ Cell: \_\_\_\_\_

[illegible]

Date: \_\_\_\_\_

Project Week # \_\_\_\_\_

Days Ahead/Behind Schedule: \_\_\_\_\_

Project Location: \_\_\_\_\_

## SAMPLE CONSTRUCTION SCHEDULE MENARDS PROTO V

[illegible]

## CHANGE ORDER LOG FORM

Project:

Contractor:

[illegible]

## DIVISION 2

### SITEWORK

#### SECTION 02000

##### 1. General

- A. Work includes site grading, underground utilities, paving, site restoration and incidental items related to the project as shown and as specified within the Contract Documents.
- B. Construction limits shall be within Owner's property boundaries and construction easements as shown on drawings.
- C. Refer to the grading plans and specifications for additional requirements.
- D. The bid documents shall include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

##### 2. Abbreviations

ANSI - American National Standards Institute  
ASTM - American Society for Testing and Materials  
AWWA - American Water Works Association  
NFPA - National Fire Protection Association

##### 3. Definitions

- A. References to: State and Local Department of Transportation, Sewer and Water Construction Code, etc., per region.

##### 4. Permits & Codes

- A. Owner will file Notice of Intent to grade over 1 acre and 5 acres.
- B. Contractor shall provide all other necessary licenses and permits and pay all fees, taxes and royalties, unless otherwise indicated. Contractor shall comply with all local and municipal ordinances and applicable state and national codes.

- C. Contractor will verify with the Civil Engineer of Record that all permits necessary for construction are received prior to starting.

5. Surveys

- A. Contractor will provide baseline reference points and benchmarks as indicated on drawings. Contractor shall provide all other survey staking and layout as required to complete the work. Contractor shall verify the location and elevation of existing utilities and topographical features and field-verify prior to construction. The contractor shall immediately notify the engineer and Menards of any discrepancies or variations from drawings. Refer to the Menards site plan for most current horizontal site dimensions and layout.
- B. On pre-graded sites, contractor shall verify and accept grades prior to disturbing any material and report any discrepancies within 7 days or accept the site as is.

6. Design Requirements

- A. Concrete: All cast in place concrete shall be in compliance with Section 03300, cast in place concrete, Menards general construction specifications and all drawings contained within the civil engineering and Menards general construction prints pertaining to cast in place concrete.
- B. Asphaltic Concrete: Contractor shall comply with all asphaltic pavement design requirements as described in Section 02500, Paving & Base, Menards general construction specifications, all drawings and specifications contained within the civil engineering and Menards general construction prints pertaining to asphaltic paving as well as any minimum requirement stated in the geotechnical soils evaluation report. Contractor shall refer to the asphaltic concrete pavement section in this specification for minimum asphaltic design requirements. All mix designs (binder course, wearing course) shall be submitted to Menards for final approval prior to any paving activity.

7. Testing

- A. Owner shall arrange and pay for soil, base course, asphalt and concrete sampling and testing as required by the Contract Documents and specifications. Where material does not conform to type or density specified, it shall be replaced or reworked to conform. Cost of extra tests for reworked areas shall be paid for by Contractor (see Section 01410 of the general specifications).
- B. Contractor shall arrange and pay for testing and pipe lines as specified in Section 02700, Underground Utilities.

8. Verification of Conditions

- A. Contractor shall verify grades, lines, levels, locations and dimensions as shown and inspect surfaces that are to receive work before proceeding. Contractor shall be solely responsible for accuracy of measurements and layout out of its work and shall notify owner in writing in case of unsuitable conditions, defective substrates or discrepancies in contract documents. Starting of work shall imply acceptance of conditions.
9. Protection
- A. Contractor shall protect improvements on site and on adjoining properties. The contractor shall take all precautions necessary to avoid property damage to adjacent properties during the construction phases of this project. The contractor will be held solely responsible for any damages to the adjacent properties for the duration of the project. Provide barricades, covering or other types of protection as necessary to prevent damage and to safe guard against injury. Restore to original condition any improvements damaged by work or improvements, which required temporary removal during construction.
  - B. Miscellaneous Removals and Replacements: Temporary removal, storage and replacement of street signs, traffic control signs, mailboxes, fences and miscellaneous items shall be performed by contractor and shall be considered incidental to the project as a whole.
10. Traffic Control
- A. Contractor shall furnish and maintain construction barricades and traffic control devices when working on public or private streets. Barricades and traffic control devices shall comply with the State Department of Transportation Manual on Uniform Traffic Control Devices governing this particular project site.
11. Utilities
- A. Contractor shall notify all utilities that might have facilities within the project area at least three working days in advance of starting construction. Have underground facilities located and flagged prior to beginning work.
  - B. Contractor shall provide conduit/wire as needed or required by the electric, gas, phone, TV or fiber optic utility.

## SECTION 02010

### SUBSURFACE INVESTIGATION

#### 1. Subsurface Soil Data

- A. A preliminary foundation (soils) investigation report has been prepared for this project. The report was obtained in order to describe the subsurface characteristics of

the soils and recommended design and construction guidelines. Contractor is to conform to the recommendations made in this report.

- B. The Report is available to the contractor for general information, but is not a warranty of subsurface conditions.
- C. **Contractors should visit the site and acquaint themselves with existing conditions prior to bidding.**
- D. Prior to bidding or to start of the work, contractor may make his own subsurface investigations to satisfy himself as to site and subsurface conditions, but such investigations shall be performed only under time schedules and arrangements approved in advance by Menards
- E. Copies of the report along with any modifications thereto may be obtained from the soils engineer or Menards
- F. Inform Menards immediately of any conflicts between the Contract Documents and the report.
- G. **Any costs incurred by the contractor for removal of topsoil, rock excavation, dewatering, or the replacement of unsuitable materials shall be part of this contract and not the responsibility of Menards The contractor shall not look to or hold Menards responsible for said costs.**

## 2. Quality Assurance

- A. Whenever practical, the contractor shall hire the original soils engineer to perform the field soils testing and engineering work required by the Contract Documents.
- B. Re-adjust work performed that does not meet technical or design requirements, but make no deviations from the contract requirements without specific and written approval from Menards

## SECTION 02200

### EARTHWORK

#### 1. General

- A. The following are minimum requirements and shall govern, except that all local, state and federal codes and ordinances shall govern when their requirements are in excess hereof.
- B. Refer to grading plans and specifications for additional requirements.

- C. The contractor understands that any earthwork calculations, quantities or cross sections that have been furnished by the engineer are for information only and are provided without any guarantee by the owner or engineer whatsoever as to their sufficiency or accuracy. Contractor warrants that he has prepared his own calculations and cross sections to determine earthwork volumes needed to prepare his proposal and prices quoted herein are represented by the contractor as covering all costs to the owner for the work contemplated. No additional payment will be made for over runs do to contractors ambiguities, site conditions or weather.

2. Demolition

- A. Remove all existing buildings and structures, including all footings, foundation, concrete slabs, pavements and all other obstruction as required in accordance with the plans and special instructions.
- B. Abandon wells and septic systems if existing on site in accordance with applicable state and local codes.
- C. Properly dispose of all debris off the site.

3. Clearing & Grubbing

- A. Contractor shall remove trees, stumps, snags, brush, heavy growths of grass, weeds and other vegetation, improvements, rubbish and debris and obstructions that interfere with proposed construction; remove items only as necessary for completion of work.
- B. Contractor shall cut brush and vegetation flush with ground. Grub out stumps, roots having a diameter of 2" or larger and root clusters to a depth of at least 24" below subgrade elevation for pavements, structures and embankments and 6" below ground surface in other areas. Do not bury trees, brush or roots on site.
- C. Contractor shall properly dispose of all debris off the site.

4. Topsoil Stripping

- A. Contractor shall: (i) strip topsoil from project area to whatever depths encountered; (ii) prevent intermingling with underlying subsoil or other objectionable material; and (iii) remove heavy growths of grass from areas before stripping topsoil.
- B. The contractor shall stockpile topsoil so as not to interfere with building or utility construction. All surplus topsoil not required for site restoration shall become the property of the contractor and shall be disposed of off-site at no additional cost to owner.

5. Site Grading



- A. General: Grade site by cutting and filling to achieve lines and grades shown, less allowances for floor slabs, pavements and topsoil. Finish surface to be reasonably smooth and free from irregular surface changes. Tolerance for areas to receive slabs or pavements shall be 0.10 ft. above or below established subgrade. Tolerance for areas to receive topsoil shall be 0.30 ft. above or below established subgrade. Grading shall conform to the soil engineer's recommendations as outlined in the geotechnical evaluation report prepared for Menards
- B. All excavation, filling and compaction operations shall be observed by the soils engineer.
- C. Compact all subgrades to not less than the following percentages of maximum density, as determined by ASTM D1557.
  - 1. Under structures, concrete slabs, paved areas, curbs and walks compact top 12 inches of subgrade and each layer of backfill or fill material at 98% of the maximum density.
  - 2. Under lawn or unpaved areas, compact top 6 inches of subgrade and each layer of backfill or fill material at 90% of the maximum density.
  - 3. Under footings compact soil to at least 98% of the maximum density.
  - 4. Submit all results to Menards within 24 hours of testing.
  - 5. Compaction and topsoil or stone placement for the electric, gas, phone, etc. utility service trenches, is the general contractors responsibility.
- D. Unsuitable Materials: Excavate organic, frozen, wet, soft and loose soils, boulders and other unsuitable materials from beneath proposed buildings and pavements.
- E. Subgrade: Prior to fill operations, all areas within the building and pavement areas that are to receive fill shall be proof-rolled and all unstable material shall be removed or stabilized in place, and then compacted to a minimum of 98% of the maximum density to a minimum depth of 12 inches.

The contractor shall provide a loaded axle truck with a minimum gross weight of 25 tons. The contractor shall provide a weight ticket for the test roll vehicle to the engineer during the test roll. The test rolling shall be done in the presence of the soils engineer. Menards may require test rolling of the aggregate base, once the base section has been constructed. Test rolling (including all repairs to unstable sections and retesting) will be considered to be incidental work with no further added compensation made.

The contractor will be required to use every means possible to provide a stable subgrade prior to placement of the stone aggregate base. The contractor may be required to work material with a blade and disc below the upper 12" of subgrade material to a point 3' - 0" below subgrade elevation to insure a stable subgrade.

- F. Exert caution to avoid disturbing soils over which foundations, structural fill and pavements are to be built.
- G. Fill: Suitable on-site cut material may be used for required fills (clay silt materials are not suitable). Provide additional off-site fill to bring site to required grade. Off-site fill materials shall be clean, granular soil with 100% passing a 6" sieve and maximum of 10% passing a #200 sieve. Fill materials shall be approved by geotechnical engineer.
- H. Place cohesive fill in proposed and future building areas in loose lifts 8" thick, at a moisture content of +/- 2% of optimum and compact to at least 98% of the maximum modified proctor density (ASTM D1557). Place non-cohesive fill in proposed and future building areas in loose lifts 8" thick and compact to at least 98% of the maximum modified proctor density. Place fill in pavement area in loose lifts 8" thick and compact to at least 98% of the maximum modified proctor density (ASTM D1557). Fill within landscaped area is to be placed in loose lifts up to 12" thick and compact to at least 90% of the maximum density.
- I. Place fill on a maximum 1 (V): 3 (H) slope: stop and bench fills if necessary.
- J. Place fill or backfill adjacent to structures in a manner to prevent damage and allow structures to assume loads gradually and uniformly, at approximately same rate on all sides.
- K. Perform all excavation work required to meet indicated subgrades. After completion of the excavation operation, the entire subgrade not receiving fill material shall be proof-rolled as described previously, and all unstable material shall be removed or stabilized in place, and then compacted to a minimum of 98% of the maximum density to a minimum of 12 inches.
- L. When wet excavation is encountered, the excavated area shall be dewatered and kept free of water. Provide a permanent subdrainage system if necessary. All saturated material shall be removed. Cost for dewatering will be incidental to the work.
- M. Dewatering: Perform site grading in a manner to prevent surface water and ground water from flowing into work area. Promptly remove water from excavations using pumps, sumps and dewatering system components necessary to convey water away from excavations. If underground springs or drain tile are encountered, notify geotechnical engineer before proceeding. Convey water removed from excavations and rain water to collection or run-off areas. Provide and maintain temporary drainage and other diversions. Do not use foundation or utility trench excavations as temporary drainage ditches.
- N. The installation of a gravel road for access to the building pads shall be the joint responsibility of the grading and building contractors.

- O. Remove any wet or frozen material in the building pad area prior to placement of stone under slab base. Any additional stone base required because of removal of wet material will be considered incidental and will not be cause for extra payment.
  - P. **Supply, place and compact a minimum of 8 inches of stone for under slab base within the building area with 100% passing through a 1½" sieve, 95% passing a 1" sieve, 75% passing a ½" sieve, 40% passing a No. 4 sieve, 25% passing a No. 16 sieve and 8% passing a No. 200 sieve. Testing engineer will take 10 random test to verify in place thickness, prior to placement of the concrete floor slab.**
6. Topsoil
- A. Contractor shall place and compact topsoil in landscaped areas to a minimum depth of 6 inches, unless noted otherwise. Grade shall be reasonably smooth and free of irregularities.
  - B. All areas to be covered with topsoil shall be undercut or under filled to such a degree that when covered to the required depth with topsoil the finished work will be in accordance with the required lines, grades, slopes and cross sections. All areas to receive a minimum of 6" of topsoil after required rolling. Compaction not to exceed 90%. All clods and lumps shall be broken down by means of harrows, discs or other appropriate equipment.
7. Soil Testing
- A. Owner shall be responsible for hiring and paying for the compaction and soils testing with the soils engineer. Contractor shall coordinate and schedule.
  - B. **All results will be forwarded to Menards within 24 hours of testing.**
8. Compaction Tests
- A. Site Fill: Perform at least one field density test for every 10,000 square feet of fill placed within the building and in the pavement areas, with at least one test for every 2 feet of fill placed.
  - B. Base Course: Perform at least one field density test for every 10,000 square feet of base course placed.
9. Grade Staking
- A. Contractor shall provide and pay for grade staking as required to insure proper sub-grade elevations, building locations, utilities, property lines, etc. Menards shall reserve the right to verify staking at its own discretion at the contractors expense.

## SECTION 02220

### EXCAVATION AND BACKFILLING

#### 1. Excavation

- A. Excavate to elevations and dimensions indicated on plans, plus sufficient space to permit erection of forms, shoring and inspection of foundations. If suitable bearing for foundations is not encountered at depth indicated on drawings, contractor shall notify Menards Manager of Store Planning/Construction, Phone (715) 876-2226, immediately and shall not proceed further until instructions are given.
- B. Bottom of excavations shall be level and true, and shall be undisturbed earth.
- C. When freezing temperatures may be expected, do not excavate to the full depth indicated unless footings or slabs can be placed immediately after excavation. Protect the bottoms of excavation from frost and do not place foundation footings or slabs on frozen ground.
- D. Control grading around building so that ground is pitched to prevent water from running into excavated area or damaging other structure.

#### 2. Backfilling

- A. Before placing fill, remove all debris from areas to be backfilled. Place and compact backfill so as to avoid settlement and damage to the walls.
- B. At exterior side and interior side of frost walls, backfill with clean stone to finish sub-grade, except where concrete walks occur at doorway locations. There, backfill with clean stone the full width of the sidewalk as indicated on plans to finish sub-grade.
- C. All other trenches and excavations to be backfilled with clean stone in paved or building areas.

#### 3. Compaction Tests

- A. **Minimum compaction tests shall be taken every twenty-five lineal feet and two vertical intervals for foundation backfill. General contractor shall be responsible for coordinating testing. Test results shall be transmitted to Menards within 24 hours by testing company.**
- B. Compaction equipment shall be of the static type, vibratory type or a combination of both types. All areas shall be compacted to a minimum of 98% of the maximum density at its optimum moisture content +/- 2% using modified proctor density (ASTM D1557).

## SECTION 02300

### EROSION AND SEDIMENTATION CONTROL

#### 1. General

- A. Conduct construction operations in a manner to minimize soil erosion. At a minimum, provide and maintain silt fence at locations shown on the contract drawings. Provide additional silt fence, dikes, ditch checks, rip-rap, seeding, sodding, jute mesh and other measures to insure that soil from site does not enter waterways or adjoining property.
- B. Erosion Control measures shall comply with the approved erosion control plan. Measures as indicated on the approved plan shall be the minimum measures allowed. All silt fences and other erosion control features shall be in place prior to any excavation/construction activity and shall be evaluated and maintained with additional erosion control measures add if necessary. All silt fences and other controls shall be maintained until viable turf or ground cover has been established prior to removal. All additional erosion control measures required by the city and/or state and local agencies above and beyond those specified shall be incidental to the grading contract. Maintain accurate written inspection logs on a weekly basis or as required by rain events.
- C. All streets/roads disturbed during construction hours must be cleaned at the end of each working day. A rock entrance to the site must be provided according to the D.O.T. requirements or details as shown on the civil plans to reduce tracking of dirt onto public streets.
- D. All slopes that are 3:1 and steeper shall be covered with an approved erosion blanket and seed as per Section 02900 unless otherwise directed in the contract documents.

#### 2. Summary

- A. Sections includes:
  - 1. Installation of temporary and permanent erosion and sedimentation control systems
  - 2. Installation of temporary and permanent slope protection systems
  - 3. Civil Engineers Storm Water Pollution Prevention Plans (SWPPP) and related documents
- B. Related sections:
  - 1. Section 02000 – Sitework
  - 2. Section 02200 – Earthwork
  - 3. Section 02900 – Landscaping
  - 4. Storm Water Pollution Prevention Plan (Civil Engineering Narrative and related documents)
  - 5. Construction drawings (soil erosion control plans, etc.)

3. Environmental Requirements

- A. Protection adjacent properties, any identified endangered or threatened species or critical habitat, any identified cultural or historic resources, and receiving water resources from erosion and sediment damage until final stabilization.

4. Materials

- A. Seed, sod and ground covers for the establishment of vegetation in accordance with Section 02900.
- B. Sediment control devices as specified on the Construction drawings (soil erosion control plans, etc.)
- C. Rolled erosion control products according to Erosion Control Technology Council (ECTC) standard specifications
- D. Temporary mulch such as loose straw, wood cellulose or agricultural silage
- E. Temporary and permanent outfall structures as specified on the drawings

5. Preparation

- A. Review the drawings and Storm Water Pollution Prevention Plan (“SWPPP”)
- B. Revised SWPPP as necessary to address potential pollution from site identified after issuance of the SWPPP at no additional cost to the owner.
- C. Conduct storm water pre-construction meeting with site contractor, all ground-disturbing sub-contractors, site engineer of record, and state or local agency personnel in accordance with requirements of special conditions Section 8.G.

6. Erosion and sedimentation control and slope protection implementation

- A. Place erosion and sediment control systems in accordance with the drawings and SWPPP or as may be dictated by site conditions in order to maintain the intent of the specifications and permits.
- B. Deficiencies or changes on the drawings or SWPPP shall be corrected or implemented as site conditions change. Changes during construction shall be noted in the SWPPP and posted on the drawings (Site Map)
- C. Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and to direct Contractor to provide immediate permanent or temporary pollution control measures.

- D. Maintain temporary erosion and sedimentation control systems as dictated by site conditions, indicated in the construction documents, or as directed by governing authorities or Owner to control sediment until final stabilization. Contractor shall respond to maintenance or additional work ordered by Owner or governing authorities immediately, but in no case, within not more than 48 hours if required at no additional cost to the Owner.
- E. Contractor shall incorporate permanent erosion control features, paving, permanent slope stabilization, and vegetation into project at earliest practical time to minimize need for temporary controls.
- F. Permanently seed and mulch cut slopes as excavation proceeds to extent considered desirable and practical.
- G. Unless required within shorter timeframe by the applicable General Permit for Storm Water Discharges Associated with Construction Activity, slopes that erode easily or that will not be graded for a period of 14 days or more shall be temporarily stabilized as work progress with vegetation or other acceptable means in accordance with Section 02900 unless otherwise specified in the Contract Documents. In the event it is not practical to seed areas, slopes must be stabilized with mulch and tackifier, bonded fiber matrix, netting, blankets or other means to reduce the erosive potential of the area.

## SECTION 02500

### PAVING & BASE COURSE

- 1. Base Course - Refer to Section 02200 for building pad requirements.
  - A. Materials: Aggregate base (100% crushed rock) shall be supplied, placed and compacted to the requirements per the application as described below. Gradation shall have 100% passing through a 1½" sieve, 95% passing a 1" sieve, 75% passing a ½" sieve, 40% passing a #4 sieve, 25% passing a #16 sieve and 8% passing a #200 sieve. Have testing engineer take 20 random tests to verify in place thickness and compaction prior to placement of asphalt. Submit results to Menards
  - B. Typical Base Course Sections:
    - 1. Heavy Duty Areas: Heavy duty areas as indicated on drawing including truck traffic and drive lanes at front parking lot and entire yard area shall receive a minimum thickness as specified on plans of base course stone or as specified in the soils report or as detailed in the engineering plans and specifications, whichever is greater. Report any variations in writing.
    - 2. Light Traffic Areas: Light traffic areas as indicated shall receive a minimum thickness of base course as specified in the soils report or as detailed in the

engineering plans and specifications, whichever is greater. Report any variations in writing.

C. Compaction Tests:

1. Compaction equipment shall be of the static type, vibratory type or a combination of both types. All areas shall be compacted to a minimum of 98% of the maximum density at its optimum moisture content +/- 2%.
2. **A minimum of one field density test is to be made for every 10,000 square feet of base course placed.**

2. Asphaltic Concrete Pavement

- A. Place asphaltic concrete base/binder and wearing courses to the lines and grades shown on the prints. Placement of asphaltic concrete pavement shall be in accordance with the Department of Transportation Standard Specifications and referenced sections called out on the civil engineering prints. All mix designs must be submitted to Menards for final approval before work commences. Use attached sample mix designs for basis of mix design.
- B. Compaction: Compact pavement until roller marks are eliminated completely. In no case shall pavement compaction be less than 98% of maximum laboratory density. **A minimum of one field density test is to be made for every 10,000 square feet of base course placed.**
- C. Paved Areas: Asphaltic pavement design for all areas are to be based on the following criteria and mix designs which have performed well. Variations from these designs are to be submitted with the bid. Paving thicknesses are to be taken from the civil drawings. Report any variations in writing.
- D. Patching prior to installation at bituminous wear course: Prior to the installation of bituminous wear course, all areas of failed bituminous base, aggregate base and settlements shall be repaired by the contractor.

Settlements (if they do not show bituminous or aggregate base failure) shall be repaired by the addition of a leveling patch of asphalt base material or by removing the asphalt base, adding compacted aggregate base and re-installing the required asphalt base. Patching of settlements shall be the responsibility of the contractor.

Areas which show evidence of bituminous and/or aggregate base failure shall be repaired by the removal of the failed bituminous base or bituminous base and aggregate base. All such patches shall have square cut edges in the bituminous base. Cost of failed base(s) replacement shall be borne by contractor.

- E. Cracks that develop in the asphaltic concrete pavement for any reason shall be repaired under warranty for a period of 2 years from the date the store opens.



1. Cracks shall be repaired by routing the crack and applying Road Saver 534 silicone crack sealant as manufactured by Crafcro, Inc. 1-800-528-8242.
2. Installation should follow manufacturers guidelines.

3. Concrete Pavement

- A. Contractor shall provide materials and construct concrete pavement to the lines and grades shown on civil drawings, site slab layout plan of the Menards construction prints.
  - B. Contractor shall refer to Section 03300 - Cast in Place Concrete - for all cost in place concrete requirements.
  - C. Locate construction and/or contracting joints at a maximum of 15 ft. on center in either direction unless otherwise noted on drawings. Joints shall be parallel or perpendicular to building and shall be spaced uniformly. Joints shall be continuous across slab, unless interrupted by an expansion joint. Extend joints completely through curb. Locate expansion joints as required to isolate fixed objects abutting or within paved areas. Install joint material in accordance with manufacturers recommendations. "Soft Cut" equipment shall be used to cut control joints as soon as possible upon completion of slab finishing to a depth of 2".
  - D. Final surface finish shall be a uniform and skid resistant medium broomed finish.
4. Tolerance in Thickness: Determination of concrete and asphalt pavement thickness shall not be performed until after pavement surface tests and all corrective grinding have been completed as described above in Article 407.09. Adjustments made in the contract unit price for pavement deficient in thickness will be in addition to those made for Profile Index as specified in Article 407.09.

Determination of pavement thickness will be based on cores taken from a unit of the pavement having a surface area equal to or greater than 420 sq m (500 sq. yd.). Determination of pavement thickness for areas less than 420 sq m (500 sq. yd.) may be made from edge of pavement measurements or from before and after cross section measurements, as determined by the Engineer. Computation of thickness, and requirements relative to deficient thickness, shall be as specified herein:

- A. Length of Units. The unit of surface area will be a continuous strip of pavement 300 m (1000 ft) in length when possible. When the length of a continuous strip of pavement is less than 300 m (1000 ft), the length of the unit to be used shall be identical to the length of the continuous strip.
- B. Width of Units. The width of a unit will be the width from the pavement edge to the adjacent lane line, from one lane line to the next, or between pavement edges for single-lane pavements.

- C. Cores. Cores will be taken from the pavement at such points as the engineer shall select. When computing the thickness of a unit, not less than three cores will be taken.
- D. Unit Deficient in Thickness. In considering any portion of the pavement that is deficient, the limits of the unit to be used in computing the deficiency will be determined by the engineer, except that no portion of the pavement once included in such computation will be included in a second computation.
- E. Determination of Thickness. The thickness of the pavement at the cored points will be the average caliper measurement of the cores taken at the respective points. The average thickness of the pavement will be determined by obtaining a weighted average of the thickness at the points where cores are taken from the particular unit, considering that each core represents the thickness of the pavement extending longitudinally in both directions half way to the nearest core, or to the end of the unit. Measurements which exceed the specified plan thickness will be considered as the specified thickness. Measurements which are less than the specified plan thickness by more than five percent, determined as specified in paragraphs (h) and (i) below, will not be included in obtaining a weighted average thickness.
- F. Thickness Equals or Exceeds Specified Thickness. When the average thickness of a unit, determined as specified above, equals or exceeds the specified plan thickness, payment will be made at the contract unit price per square meter (square yard) for the specified thickness.
- G. Thickness Deficient by Five Percent or Less. When the average thickness of a unit determined as specified above, is less than the specified plan thickness by five percent or less, an adjusted unit price will be used in computing payment for the pavement involved. The adjusted unit price will be a percentage of the contract unit price as given in the following schedule:

<u>Average Thickness Deficiency In Percent of Plan Thickness</u>	<u>Percent of Contract Unit Price</u>
0.0 to 2.0	100
2.1 to 3.0	80
3.1 to 4.0	72
4.1 to 5.0	68

- H. Thickness Deficient by More than Five Percent But Not More Than Ten Percent. When the thickness of the pavement at a cored point is less than the specified thickness by more than five percent but not more than ten percent, additional cores will be taken on each side of such thin core at such intervals as the engineer may select until cores are obtained which are not deficient in thickness by more than five percent. The average thickness of the pavement between the last points cored, and for the full width of the pavement unit, excepting any areas which are deficient in thickness by more than ten percent, will be determined as a weighted average of the thickness at the

cored point and an adjusted unit price will be used in computing payment for the pavement involved. The adjusted unit price will be a percentage of the contract unit price as given in the following schedule:

<u>Average Thickness Deficiency In Percent of Plan Thickness</u>	<u>Percent of Contract Unit Price</u>
5.1 to 7.5	57
7.6 to 10.0	50

- I. Thickness Deficient by More Than Ten Percent. When the thickness of pavement at a cored point is less than the specified thickness by more than ten percent, additional cores will be taken on each side of such thin cores at such intervals as the engineer may select until cores are obtained which are deficient in thickness by ten percent or less. All pavement between the last points cored and for the full width of the unit of pavement will be considered thin by more than ten percent, and such thin pavement shall be removed and replaced with pavement of the specified thickness unless the engineer, at his/her option, permits in writing such thin pavement to remain in place.

If the thin pavement is removed and replaced with pavement of the specified thickness, the replacement pavement will be paid for at the contract unit price per square meter (square yard), and no payment will be made for the thin pavement removed nor for the cost of removal. If the thin pavement is left in place, the Contractor will receive no compensation for the thin pavement and, in addition, an amount equal to two times the contract cost of the thin pavement will be deducted from the compensation due the Contractor.

#### 5. Concrete Curb & Gutter, Walks, Slabs and Retaining Walls

- A. Concrete Curb and Gutters: All curb and gutter shall be of a "624" design, such that the distance from the face of the gutter to the back of the curb is 30"; 6" curb and 24" gutter. Radis must be incorporated at top and bottom of curb face. Radis shall be a minimum of 1½" and maximum of 3". A ½" radius is desired at back side of curb top (adjacent to sidewalks and landscape). Curb face shall be either 90° - vertical to gutter or tapered (maximum of 3:1). In no case shall the curb be less than 6" wide at the top.
- B. Curb and gutter shall be placed in accordance with lines, elevations and grades as established in the civil drawings. Construction and contraction joints shall be spaced in a manner that allows alignment with the required spacing of the proposed sidewalk and slab joints to be placed adjacent to and the following the curb and gutter. In no case shall joint spacing exceed 20' on center maximum. Refer to Section 03300 regarding cast in place concrete requirements.
- C. Concrete Walks and Slabs: All walks and slabs shall be placed in accordance with dimensions, elevations and slopes per civil drawings and Menards construction plans. Refer to Section 03300 regarding the cast in place concrete requirements.

- D. Retaining Walls: Retaining walls, if required, shall be constructed in accordance with the drawings. Cast in place concrete requirements shall be in accordance with Section 03300.

6. Pavement Markings & Striping

- A. Description. This work shall consist of the furnishing and application, or removal of pavement markings at the locations and in accordance with the design and details indicated, as shown on the plans and provided by the contract. All on site pavement marking is to follow this specification. Off-site striping does not necessarily follow this specification (see engineering specifications).

Pavement marking shall consist of the furnishing and application of pavement markings of the specified material, width and color to produce: stop lines, crosswalks, arrows, symbols, words, curb ramps, parking stalls, curb lines or island nose markings.

1. All yellow and white pavement markings are to be paint based.
2. All parking lot striping and other pavement markings (blue, etc.) are to be paint based.

B. Materials.

1. General. All materials used in the work shall conform to the requirements specified for the class of material named and as hereinafter specified. Administrative rules and regulation of the Department of Natural Resources relating to volatile organic compound (VOC) limits shall be complied with in the selection of marking material.
2. Paint. All solventborne and waterborne paint products shall be selected from an approved products list from the current Traffic Paint Performance Test. A current list of approved permanent pavement marking products may be obtained from the Bureau of Highway Operations of the Department. The required type of pavement marking material shall be as designated in the contract or as directed by Menards. The contractor may select any product of the type designated in the contract or as directed by Menards and which is on the approved products list.
  - a) Drying Time. In the laboratory the material shall exhibit a 70-minute maximum dry-to-no-pick-up time, as tested according to ASTM D711, when mixed in the proper ratio, applied at  $0.38 \pm 0.01$  mm wet film thickness at  $24 \pm 3^{\circ}\text{C}$ :

In the field the material shall exhibit a 45-minute maximum dry-to-no-tracking time when applied at  $0.38 \pm$  mm wet film thickness at  $24 \pm 3^{\circ}\text{C}$ .

3. Miscellaneous.

- a) Containers. The components shall be shipped to the job site in containers that are substantial and plainly marked with the manufacturer's name and address, the color of the material, date of manufacture, batch number and component.
- b) Useful Life. Material not used within one year from date of manufacture will be rejected.
- c) Qualification. The contractor shall provide a material that has a good performance record on D.O.T. projects. Materials placed that fail, fade, peel or wear prior to stores opening will be redone at the contractor's expense and applied as necessary throughout the warranty period.

4. Testing and Certification.

- a) **General.** The contractor shall furnish certified reports of tests for conformance made by the manufacturer or a recognized testing laboratory on permanent marking materials, except epoxy furnished for the work. The manufacturer shall identify on these reports the batch numbers to which the test results apply. Testing and certification for epoxy shall be as specified below.

C. Equipment.

- 1. Paint Equipment. The paint tank or tanks on the marking equipment shall have accurately calibrated dipsticks or other means of measuring the quantity of paint in the tank. An adequate heating system shall be provided when applying paint which will achieve and maintain required uniform application temperatures.

D. Construction Methods.

- 1. General. The pavement surface shall be dry and free from frost, except epoxy may be applied to damp pavement. Dust, dirt, glaze, oil, grease, loose paint, gravel, debris or other materials and contaminants which would prevent proper bonding of the marking to the pavement shall be removed by the contractor prior to application of the marking.

The contractor shall be responsible for the accurate layout and placement of the markings, unless otherwise specified in the contract. The marking cycle shall be matched to each end of the project so the cycle is continuous from existing marking to new marking.

The applied lines shall have a uniform cross section and color. The lines shall have a reasonably sharp cutoff on both sides and the ends.

The lines shall have a minimum uniform width of 4" unless otherwise specified as set forth in the contract.

Pavement markings shall be placed at the locations and to the dimensions and tolerances shown on the plans or directed by the engineer and within any specified time limits.

Unless otherwise required in the contract, all permanent pavement markings to be applied to new asphaltic pavements must be applied to the upper layer of such pavements prior to the expiration of seven days following the completion of such mainline surfacing or pavement, unless weather conditions preclude such application.

When existing pavement marking requires removal prior to application of new pavement marking, the removal methods shall expose a minimum of 85 percent of the pavement surface, which is to receive the new pavement marking.

New pavement marking installed without removal of existing marking shall be retraced over the existing configurations.

When applying markings, which do not dry rapidly enough to preclude pickup under traffic, the contractor shall place cones or other similar traffic control devices on the wet lines to adequately protect the wet line from pickup under traffic. When the lines are sufficiently dry to preclude any pickup under traffic, the cones shall be promptly removed.

Prior to any striping operations, verify striping colors with Menard, Inc. project manager. When concrete is utilized in lieu of asphaltic pavements, yellow striping will be utilized vs. white in the general parking areas.

2. Applying Painted Markings. On a smooth asphaltic surface, the paint shall be applied at the rate of 398 L/km of 100 mm continuous stripe having a wet film thickness of 0.38 mm. On an open asphaltic surface, seal coat surface or concrete surface, the paint shall be applied at the rate of 43 L/km of 100 mm continuous stripe having a wet film thickness of 0.38.
3. Removing Pavement Markings. The location of pavement markings to be removed will be designated on the plans or by Menards

Pavement markings designated for removal shall be removed to the fullest extent possible by any method that does not materially damage the surface or leave a detrimental residue or discoloration. Painting over existing markings is not considered removal. Accumulations on the pavement of sand or other material, used for removal of markings, which might interfere with drainage or constitute a hazard to traffic will not be permitted.

When blast cleaning is used for the removal of pavement markings or objectionable material, the residue including dust shall be removed immediately. Such removal shall be by vacuum attachment operating concurrently with the blast cleaning operation or by other methods approved by the engineer. When chemicals are used for removal, adequate measures to protect traffic from damage shall be taken. Chemicals shall not be flushed across pavement occupied by traffic.

Any material damage to the pavement or surfacing caused by pavement marking removal shall be repaired by the contractor at no additional compensation by methods acceptable to Menards

Collection, hauling and disposal of dust and residue resulting from pavement marking removal required under the contract shall be done by the contractor in compliance with applicable administrative rules and regulations of the Department of Natural Resource.

E. Proving Period

1. 2 year warranty period shall apply to all permanent epoxy and standard painted markings placed. The warranty period shall commence on the date the store opens. During this period, Menards will make such observations as are necessary to determine failure of the material. Should the termination of the warranty period fall within the months of December, January or February, Menards may extend the warranty period as necessary for changes in weather conditions to permit adequate observation of the markings in place.

If any section of marking fails during the proving period for any reason, that section shall be replaced at the contractor's expense prior to final acceptance.

Failure includes discoloration or chipping.

Markings which show evidence of poor construction technique shall be repaired or replaced at the contractor's expense.

SAMPLE MIX DESIGN  
 REPORT OF ASPHALTIC MIX DESIGN  
 (ASTM D1559, D2762, D2041, D4867-89)  
 (Note: Actual mix design can vary slightly  
 but not more than 5% from the Marshall Test Data List)

Type..... Asphaltic Binder  
 Specifications..... Heavy Duty

Aggregate Source:

SPL No.	Test Number	Material	Source	Location
1	1222-A-92	#1 Stone	Franklin	NE ¼ Sec. 10 T5 RN 21E Milw. Co.
2	1229-A-92	½" Chip	Franklin	NE ½ Sec. 10 T5 RN 21E Milw. Co.
3	1228-A-92	3/8" Chip	Franklin	NE ¼ Sec. 10 T5 RN 21E Milw. Co.
4	1207-A-92	Mfg'd Sand	Franklin	NE ¼ Sec. 10 T5 RN 21E Milw. Co.
5	191-A-93	Washed Sand	Amon - Friemonth	NW ¼ NE ¼ Sec. 2 T3 R17E Walworth Co.

Aggregate Gradation (% Passing):

	Spec.
1.0 IN	100-100
¾ IN	95-100
½ IN	70-90
3/8 IN	60-85
#4	40-65
#8	25-50
#16	--
#30	10-35
#50	8-25
#100	--
#200	3-7
Bulk Agg.	
Sp. Gr.	

For JMF as used in laboratory trial mixes:

P.I. - N.P.                      Crush - 97.3  
 L.B.W.                         Effective Agg. Sp. Gr. - 2.747  
 Soundness - 2.4               Elongated particles - <5  
 L.A. Wear - 5.6 (100) 24.4 (500)

Bitumen Data:

Type ..... 85-100  
 Source. .... Amoco  
 Sp. Gr. (77/77F) ... 1.032

Average Marshall Test Data (75 blows per side, with beveled hammer at 275F)

Bit Cont. (% of Mix)	---- Mix	% Voids VMA	--- VFB	Th. Max Sp. Gr.	Flow (.01")	Bulk Sp. Gr.	Unit Wt. (#/Cu Ft)	Stability (Lbs-14 of)
4.50	6.0	14.6	58.9	2.556	10.5	2.402	149.5	3634.0
5.00	4.3	14.2	69.7	2.536	10.8	2.426	151.0	3605.0
5.50	3.1	14.2	78.2	2.517	11.3	2.438	151.7	3707.0
6.00	2.0	14.4	84.7	2.498	11.5	2.444	152.1	3666.0
6.50	1.3	14.8	91.2	2.479	13.5	2.448	152.4	3330.0



REPORT OF ASPHALTIC MIX DESIGN  
(ASTM D1559, D2762, D2041, D4867-89)

Region ..... 16  
Plant ..... C-07  
Type ..... Asphaltic Binder  
Specification..... W.D.O.T. "HV-2"  
Job Number ..... (702) 2030-03-71                      Location: USH 45

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Recommended Optimum A.C. Content - 5.10%

Marshall Data at Optimum A.C. Content:

Mix Voids (%)	4.0
VMA (%)	14.1
VFB (%)	71.6
Th. Max. Sp. Gr. (Corr. Factor 0.030)	2.532
Bulk Sp. Gr.	2.430
Unit Wt. (lbs/cu. ft.)	151.2
Flow (.01 in.)	10.8
Stability (lbs.)	3640.0
Tensile Strength Ratio (28 blows)	78.2
Recommended Mixing Temperature	275-300
Dust to Asphalt Ratio	0.8

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Comments:

P - #200 increased 1.0% for design purposes, to, compensate for anticipated degradation during production (JMF - #200 - 4.3)

SAMPLE MIX DESIGN  
 REPORT OF ASPHALTIC MIX DESIGN  
 (ASTM D1559, D2762, D2041, D4867-89)  
 (Note: Actual mix designs can vary, however not  
 more than 5% from the Marshall Test Data Listed)

Type..... Asphaltic Surface  
 Specifications..... Heavy Duty

Aggregate Source:

SPL No.	Test Number	Material
1	1222-A-92	½" Chip
2	1229-A-92	¾" Chip
3	1228-A-92	¼" Chip
4	1207-A-92	Mfg'd Sand
5	191-A-93	Washed Sand

Aggregate Gradation (% Passing):

	1222-A-92 Bldg. 10.0%	1229-A-92 Bldg. 12.0%	1228-A-92 Bldg. 13.0%	1207-A-92 Bldg. 45.0%	191-A-93 Bldg. 20.0%	Blend	Job Mix	Spec.
1.0 IN	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100-100
¾ IN	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100-100
½ IN	79.5	100.0	100.0	100.0	100.0	97.9	97.9	90-98
¾ IN	26.2	94.3	100.0	100.0	100.0	91.8	91.8	75-95
#4	5.7	12.4	83.3	97.1	89.8	72.4	72.4	45-75
#8	4.7	7.3	55.1	71.9	75.1	54.5	54.5	30-55
#16	4.3	6.0	37.0	42.7	58.6	36.0	--	--
#30	4.1	5.4	25.3	22.0	37.9	21.2	21.2	15-35
#50	3.9	5.0	18.1	95	12.2	9.7	9.7	10-25
#100	3.7	4.6	13.8	4.8	4.8	5.6	--	--
#200	3.2	4.0	10.9	3.3	3.3	4.2	4.2	3.7
Bulk Agg.								
Sp. Gr.	2.613	2.614	2.743	2.759	2.637	2.695		

For JMF as used in laboratory trial mixes:

P.1. - N.P.	Crush - 97 1F/95 2F
L.B.W.	Effective Agg. Sp. Gr. - 2.755
Soundness - 2.4	Elongated particles - <5
L.A. Wear - 5.6 (100) 24.4 (500)	

Bitumen Data:

Type . . . . . 85-100  
 Source. . . . . Amoco  
 Sp. Gr. (77/77F) . . . 1.028

Average Marshall Test Data (75 blows per side, with beveled hammer at 275F)

Bit Cont. (% of Mix)	---- Mix	% Voids VMA	--- VFB	Th. Max Sp. Gr.	Flow (.01")	Bulk Sp. Gr.	Unit Wt. (#/Cu Ft)	Stability (Lbs-14 of)
5.00	6.8	16.5	58.8	2.542	10.0	2.369	147.4	3225.0
5.50	5.4	16.4	67.1	2.522	10.0	2.385	148.4	3146.0
6.00	3.8	16.0	76.3	2.503	10.4	2.409	149.9	3213.0
6.50	2.5	15.9	84.3	2.484	11.1	2.423	150.8	3095.0
7.00	1.8	16.5	89.1	2.465	12.8	2.420	150.6	2811.0

REPORT OF ASPHALTIC MIX DESIGN  
(ASTM D1559, D2762, D2041, D4867-89)

Region ..... 16  
Plant ..... C-07  
Type ..... Asphaltic Surface  
Specification..... W.D.O.T. "HV-3"  
Job Number ..... (702) 2030-03-71                      Location: USH 45

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Recommended Optimum A.C. Content - 5.90%

Marshall Data at Optimum A.C. Content:

Mix Voids (%)	4.0
VMA (%)	16.0
VFB (%)	75.0
Th. Max. Sp. Gr. (Corr. Factor 0.030)	2.507
Bulk Sp. Gr.	2.407
Unit Wt. (lbs/cu. ft.)	149.8
Flow (.01 in.)	10.4
Stability (lbs.)	3180.0
Tensile Strength Ratio (28 blows)	88.6
Recommended Mixing Temperature	275-300
Dust to Asphalt Ratio	0.9

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Comments:

P - #200 increased 1.0% for design purposes, to, compensate for anticipated degradation during production (JMF - #200 - 5.2)

## SECTION 02700

### UNDERGROUND UTILITIES

#### 1. Materials

- A. All materials supplied by contractor that can be purchased at a Menards store should be. In no case shall the contractor purchase materials from Lowes, Home Depot subsidiaries of these companies or any direct competitor. Menards will not pay for materials that were not purchased at a Menards store that could have been.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Trenching for Utilities

- A. Excavate trenches so that the pipe can be laid safely and accurately to required line and grade. Hand excavate for bells, fittings and projections to allow for property jointing and to insure that the pipe rests evenly along the barrel and is not resting on the bell.
- B. Dewater trenches as required to provide stable bedding for the pipe. Dewatering will be incidental to the work, no additional compensation will be allowed.
- C. In sand and gravel soils, the bottom of the trench may be shaped to fit the bottom 1/3 of the pipe. In silt and clay soils, the bottom of the trench shall be 4" below the pipe barrel and 3" below the bell. In rock, the bottom of the trench shall be 6" below pipe barrel. Under foundations and footings, the bottom of the trench shall be 8" below the pipe.
- D. Trenches dug in sandy or gravelly materials may use undisturbed earth for bedding provided the surface is shaped to conform to the pipe. Provide granular bedding in all other trenches from subgrade to a point supporting the bottom 1/3 of pipe for rigid pipe and to springline (mid-height) for flexible pipe. Place and compact the bedding so that it fills and supports the pipe haunch area.
- E. Provide tamped granular initial backfill up to a minimum depth of 1 ft. above the pipe. Take special care in placing and tamping the initial backfill material so alignment and grade of the pipe is not disturbed nor is the pipe damaged.

- F. Backfill above the initial zone shall be granular backfill.
- G. Granular Backfill. Granular material for backfilling shall consist of durable particles ranging from fine to coarse in a substantially uniform combination. Sufficient fine material shall be present to fill all voids of the coarse material. No stone over 3 inch sieve size shall be present. Some fine clay or loam particles are desirable, but they shall not be present in the form of lumps. Granular backfill shall conform to the following gradation requirements:

<u>Sieve Size</u>	<u>Percentage Passing by Weight</u>
2 inch	95 - 100%
No. 4	35 - 60%
Finer than No. 200	5 - 15%

H. Compaction Tests:

1. Compaction equipment shall be of the static type, vibrator type or a combination of both types. All areas shall be compacted to a minimum of 98% of the maximum density at its optimum moisture content +/- 2%.
2. Perform at least two tests in random backfill layers for every 400 linear feet of trench.

3. Watermain

- A. Pipe & Fittings. Watermains shall be ductile-iron and shall conform to the requirements of American National Standards for ductile iron pipe, centrifugally cast in metal molds or sand lined molds, AWWA C151, Class 52. Fittings shall be ductile iron, AWWA C110 or C153, 250 psi working pressure. Interior of pipes and fittings shall have standard thickness cement mortar lining and bituminous coating, AWWA C104. Exterior of buried pipes and fitting shall have bituminous coating, AWWA C151. Pipe and fitting joints shall be either push-up type (slip joint) or mechanical type conforming to AWWA C111. Joints connecting pipes to fittings, valves and hydrants and to other pipes for required restraint length on each side of the fittings, shall be restrained by use of joint "Fast Grip Gasket" or approved equal; or by use of wedge type restraining glands "Ebaa Iron/Megalug Series 1100", or approved equal. Standard mechanical joint retainer glands will not be acceptable.
- B. Valves & Boxes. Valves shall be resilient-seated gate valves. AWWA C509, and shall open counter clockwise. Clow, Mueller, M & H Waterous or Kennedy. Valve boxes shall be cast iron, screw type with 4½" shaft and round drop cover with "WATER" imprinted on top and shall be installed using valve box adapters.
- C. Hydrants. Fire hydrants shall be dry-barrel type conforming to AWWA C502 and shall have cast iron body, fully bronze mounted; 5¼" minimum main valve opening; 6" mechanical joint inlet connection; one 4½" pumper nozzle and two 2½" hose

nozzles with National Standard Threads; 1½” pentagon operating nut, open counter clockwise; caps secured with heavy chains, traffic flange, and 6’ - 6” barrel length with hydrant extension as needed. Paint hydrants in color designated by local utility with heavy duty exterior enamel. Provide Clow 2500, Mueller Centurian or Kennedy Guardian K81A.

- D. Installation. Install watermain with minimum cover indicated on drawings. Clean interior of pipe before installation. Insert tapered plugs into ends of pipe line when pipe is not being laid to prevent entrance of dirt and contaminants. Join pipe in accordance with manufacturer’s recommendations. Mark end of service stub(s) with 2” x 6” x 6 ft. board projecting 4” above ground.
- E. Joint Restraint. Joint restraint shall be provided at all fittings, valves and hydrants and between pipe sections adjacent to fittings for the minimum length indicated below. Concrete blocking shall not be used to restrain joints.

<u>Fitting</u>	<u>Restraint Length</u>
45 - Degree Bend	18
90 - Degree Bend	36
45 - Degree Vertical Offset	36
Tee - Runs	9
Tee - Branch	45
Stud or Dead End	72

Note: Restraint length is the minimum length of pipe in feet to be tied together in each direction from the fitting listed.

- F. Pipe Wrap. Polyethylene wrap corrosion protection shall be provided for all ductile and cast iron water main accessories including iron pipe, fittings, valves, etc.
1. Installation. The polyethylene wrap shall be cut approximately 2 feet longer than the length of pipe section. After assembling the pipe joint, the polyethylene shall be overlapped approximately 1 ft. and at all joints sealed with the approved adhesive tape. Additional taping shall be used at 3 ft. intervals along the pipe. Any rips, punctures or other damages to the polyethylene shall be repaired immediately with adhesive tape. All copper service connections shall be wrapped for a distance of 3 ft. from the center line of the main. Before installing the polyethylene wrap, the exterior of the pipe should be free of foreign material.
  2. Wrapping of Special Fittings, Valves, Etc. When valves, tees, crosses, etc. cannot be wrapped practically in a tube, a double wrap of flat sheet or split tube shall be used. The wrap shall extend approximately 18 inches beyond all joints. All seams shall be taped securely.

3. Backfill Around Polyethylene Wrapped Pipes. The bedding and cover materials shall be placed with care so as to prevent damage to the wrap. Any rips or punctures in the wrap shall be repaired immediately.

G. **Connection to Municipal Main.** Connection to existing watermain shall be made under pressure using a tapping sleeve and a tapping valve. Notify the city so that utility personnel can observe the tap. Pay all municipal fees for water connection and inspection.

H. Testing, General. Contractor shall furnish all labor, equipment and material to complete testing. Water for flushing and testing will be available from municipality. Contractor shall pay for water used. Water usage may be restricted to night time or weekend hours during periods of low demands. Perform testing in presence of owner. **Forward all test results to Menards within 24 hours of receiving results for all tests.** Contractor shall flush all pipes, as many times as needed, in order to completely clear out all dirt and debris. Contractor shall be solely liable for any damage resulting from the Contractor's failure to adequately clear out the pipes.

I. Disinfection & Bacteriological Test. Disinfect watermains in accordance with AWWA C651 and state and local codes. Sample water and arrange for bacteriological testing by an approved laboratory. Should test prove unsatisfactory, disinfect and sample again until acceptable results are obtained. Cost of sampling and processing bacteriological samples shall be paid for by the contractor.

J. Pressure & Leakage Test. Pressure and leak test watermain at not less than 200 psi for 2 hr. in accordance with NFPA 13.

K. Electrical Continuity. Perform a continuity test on entire work between hydrants and other accessible point of backfilled watermain system. If test indicates a lack of electrical continuity, find and repair the broken circuit. Conductivity tests shall be 350 amps for 4 minutes at 30 volts; then 400 amps for 1 minute at 30 volts.

4. Non-Potable Water Line

A. Piping shall be PVC, ASTM D1785, Sch. 40.

B. **Install piping with minimum cover indicated on drawings. Pressure test pipe at 100 psi for 2 hr. or as required by authority having jurisdiction, repair any leaks. Forward all test results to Menards within 24 hours of receipt of results.**

5. Sanitary Sewer

A. Pipe. Sanitary sewer shall be PVC, ASTM D3034, SDR-35. Joints shall be elastomeric gasket, ASTM D3212.

- B. Installation. Lay pipe only after project site is filled to subgrade elevations. Establish line and grade using laser equipment. Where fractical, begin laying of pipe at lowest point of proposed sewer line, lay with bell ends up-grade. Clean interior of pipe before installation. Insert tapered plugs into ends of pipeline when pipe is not being laid to prevent entrance of dirt and contaminants. Join pipe in accordance with manufacturer's recommendations. Mark end of service stub(s) with 2" x 6" x 6 ft. board projecting 4" above ground.
- C. Connection to Municipal Sewer. Contractor shall connect to existing sewer by constructing a manhole over the existing sewer line. Notify proper city officials so that utility personnel can observe construction. Pay all municipal fees for sewer connections and inspection.
- D. Leakage Testing. Provide leakage testing of all sewer piping using exfiltration or air testing. Exfiltration testing shall be performed with a minimum positive head of 2 ft. above top of pipe. Air testing shall use procedures as ASTM C828. Submit testing procedure for approval. **Forward all test results to Menards within 24 hours of receipt of results.**
- E. Exfiltration of water into sewer shall not exceed 200 gallons per day per inch diameter per mile of sewer or as required by authority having jurisdiction. For air testing, furnish test plugs, air compressor, test gauge, stop watch and experienced personnel for conducting tests. Test pressure shall be based on an average of 3 psi net with an allowable air loss in accordance with ASTM C828. Contractor shall seal and brace wyes, tees, laterals and plugs to withstand 5 psi pressure.
- F. Alignment & Grade. Check alignment and grade by the lamping method. If pipe shows poor alignment, all offset or open joints, sags or kinks, defects shall be corrected by contractor before final acceptance.
- G. Deflection Limitation. Deflection of PVC pipe shall be limited to 5 percent of nominal pipe diameter. If visual inspection indicates a greater deflection, contractor shall supply and pull a proof device with a diameter 5 percent less than internal pipe size through sewer, failure to freely pass through shall be cause for rejection of the sewer.

6. Storm Sewer

- A. Pipe. Storm sewer shall be reinforced concrete, spiral ribbed aluminized corrugated polyethylene (through 24" diameter), PVC corrugated sewer pipe (through 18" diameter), or PVC sewer (through 15" diameter) at contractor's option. PVC drains from downspouts to storm sewer shall be PVC-DWV pipe, ASTM D2665, with solvent weld joints.
- B. Reinforced concrete pipe shall comply with ASTM C76, Class III. Joints shall be rubber ring gasket type, ASTM C443.



- C. Spiral ribbed aluminized corrugated steel pipe (CSP) shall be Contech Construction Products/Ultra Flow or approved equal. Pipe sections shall be joined with hugger band, o-ring gaskets and sealant meeting requirements of the State Plumbing Code.
- D. Corrugated polyethylene pipe shall comply with ASASHTO M294, Type S and shall have an integrally formed smooth interior. Joints shall be made with watertight fittings. Provide Advanced Drainage Systems N-12 Sanitary Sewer Pipe & Fittings, Hancor HI-Q Sure-Loc 10.8, or approved equal.
- E. PVC corrugated sewer pipe shall comply with ASTM F949 and shall have smooth interior and pipe stiffness of 50 psi. Joints shall be elastomeric gasket type, double gasket shall fit into first two full corrugations of spigot end of pipe. Pipe shall be Contech Construction Products A-2000 or approved equal.
- F. PVC plastic pipe shall comply with ASTM D3034, SDR-35. Joints shall be elastomeric gasket, ASTM D3212.
- G. Installation. Lay pipe only after project site is filled to subgrade elevations. Establish line and grade using laser equipment. Where practicable, begin laying of pipe at lowest point of proposed sewer line; lay with bell ends up-grade. Clean interior of pipe before installation. Insert tapered plugs into ends of pipeline when pipe is not being laid to prevent entrance of dirt and contaminants. Join pipe in accordance with Manufacturer's recommendations.
- H. Leakage Testing. Storm sewers shall be tested for excessive infiltration and sand leakage. Contractor shall repair all sand leaks and infiltration leaks which may cause a continued maintenance problem.
- I. Alignment & Grade. Check alignment and grade by lamping method. If pipe shows poor alignment, all offset or open joints, sags or kinks, defects shall be corrected by contractor before final acceptance. Pipeline shall be relayed if lamp cannot be viewed between adjacent manholes.
- J. Deflection Limitation. Deflections in PVC and PE pipe shall be limited to 5 percent of nominal pipe diameter. If visual inspection indicates a greater deflection, contractor shall supply and pull a ball with a diameter 5 percent less than internal pipe size through sewer, failure to freely pass through shall be cause for rejection of sewer.

7. Paved Areas Subdrains

- A. Underdrain Pipe. Perforated corrugated polyethylene drainage pipe complying with AASHTO M252. Verify civil engineering drawings for location and details.

- B. Pipe Wrap. Synthetic fabric with an approximate weight of 3 oz./s.y.: ADS Sock or approved equal.

8. Manholes & Inlets

- A. Manholes. Manholes shall be precast reinforced concrete rings, ASTM C478, of sizes shown on drawings. Joint shape shall be compatible with designated joint materials. Steps and pipe seal components shall be cast into riser sections. Precast base shall be minimum 6" thick and either separate or integral with first riser. Cast-in-place concrete bases shall be minimum 12" thick and cast with first riser embedded at least 4". Joint material shall be rubber ring gaskets or plastic gasket material. Pipe seals shall be flexible, watertight, gasketed seals for pipe entrance holes, except that mortar seals may be used for storm sewer pipe. All inverts shall be poured or precast.
- B. Sanitary Manholes. Sanitary sewer manhole shall have external bituminous waterproof coating and external rubber manhole frame - chimney seal (with seal extensions if necessary). External rubber seal and seal extensions shall be Cretex Specialty Products or approved equal. Install seals in accordance with manufacturers recommendations.
- C. Inlets. Small inlets (36" or less diameter) shall be reinforced concrete pipe sections, ASTM C76, of sizes shown on drawings. Steps 16" on center shall be provided whenever depth of structure is greater than 5 ft. Inlet joints and pipe seals shall be cement mortar or resilient gaskets and seals.
- D. Castings. Frames and lids shall be cast iron, ASTM A48, Class 30, of uniform quality, free from blow holes, porosity, hard spots, shrinkage defects, cracks or other serious defects. Manhole casting shall be true to pattern with machined bearing faces between frame and cover. Type of castings shall be as designated on drawings. Lids for sanitary manholes shall have self-sealing neoprene O-ring gaskets and concealed pick holes.
- E. Steps. ASTM C478, cast iron (as specified above) or steel reinforced copolymer polypropylene.
- F. Concrete. Concrete for inverts shall have 3 to 5 percent air-entrainment and a minimum compressive strength of 3000 psi at 28 days.
- G. Installation. Wherever practicable, lay pipe continuous through manhole and remove upper half of pipe after grouting. Manholes with more than one entrance pipe and manholes with changes in alignment or grade shall have formed flow channels with smooth radius transitions. Pipe seals shall be completed in accordance with manufacturer's instructions. Pipes with flexible seals shall be supported outside manholes by bedding as specified for type of pipe installed.

9. Outfalls

- A. Endwalls. Apron endwalls shall be pre-fabricated flared end sections of the same material as sewer pipe. Provide trash guards and pipe ties as detailed on drawings.
- B. Rip-Rap. Work shall consist of furnishing and placing rip-rap, medium random rip-rap or heavy rip-rap, as the case may be per the contract drawings. Stone for all types of rip-rap shall be durable field or quarry stone or approved quality as determined by field engineer. Materials and placing of rip-rap shall be as follows unless otherwise provided on the plans or as determined by field engineer.

Rip-Rap. Stone pieces shall range in mass from approximately 24 lbs (11 kg) to 150 lbs (68 kg) with not less than approximately 50 percent of the pieces weighing more than 60 lbs (27 kg). Rip-rap shall be at least 12 inches thick measured perpendicular to slope. Rip-rap shall not be placed against or in contact with concrete prior to 7 day cure minimum.

Medium Random & Heavy Rip-Rap. Shall not be less than 18 inches thick for medium random and 24 inches thick for heavy rip-rap perpendicular to slope.

- C. Geotextile Filter Fabric. Furnish and install geotextile fabrics for subgrade separation and stabilization, drainage filtration, subgrade reinforcement and under culverts and rip-rap in accordance with plans. Type of fabric to be used shall be in accordance with particular application as follows:

- Type R - Rip-rap
- Type SR - Subgrade Reinforcement
- Type HR - Heavy Rip-rap
- Type DF - Drainage Filtration
- Type MS - Marsh Stabilization
- Type SAS - Subgrade Aggregate Separation
- Type ES - Embankment Stabilization

Fabric shall be insect, rodent, mildew and rot resistant and shall be furnished in a wrapping clearly marked showing the type of fabric.

- D. Installation. Install filter fabric as shown and in accordance with manufacturer's recommendations. Surface to receive fabric shall be smooth and free of obstructions, depressions and debris. Lay fabric parallel to direction of water flow. If lapping of fabric is required, minimum overlap shall be 2 ft. Overlaps may be eliminated if fabric sections are either factory or field sewn. Seam strength shall be at least 80% of fabric tensile strength. Secure fabric in place to prevent shifting before or during placement of stone or rip-rap. Place rip-rap from base of slope upward, height of rip-rap freefall shall be no more than 1 ft. Repair or replace torn or punctured fabric in accordance with manufacturer's instructions, no extra compensation will be allowed.

## SECTION 02810

### LANDSCAPE IRRIGATION

#### 1. General:

- A. Automatic irrigation system to be manufactured by Rainbird or equal and is a design/build system by the contractor. Submit shop drawings and cut sheets to Menards for approval prior to any installation. All materials supplied by contractor and are to be purchased through a Menard retail outlet. Contractor to provide proof of purchase for all materials. System to provide 100% coverage of all landscaped areas or as designated on the plans. All sprinkler mains and equipment to be installed within Menards property line. Control panel/time clock with lockable cover to be installed inside sprinkler room. Contractor shall include winterizing and start-up of the system for two years within bid price. Installation of underground, automatically controlled lawn and shrub bed irrigation system, including electrical connections, connections to water mains and necessary accessories.
- B. Hose Bibs. Shall be installed at location(s) indicated on sheet L-1 of the general construction plans. Water pressure to be “live” at all times at hose bib locations.
- C. Provide and execute 2-Year Maintenance Agreement (include this in bid proposal).
- D. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Related Sections:

- A. Section 02222 – Excavation, Backfill and Compaction for Utilities.
- B. Section 02660 – Water Distribution Systems.
- C. Section 02900 – Landscaping.
- D. Local governing authority and code requirements.

- E. Construction drawings.
- 3. Reference Standards:
  - A. American Society for Testing & Materials (ASTM) latest edition.
    - 1. D2239 – Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter.
    - 2. D2241 – Poly (Vinyl Chloride)(PVC) Pressure-Rated Pipe (SDR –Series).
    - 3. D2609 – Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe.
    - 4. D2855 – Making Solvent-Cemented Joints with Poly (Vinyl Chloride)(PVC) Pipe and Fittings.
  - B. National Fire Protection Agency (NFPA) latest edition
    - 1. 70 – National Electrical Code
- 4. Quality Assurance:
  - A. Perform piping installation in accordance with Section 02660 or as specified on the Construction drawings.
  - B. Following installation, make final adjustments to lawn irrigation system prior to Owner's final inspection.
    - 1. Flush system completely, with nozzles and screens removed, to extract debris.
    - 2. Verify sprinkler operation and alignment for direction of throw. Correct as necessary at no additional cost to the Owner.
    - 3. Check pop-up spray nozzling for proper arc of spray with no overthrow onto pavement. Adjust nozzles as necessary for proper throw with no additional cost to the Owner.
    - 4. Insure uniform distribution exists.
    - 5. Insure proper sprinkler head operational after landscaping and/or sod installation.
  - C. Following final adjustment, operate entire installation to demonstrate complete and successful operation of equipment.
  - D. Guarantee installation for 2 years from date of final acceptance for the following.
    - 1. Defects in material, equipment and workmanship.
    - 2. Repair of damage to premises resulting from leaks or other defects in material, equipment, workmanship to satisfaction of Owner.
  - E. Repairs, if required, shall be done promptly at no cost to Owner.

F. Parts Manufacturer's warranties shall be provided to Owner.

5. Submittals:

A. Submittals:

1. Required for items specified herein. Provide 2 copies of each to Owner for review.
2. Do not proceed with purchase or installation of materials prior to receipt of approved submit from Owner.

B. Substitutions shall be made only with written approval of Owner. Substitutions will not be considered prior to opening of bids.

1. Substitution of specified irrigation heads after awarding of bid shall require piping diagram not revised pipe sizes, pressure loss calculations and head locations necessary to achieve desired watering provided by system as shown on Construction drawings.
2. Provide 3 copies each of product data for requested substitutions to Owner for review.

6. Project Record Documents:

A. **Contractor shall document and provide as-built drawings verifying, to a high degree of accuracy, the location of the following listed utilities; storm sewer, sanitary sewer, water mains and automatic irrigation system. All as-built drawings must be submitted to Menards on reproducible bond prior to final payment.**

B. In the event a surveyor was used to locate all utilities per the drawing, the licensed surveyor may provide a signed voucher identifying those utilities located true to the drawings in lieu of the as-built drawing submittal.

C. As-built drawings: 2 sets, noting exact locations of elements and changes to Construction drawings. All as-builts to be on electronic format provided to Menard, Inc. on a CD Rom TIF Image Document.

D. Operation Manual: To be on a CD Rom on a TIF Image Document. Manual is to include following:

1. Approved submittals as specified herein.
2. Installation instructions including mounting details for control valves.
3. Operating Instructions:
  - a) Winterization procedures.

- b) Recommended operation sequence, frequency, and length of operation cycle, as per relationship to estimated absorption rate, evaporation rate and anticipated flow.

4. Maintenance Instructions:

- a) Manufacturers' product data, installation and maintenance instructions.
- b) Copies of completed warranty information. Contractor to complete and mail necessary warranty registration information to manufacturer keeping copies for Owner.

E. **Controller Chart: Prepare color coded chart, reduced in size, containing same plan information as As-Built drawings, and laminated in plastic on both sides, with following specific information:**

- 1. Note routing of control wires.
- 2. Identify valves as to size, station number shown on controller and type of irrigation head (e.g. spray head, turf head) on each valve.
- 3. Delineate each station's limits of coverage by color coding, with each station having different color showing it's zone with zone number designation.

7. Project Conditions:

- A. Visit site and become familiar with nature and location of work, existing conditions, and conditions that will exist during installation.
- B. If irrigation work is part of General Construction Contract, then meter shall be provided by Plumbing Subcontractor in accordance with Section 02660. If irrigation work is not part of General Construction Contract, General Contractor shall contract with any pay local utility company, including meter deposit, to tap watermain and install meter(s) required.

8. Maintenance:

- A. Once each month, for first 6 months of operation following Final Acceptance, provide on-site consultation with Owner's operating personnel. This shall include up to 4 hours time each month.
- B. Maintenance agreement:
  - 1. **Prior to beginning installation, execute bonded, written Extended 2 Year Maintenance Agreement with Owner for period of 2 years from date of Final Acceptance for the following:**
    - a) Spring start-up of system in accordance with Section 02900.
    - b) Monthly checks of system during operating season.

c) Winterization of system in accordance with Section 02900.

2. Costs for additional work required for repair of items not covered by warranty (e.g. damage by others) shall be negotiated between Owner and Contractor prior to initiation of any repairs.
3. Costs for Extended 2-Year Maintenance Agreement are over and above Contract Sum and shall not be included in construction price. Payment for extended maintenance by Owner shall occur upon completion of scheduled service and additional work, if any, as it occurs on monthly basis throughout duration of Extended 2-Year Maintenance Agreement.

9. Manufacturers:

A. Acceptable manufacturers shall include:

1. Rainbird purchased through a Menards retail outlet.
2. Approved equal.
3. All other materials for a complete installation to be purchased through a Menard retail outlet.

10. Pipe:

- A. Polyvinyl Chloride (PVC) Main Line: Pipe shall conform to ASTM D2241, Schedule 40.
- B. Polyvinyl Chloride (PVC) Lateral Line: Pipe shall conform to ASTM D2241, Class 200.
- C. Flexible Polyethylene (PE) Lateral Line: Pipe shall conform to ASTM D2239, SDR 11.5, PE23, rated at 100 PSI, National Sanitation Foundation (NSF) approved. Subject to approval of Owner, shall be utilized for laterals in areas where ground is subject to freezing for extended periods of time each year.
- D. Pipe sizes 2½ inch or smaller shall have bell and socket joints.
- E. Pipe sizes larger than 2½ inch shall have snap connections with rubber gasket joints. Thrust blocking shall be required in accordance with Section 02660.

11. Fittings:

- A. Sleeves: Sleeves shall conform to ASTM D 2241, Schedule 40. Minimum diameter of 2 inch or 2 sizes larger than pipe scheduled to pass through them.
- B. Plastic Fittings:



1. Polyvinyl Chloride (PVC) Main Line Fittings: Fittings shall conform to ASTM D2241, Schedule 40 or 80.
2. Polyvinyl Chloride (PVC) Lateral Line Fittings: Fittings shall conform to ASTM D 2241, Schedule 40 or 80.
3. Flexible Polyethylene (PE) Lateral Line Fittings: Fittings shall conform to ASTM D 2609, Type 1 PVC insert fittings designed for used with this type of pipe. Pipe and fittings shall be jointed with stainless steel pinch clamps or wormgear clamps, including stainless steel screw.
4. Risers above finished grade shall be black in color or receive 2 coats of black exterior semi-gloss enamel paint if a color other than black.

C. PVC Solvent Cement: Cement shall conform to ASTM D 2564.

D. Swing Joint Connections: Connections between heads and laterals shall be thick wall, flexible polyethylene pipe, with fittings that have male barbs on one end and either male or female screw ends opposite. Glue fittings and female barb adapters are not allowed. Pipe and fittings shall be as specified in 2.01 above.

12. Ball Valves: 3 Inches or Smaller

A. Cut off or isolation valves shall be as manufactured by Red-White Valve Corporation, Carson, CA, or approved equal.

13. Mechanical Joint Valves: Larger than 3 Inches

A. Cut off or isolation valves shall be of cast iron and bronze construction and have fusion bonded epoxy coated, exterior and interior, finish as Resilient Wedge Valve, manufactured by Clow Valve , Oskaloosa, Iowa or approved equal.

B. Provide with each valve a valve key and cast iron cylindrical valve box with top.

14. Quick Coupler Valves:

A. Each with key having  $\frac{3}{4}$  inch male top pipe threads for hose connection.

15. Electric Control Valves:

A. As manufactured by Orbit.

B. Provide water-tight connectors with sealant for connections.

16. Master Valves:

A. Shall be electric control valve as specified herein.

- B. Size of valve shall be same as diameter of main line pipe as noted on Construction Drawings.
  - C. Provide water-tight connectors with sealant for wiring connections.
17. Sprinkler Heads:
- A. Full or part Circle Pipe-Up Fixed Spray Sprinkler:
    - 1. If not specified on construction drawings, pop-up heights shall be:
      - a) Turf – 4 inches.
      - b) Shrub and groundcover beds shall be non-exposed drip irrigation piping.
    - 2. Acceptable Products:
      - a) As manufactured by Orbit.
  - B. Full or Part Circle Pop-up Gear Driven Rotor Sprinkler.
    - 1. Acceptable Products:
      - a) As manufactured by Orbit.
18. Valve Box:
- A. Valve boxes shall be manufactured by Ametek, Plymouth Products Division, Sheboygan, WI., or approved equal. No irrigation valve box(es) shall be placed in pavement areas unless otherwise specified on the construction drawings.
    - 1. When used with single valve, provide Economy Turf Box with green colored snap fit cover labeled “Valve Box”.
    - 2. When used with 2 or more valves, provide Jumbo Box with 20 inch x 14 inch cover opening with cover labeled “Control Valve”.
    - 3. Valve Box shall be set level and flush with surrounding finish grade.
19. Low Point Drains:
- A. Required on all zones. Automatic drain valves as manufactured by Orbit.
  - B. Provide 2 at lowest points of each zone, with each drain installed above a 12 inch x 12 inch x 12 inch deep area of coarse gravel.
20. Automatic Controller:

- A. Controller shall have wall mount, weatherproof, lockable cabinet with internal transformer (locate in the sprinkler room unless otherwise specified). Use multiple controllers if additional zones are required. Acceptable products include:
  - 1. As manufactured by Orbit.
- 21. Control Wire:
  - A. Number 14 size minimum copper wire, U.L. approved for underground direct burial.
    - 1. Colored wire shall have same color coding as shown on controller.
    - 2. Provide single wire from controller to each valve.
    - 3. Provide common neutral from controller to each valve.
- 22. Backflow Preventor:
  - A. Comply with requirements and codes of local governing authority regarding backflow prevention.
  - B. Provide the necessary materials, insulation/draining capabilities, and insulated fiber glass enclosure, dark green in color.
  - C. Backflow preventors shall be type suitable for use in high hazard cross connection to potable water system as manufactured by Watts Regulator Company, Lawrence, MA., or approved equal:
    - 1. Reduced pressure backflow preventors shall be No. 909 series Reduced Pressure Principle Backflow Preventor, or approved equal.
    - 2. Double check valve assembly backflow preventors shall be No. 709 series Double Check Valve Assembly, or approved equal.
    - 3. In absence of local codes or requirements, double check assembly backflow preventor installed in strict accordance with manufacturer's written instructions shall be considered as minimum requirement.
- 23. Rainfall Sensor:
  - A. **Provide rainfall sensor to cancel operation of controller during substantial rainfall. Acceptable products include:**
    - 1. **Mini-Click Rain Sensor manufactured by Orbit or equal.**
- 24. Meter:
  - A. Meter box shall meet or exceed requirements set forth by local utility company.
  - B. Provide separate meter for the irrigation system.

25. Preparation:

- A. Pressure/Flow Test: Conduct tests at the irrigation water tap or meter location and provide written results to Owner including the following information:
  - 1. Static pressure in psi.
  - 2. Residual pressure in psi.
  - 3. Flow in gpm.
- B. **Prior to installation, receive approval from general contractor to proceed with construction.**

26. Excavation:

- A. Excavate trench to proper depth.
- B. Minimum trench width shall be 3½ inches.
- C. Backfill and hand tamp over-excavation prior to installing piping.
- D. Excavate trenches deeper than required in soils containing rock or other hard material that might damage pipe. Backfill to proper depth with selected fine earth or sand.
- E. Keep trenches free of obstructions and debris that would damage pipe.
- F. Avoid heating trenches, electric ducts, storm and sanitary sewer lines, water and gas mains when trenching for piping.
- G. Do not cut sidewalks, paved areas, or curb and gutter when trenching for piping unless otherwise noted on the construction drawings.
  - 1. **Provide sleeves (as specified in 2.03 A. above) under paving prior to installation of paving.**
  - 2. Under existing paving, auger bore or tunnel without disturbing existing pavement above. Any damaged pavement will be removed and replaced according to specification section 02511.

27. Piping System:

- A. Minimum cover from top of piping to finished grade shall be provided as follows:
  - 1. Lawn and planting areas:
    - a) Mains and Control Valves: 18 inches.
    - b) Laterals: 12 inches.
  - 2. Drives or parking areas: 24 inches.

- B. Clearances: Minimum of 3 inches horizontal clearance between parallel lines in same trench or vertical clearance between lines crossing at angles.
- C. Special Requirements – PVC and PE pipe:
  - 1. Snake in trench at least 1 foot per 100 feet of pipe to allow for thermal expansion.
  - 2. Pipe laterals to drain to low point drains located at lowest elevations of each zone.

28. Sleeving:

- A. Provide sleeves for both piping and control wiring where either passes under paved surfaces:
  - 1. Depths of sleeves shall be same as that required for piping at each location or condition.
  - 2. Extend sleeves 12 inches beyond paving at each end.
  - 3. Install permanent benchmark at top of curbs for reference to sleeve locations.

29. Piping Installation:

- A. Do not lay pipe in unstable material or blocking, or when in opinion of Owner conditions are unsuitable.
- B. Rest full length of pipe section on bed of trench, excavating recesses to accommodate joints.
- C. Hold pipe securely while joints are being made.
- D. Threaded Plastic Pipe:
  - 1. Do not use solvent cement on threaded joints.
  - 2. Wrap joints with Teflon tape or use virgin Teflon lubricant.
- E. Bell and Socket Plastic Pipe: Cemented joints in accordance with ASTM D2855.

30. Valves:

- A. Do not locate beneath paved surfaces.
- B. Install plumb to within 1/16 inch.
- C. Locate within valve box with 6 inch deep layer of coarse gravel beneath bottom of valve.

- D. Top of quick coupler valves shall be 6 inches to top of valve box. Top of gravel layer shall be 3 inches below top of valve.
  - E. Master Valve (if provided on construction drawings):
    - 1. Locate immediately behind backflow preventor.
    - 2. Valve shall be energized by master valve circuit on automatic controller.
31. Sprinklers:
- A. Install plumb to within 1/16 inch, with top collar, not nozzle, flush with finish grade.
  - B. Provide swing joint with each sprinkler, except where entire head is raised above grade and/or where rigid riser piping is required.
  - C. Heads adjacent to paving and curb: Locate between 6 inch and 12 inches from edge of paving or back of curb to prevent car overhang to conflict with a fully extended sprinkler. Check location of spray to assure no water will spray on walkways, pavement, building, fences, vehicles or pedestrians.
32. Electrical Connections and Control Wire:
- A. Shall be in strict accordance with latest edition of National Electrical Code and local electrical codes.
  - B. Provide electrical connection to system as designated on construction drawings and as specified herein.
  - C. General:
    - 1. Do not run control and power supply wiring in same conduit.
    - 2. Provide continuous runs of wire between controller and valves. Splices shall be made with one of the following:
      - a) Watertight below ground electrical junction boxes.
      - b) Watertight connectors, such as utilized for valves, and located within valve box for ease of locating.
      - c) The location of any and all electrical splices shall be shown on the As-Built provided for herein in 1.06A.
    - 3. Bury control wire beside pipe in same trench. Bundle and tape together at not more than 10 ft. intervals.

- D. Expansion Loops: Constructed by wrapping wire around ½ inch diameter pipe to create coil. A 3 foot section of wire shall be used to create 12 inch coil with 6 foot section being used to create 24 inch coil.
    - 1. Provide 12 inch coils at each wire splice, not including valves, and at each change of wire direction.
    - 2. Provide 24 inch coils at each control valve and where each valve enters conduit for automatic controller.
33. Backfilling:
- A. Sand or fine grained soils should be used for initial backfill to sufficient depth to prevent damage to pipe from rocks or other debris during compaction of subsequent backfill.
  - B. Fill trench to within 3 inches of finish grade with excavated soil and compact in accordance with Section 02222.
  - C. Fill top 3 inches with existing topsoil in planting or turf areas and wheel roll until compaction of backfill is same as surrounding soil.
  - D. Grade backfilled trench uniform with surrounding grades.
34. Backflow Preventor:
- A. Comply with local codes for installation of backflow preventor. In absence of local codes, minimum requirements shall be to set in accordance with manufacturer's written instructions.
  - B. Provide combination of drains and quick coupler valves to accommodate winterization of entire system with forced air. Submit materials/methods to owner for consideration and receive approval prior to installation of work.
35. Automatic Controller:
- A. Location and installation shall be as shown on construction drawings and approved by Owner installation.
  - B. Provide rigid conduits for both power supply and control wiring.
    - 1. Control wire conduit shall extend to 18 inches below grade.
    - 2. Secure conduit to wall with anchors and screws.
  - C. Provide electrical grounding for controller in accordance with manufacturer's written instructions.

## SECTION 02831

### CHAIN LINK FENCES AND GATES

1. General:

- A. Contractor shall install of chain link fences and gate. Materials to be supplied by Menards
- B. Refer to architectural building and site plans for fencing location.
- C. Wrought iron fence and gate.
- D. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Manufacturer:

- A. Menards will supply all chain link materials necessary for a complete installation. All materials manufactured by Master Halco, Inc.
- B. Menards will supply all wrought iron materials for a complete installation. All materials as manufactured by All-Loc Fence
- C. Anchor bolts supplied by contractor.

3. Gate Assembly:

- A. Assemble gate frames by welding or special fittings and rivets, for rigid connections. Install same fabric as for fence with stretcher bars at vertical edges. Install diagonal cross-bracing on gates as required to ensure rigid frame without sag or twist. Bars may be used at top and bottom edges. Attach stretchers to gate frame at 12 inches o.c. maximum.
- B. Attach hardware to provide security against removal or breakage.

4. Concrete Mixing:



- A. Mix materials to obtain concrete with minimum 28 day compressive strength of 3000 psi; 1 inch maximum size aggregate, maximum 3 inch slump, and 2-4 percent entrained air.
5. Installation:
- A. Comply with recommended procedures and instructions of fencing manufacturer. Provide secure, aligned installation with line posts spaced at 10' – 0" o.c. maximum or as specified on drawings.
  - B. Grade Set Posts: Drill or hand excavate using post hole digger in firm undisturbed or compacted soil.
  - C. Excavate hole for each post to minimum diameter recommended by fence manufacturer but not less than 4 times the largest cross-section of post. Excavate hole depths not less than **36 inches below finish grade surface**.
  - D. Center and align posts in holes with bottom of posts 3 inches above bottom of excavation.
  - E. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations. Concrete to be flush with surrounding area and finished.
  - F. Sleeve Set Posts: Anchor posts by means of pipe sleeves present and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with nonshrink non-metallic grout, mixed and placed to comply with grout manufacturer's directions.
  - G. Top Rails: Install rail continuously, bending to form radius for curved runs. Provide expansion couplings as recommended by manufacturer.
  - H. Center Rails: Install center rails where indicated. Install in 1 piece between posts and flush with post on fabric side, using special offset fittings where necessary.
  - I. Bottom Rails: Install bottom rails. Install in 1 piece between posts and flush with post on fabric side.
  - J. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
  - K. Tension Wire: Install tension wires through post cap loops before stretching fabric and tie to each post cap with not less than 6 gauge vinyl coated wire. Fasten fabric to tension wire using vinyl coated wire tie provided spaced 24 inches o.c.

- L. Fabric: Leave approximately 1 inch between finish grade and bottom edge of fabric. Pull fabric taut and tie to posts, rails and tension wires. Install fabric on security side of fence and anchor to framework so that fabric remains in tension after pulling force is released.
- M. Stretcher Bars: Secure at end, corner, pull and gate posts by threading through or clamping to fabric at 4 inches o.c. and secure to posts with vinyl coated metal bands spaced at 12 inches o.c.
- N. Tie Wires:
  - 1. Use U-shaped wire, conforming with diameter of pipe to which attached, clasping pipe and fabric firmly when ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing.
  - 2. Tie fabric to line posts with wire ties spaced 12 inches o.c. Tie fabric to rails and braces with ties spaced 24 inches o.c. Tie fabric to tension wires with wire ties spaced 24 inches o.c.
  - 3. Manufacturer's standard procedure will be accepted if of equal strength and durability.
- O. Fasteners: Install nuts for tension bands and hardware bolts on site of fence opposite fabric side. Tie ends of bolts or score threads to prevent removal of nuts.
- P. Gates: Install gates plumb, level and secure for full opening without interference. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubrication.
- Q. Touch paint all scratched, abraded or damaged areas with vinyl paint, color to match.
- R. Subcontractor will be responsible for any labor to adjust or repair any fence supplied by Menards for two years after store opens.

## SECTION 02900

### LANDSCAPING

- 1. General:
  - A. Provide all materials, equipment, tools, transportation, services and labor necessary for the complete installation of turf, forbs, shrubs, trees and associated materials in accordance with the plans, specifications and the contract.
  - B. Work included:
    - 1) Final topsoil preparation.
    - 2) Seeding.

- 3) Sodding.
- 4) Fertilizing.
- 5) Weed control.
- 6) Mulching.
- 7) Plant material installation.
- 8) The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Existing Vegetation Protection and Restoration

A. Description

- 1) This work consists of protecting and preserving vegetation from damage and taking corrective action when damage occurs. Vegetation includes but is not limited to trees, brush, roots, woody vines and perennial forbs and grasses.

B. Work Included

- 1) Plant Materials
  - a) Plant installation.
  - b) Turf establishment.
- 2) Temporary fence. The contractor shall provide temporary fence that is:
  - a) At least 4' high.
  - b) Conspicuous in color.
  - c) Commercially available snow fence or other fencing material acceptable to Menards
- 3) Water. Water shall be suitable for irrigation and free from ingredients harmful to plant life. Contractor will furnish hoses, water and watering equipment required for work.
- 4) Topsoil. If the quantity of excavated topsoil is inadequate for planting purposes, sufficient additional topsoil shall be furnished on site by the Contractor. The surface of the topsoil shall not contain any clods, lumps, rocks, debris, etc. larger than 1/2" diameter.

- C. Protecting and Preserving. The contractor shall protect and preserve specimen trees, threatened and endangered plants, as listed on the federal and state threatened and endangered species list, vegetation designated in the contract to be preserved, trees, brush and natural scenic elements outside the actual limits of clearing and grubbing and other vegetation the engineer or Menards identifies to be protected and preserved.

The Contractor shall not place temporary structures, store material or conduct unnecessary construction activities within a distance of 10' outside of the dripline of trees designated to be preserved without approval from the engineer or Menards

The Contractor shall not place temporary structures or store material (including common borrow and topsoil) outside of the construction limits in areas designated in the Contract to be preserved.

- 1) Temporary Fence. The Contractor shall place temporary fences to protect vegetation before starting construction. The Contractor shall place temporary fence at the construction limits and at other locations adjacent to vegetation designated to be preserved when specified in the contract, directed or allowed by the engineer or Menards. The Contractor shall not remove the fence until all work is completed or until removal is allowed by Menards. The fence shall prevent traffic movement and the placement of temporary facilities, equipment, stockpiles and supplies from harming the vegetation.

- 2) Clean Root Cutting. The Contractor shall cleanly cut all tree roots at the construction limits when specified in the contract or directed by the engineer or Menards

The Contractor shall immediately and cleanly cut damaged and exposed roots. Trees designated for protection shall have damaged roots cut back to sound healthy tissue and shall have topsoil immediately placed over the exposed roots. The Contractor shall immediately cover root ends that are exposed by excavation activities with 6" of topsoil as measured outward from the cut root ends. The Contractor shall limit cutting to a minimum depth necessary for construction and shall use a vibratory plow or other approved root cutter prior to excavation.

- 3) Watering. The Contractor shall water root-damaged trees during the growing season when root damaged occurs in order to maintain adequate but not excessive soil moisture. The Contractor shall saturate the soil within the undisturbed portion of the dripline of impacted trees to a depth of 20". The Contractor shall adjust the intervals and frequency of watering according to prevailing moisture and weather conditions.
- 4) Topsoil. The Contractor shall place topsoil, instead of common borrow fill, within the dripline of specimen trees when specified in the Contract or directed by the engineer or Menards

The Contractor shall place the topsoil in a manner that will avoid over-compaction. The Contractor shall establish turf consistent with the adjacent areas.

- 5) Pruning. The Contractor shall prune trees specified in the contract or as directed by Menards in accordance with plant installation. Pruning shall include the removal of dead, broken, rubbing branches and those limbs that may interfere with existing and proposed structures.
- 6) Destroyed or Disfigured Vegetation. If the Contractor destroys or disfigures vegetation designated to be preserved, the Contractor shall, at no expense to Menards restore the damaged vegetation to a condition equal to what was existing before the damage was done. Menards may assess damages against the Contractor on vegetation where an equal level of restoration is not accomplished. Menards will assess damages of trees and landscaping at not less than the appraisal damages as determined by the International Society of Arboricultural appraisal guide. Menards will determine and assess damages of other vegetation.
- 7) Oak Trees. The Contractor shall avoid wounding of oak trees located on projects south of the 46 degree parallel during April, May and June in order to prevent the spread of oak wilt. If Menards determines that work must take place near oak trees during those months, resulting wounds shall immediately be treated with an asphaltic base wound dressing.
- 8) Other Vegetation Protection Measures. The Contractor shall provide other vegetation protection measures; including root system bridging, compaction reduction, aeration and retaining walls; as specified in the contract or as directed by the engineer or Menards

### 3. Plant Material Installation

#### A. Description

- 1) This work consists of furnishing and planting trees, shrubs, vines and perennials of the species, variety, grade, size or age and root category specified, complete in place at the locations designated on the plans or as directed by Menards. It may also consist of planting or transplanting plants furnished by Menards. It also includes furnishing all necessary materials and performing all necessary work such as excavating plant holes, salvaging topsoil, potting, transplanting, backfilling, pruning, mulching, watering, heeling in, fertilizing, wrapping, guying and bracing, rodent protection and anti-desiccant, disposing of surplus and waste materials, necessary care and required replacements pending acceptance, and such work necessary or

incidental thereto to complete the installation in accordance with the plans, specifications and contract.

B. Materials

1) Plant Materials.

a) General

- i) Unless otherwise specified, all plants shall be nursery grown stock and shall be typical of their species and have well-formed tops and root systems and shall be free from injurious insects, plant diseases or other plant pests. Plants shall be hardy under the climatic conditions at the site of the work. Plants furnished shall be free from the following defects:

- \* Serious injuries to top, branches, trunk, bark or roots.
- \* Dried out roots.
- \* Prematurely opened buds.
- \* Thin or poor tops or root systems.
- \* Evidence of mold.
- \* Dry, loose or broken ball of earth in B & B stock.
- \* Dried out or damaged soil mass in BRP, B & P or CG stock.

- b) Substitutions. Substitutions may be allowed, however, the Contractor shall provide written documentation that the specified plant is not available or will not perform as anticipated due to site limitations and that the substitute plant meets the contract requirements. All substitutions must be approved through Menards prior to any installation.

- c) Plant Grading Standards. Plant stock shall conform to the code of standards set forth in the current edition of the American Standard for Nursery Stock recommended for general use and adoption by the American Association of Nurserymen, Inc.

- d) Plant Names and Labels. The nomenclature used in the plans and specifications conforms, with few exceptions, to that of the current edition of Standardized Plant Names as adopted by the American Joint Committee on Horticultural Nomenclature. All plants shall be true to name and each bundle or plant shall be legibly and securely labeled with the name and size of the plant material.

- e) Plant Selection and Approval. The contractor shall furnish to Menards a written list of the sources from which the contractor proposes to obtain plant material for the work. Such list shall be furnished to Menards at least 15 days prior to the date that such plant materials are to be delivered to the planting, potting or holding site.

All plants shall be subject to the approval of the Menards. Plants may be inspected at the grower's nursery or at the place of collection. Representative plants may be tagged at the grower's nursery. Approval of plants at the source does not alter the right of rejection at the project site.

All rejected plants shall be replaced with acceptable plants of the same species, variety and size, unless otherwise directed by Menards

All plants shall conform to the measurements specified on the landscape plan, with one exception; (1) plants larger than the specified list may be used if approved by Menards, but use of such plants shall not increase the contract price. If the use of larger plants is approved, the spread of the root or ball of earth shall be increased in proportion to the size of the plant.

- f) Owner Furnished Stock & Transplant Stock. Owner furnished stock and transplant stock shall be obtained from sources designated in the Plan or Special Provisions.
- g) Digging, Handling & Packing Plant Stock. All plant stock shall be dug and handled with care and skill to prevent injuries to the trunk, branches and roots, and shall be packed in an approved manner to insure arrival at the project site in good condition.

The plant stock shall be transported in enclosed vehicles or, in lieu of the enclosed vehicle, the plant tops shall be suitably protected from drying.

All plants furnished with earth balls or in containers shall be handled by the ball or container.

## 2. Related Materials

- a) Backfill Material
  - i) Compost. Compost shall be a standard commercial compost of cattle, sheep or poultry manure or other organic material.

- ii) Peat Moss. Peat moss shall consist of at least 75 percent of partially decomposed stems and leaves of sphagnum, hypnum, polytrichum and other mosses in which the fibrous and cellular structure is still recognizable. It shall be nearly free of decomposed colloidal residue, wood and other foreign matter and shall be brown to black in color. Humus peat will not be acceptable. Peat moss shall have the following characteristics:

Moisture content shall not exceed 60 percent by mass.

Ash content shall not exceed 20 percent, based on the oven dry mass of the material.

The pH value shall be not less than 3.2 nor greater than 7.0 at 25 C.

Water holding capacity shall be not less than 400 percent, by mass, on an over dry basis.

Upon request the contractor shall furnish the engineer with a representative sample of the peat moss for testing in accordance with the Federal Specification for Peat, Moss; Peat, Humus; and Peat, Reed-Sedge numbered Q-P-166e.

**The contractor shall furnish Menards with a certificate stating the type of peat moss, the brand name and the country or place of origin.** If packed in bales and if bale size is used in determining quantities for mixing, the certificate shall also contain the cubic yards of compressed bale size, the compression ratio and the approximate mass of the bales. A certificate will not be required if this information is marked on the bales.

- iii) Topsoil. Topsoil for use in planting shall conform to the following requirements:

The surface of the topsoil shall not contain any clods, lumps, rocks, debris, etc. larger than 1/2" diameter.

Topsoil shall be salvaged from the plant hole excavation whenever such topsoil conforms to the above requirements. The sod from the plant hole excavation may be used for backfill, together with topsoil, providing it is thoroughly broken into small pieces and used in limited quantities near the bottom of the plant hole and in such manner that it will not be in contact with the small feeder roots.



- iv) Potting Mixture. Potting mixture shall consist of a mixture of peat moss, topsoil and sand in a ratio of 1:1:1 by volume. Fertilizer shall be thoroughly incorporated in the mixture at the rate of 4.2 lb. of fertilizer to each cubic yard of mixture.

The peat moss and topsoil shall conform to the previously mentioned sections.

- b) Fertilizer. Fertilizer shall conform to the pertinent requirements of Section 02900, Subsection 8 and to the following:

- i) Fertilizer for Potting Mixtures. Unless otherwise specified, the fertilizer to be mixed with the potting soil shall be a superphosphate meeting the following minimum requirements:

Nitrogen.....	0%
Phosphoric Acid .....	20%
Potash.....	0%

- ii) Fertilizer for BRP Stock. Fertilizer to be placed on the soil in containers shall be of the controlled release type and shall have the following minimum requirements:

Nitrogen, not less than.....	18%
Phosphoric Acid, not less than.....	9%
Potash, not less than.....	9%

The fertilizer shall consist of granules of soluble nutrients, each granule of which shall be enclosed in a water permeable resinous film.

The fertilizer shall be spread evenly over the top of the container at the rate of 3.4 LB/CYD of container volume.

- iii) Fertilizer for Plant Holes. Fertilizer to be used in plant holes shall be a water soluble fertilizer contained in a micropore slow release polyethylene packet. The amount of fertilizer in each packet shall be a minimum of 1 lb.

The fertilizer shall meet the following minimum requirements:

Nitrogen, not less than.....	16%
Phosphoric Acid, not less than.....	8%
Potash, not less than.....	16%

- c) Water. Water shall be free of oil, acids, alkalis, salts and other substances harmful to plants. Water suitable for human consumption will be acceptable without testing. Water from streams and lakes shall not be used without Menards approval. When Menards requires testing, an approved testing laboratory shall perform the tests at no expense to Menards
- d) Mulch. Mulch shall consist of shredded bark or wood chips. Mulch for these operations will be **supplied by Menards** Mulch material used in storage of plants is to be **supplied by contractor**.
- e) Wrapping. The trunks of trees will be protected by a 4" PVC drain tile, minimum length of 18".
- f) Wound Dressing. Wound dressing, when required, shall consist of an asphalt base tree paint or other acceptable material suitable for application by brushing or spraying on bruised or cut surfaces of plants.
- g) Rodent Protection. Rodent protection shall consist of aluminum or other metal commercial window screening material if needed.
- h) Bracing & Guying Materials. These materials shall consist of such wood or steel stakes, wire, soft rope or straps, turnbuckles and other material as needed to perform the work. Stakes shall be of solid durable wood approximately 2" by 2" and of the required length, except that stakes used for bracing may be approved steel posts of the required length.

Wire shall be of good quality 12 gauge diameter steel wire when used for trees of 4" or less in diameter and 10 gauge diameter steel wire for trees over 4" in diameter. A suitable turnbuckle for adjusting the wire tension shall be used with the larger wire.

- i) Anti-Desiccant. Anti-desiccant shall be an approved emulsion, which will provide a film over plant surfaces permeable enough to permit transpiration.
- j) Vegetation Control Herbicide. Vegetation control herbicide shall be a post-emergence herbicide which, when applied to leaves and stems of vegetation, is absorbed and translocated to all parts of the plant including roots and underground stems and is thereby capable of killing the entire plant. It shall be water soluble and deactivate upon contact with soil, leaving no harmful residue.
- k) Selective Pre-emergence Herbicide. The selective pre-emergence herbicide shall be a type, which controls plants emerging from seed, but

has not harmful effect on established plants when applied at recommended rates. The material shall resist leaching and remain effective throughout one growing season. The selective pre-emergence herbicide shall be in liquid or wettable powder form.

- l) Weed Barrier Fabric. Weed barrier fabric for planting beds and landscaped islands will be supplied by Menards
- m) Miscellaneous Materials and Equipment. Miscellaneous materials and equipment consists of preparatory work, staking items and equipment necessary to install plants as specified and maintain plants in a healthy and vigorous condition, free from weed encroachment.

C. Construction Methods For Woody Plants

1) Digging, Handling and Packing Plant Stock

- a) All plant stock shall be dug and handled with care and skill to prevent injuries to the trunk, branches and roots and shall be packed in an approved manner to insure arrival at the project site in good condition. The plant stock shall be transported in enclosed vehicles or, in lieu of the enclosed vehicle, the plant tops shall be suitably protected from drying. All plants furnished with earth balls or in containers shall be handled by the ball or container.
- b) Bare Root Stock (BR). Plant stock to be furnished BR shall be moved with the roots protected against drying out by the use of moist sphagnum moss, straw or other suitable material and covered with canvas or other suitable covering in an approved manner.
- c) Bare Root Potted Stock (BRP). Plant stock to be furnished BRP shall be bare root plants potted in accordance with the following requirements and the planting details shown on the plans.

The potting shall be the responsibility of the contractor and shall be done by placing the plant in the plantable fiber container of the specified size and then placing and compacting the potting mixture backfill so that the elevation of the plant root collar and the backfill material is approximately 1 inch below the top of the container.

The potting shall including pruning of plants before or at the time of potting and working the plant around as the potting mixture is added to insure that the roots are naturally spread or spaced within the pot. Fertilizer conforming to Subsection 8 shall be placed on the soil in the pot after potting in accordance with the requirements of such Subsection.

Only live, healthy, vigorously growing BRP plants will be acceptable for planting at the designated locations on the project site.

- d) Balled and Burlapped Stock (B & B). Plant stock to be furnished B & B shall be moved with a compact dug ball of earth so firmly wrapped in burlap that upon delivery the soil in the ball is still firm and compact about the small feeding roots. Each ball shall be of sufficient size to encompass all the fibrous feeding roots necessary to insure successful recovery and development of the plant. The minimum sizes of balls, ball depth and diameters and increased ball sizes for collected stock shall be in accordance with Recommended Balling and Burlapping Specifications, as set forth in the current edition of the American Standard for Nursery Stock sponsored by the American Association of Nurserymen, Inc. and listed under 3.C.5., Excavation of Plant Holes.
  - e) Container Grown Stock (CG). Plants furnished CG shall be well rooted and established in the containers in which they are growing. They shall have grown in the containers sufficiently long for the new fibrous roots to have developed so that the root soil mass will retain its shape when removed from the container. The plants shall not have grown in the container long enough to become container bound. The container shall be sufficiently rigid to retain its shape and protect the plant root system during shipping and handling. Container size shall be in accordance with specifications for CG stock as stated in the current edition of the American Standard for Nursery Stock.
  - f) Machine Transplanted Stock (MT). Plants to be furnished or transplanted as MT stock shall be plants that are to be moved from the growing site to selected sites within the project limits by use of a tree transplanting machine. The machine shall be capable of digging and removing from the ground an unbroken mass of earth of the specified size and shape. It shall be capable of lifting and transporting the mass of earth supporting the specified size plant and containing its roots in an undisturbed condition. The machine shall be capable of holding the soil mass and roots in the undisturbed condition until the tree is lowered into the growing position and the soil mass supported by the walls of the planting hole.
2. Transportation. During transportation, the contractor shall exercise care to prevent injury and drying out of the plants. Upon arrival at the temporary storage location or the site of the work, plants will be inspected for proper shipping procedures. Should the roots be dried out, large branches be broken, balls of earth be broken or loosened, or areas of bark be torn, Menards may reject the injured tree. When a tree has been so rejected, the contractor shall at once remove it from the area of the work and replace it.

3. Temporary Storage. No plant shall remain in temporary storage over the summer. Plants delivered to the project that are not to be planted immediately shall be protected in the following manner:

- a) Bare Root Plants. Plants may remain on the site of the work only 24 hours prior to being planted or placed in storage. During this 24 hour period, the contractor shall continue to exercise care to prevent injury and drying out the plants. The roots of plants to be placed in storage shall first be puddled in a paste solution of topsoil and water. The plants shall then be protected and kept moist by “heeling-in” the roots or by placing the plant in a cool moist storage building. The “heeling-in” procedure shall require the plants to be separated and the roots heeled in a suitable moist soil. If plants are stored in a building, the roots shall be covered with a suitable moist mulch. Winter storage of bare rooted plants will be allowed only in temporary and humidity controlled buildings. The duration of storage, the method of storage and the materials used for mulch and “heeling-in” shall meet with the approval of Menards
- b) Balled and Burlapped Plants and Container Grown Plants. Plants may remain on the site of the work only 72 hours prior to being planted or placed in storage.

Balled and burlapped plants shall be kept moist and their solidity carefully preserved. To prevent drying out or freezing, they shall be stored either in a cool moist storage building or placed in a compact group with a suitable mulch material placed around and between the balls so they are completely covered.

Container grown plant material shall be kept moist by watering as necessary. To prevent freezing, they shall be stored either in a cool moist storage building or placed in a compact group with a suitable mulch material placed around and between the containers so that they are completely covered.

The duration of storage, method of storage and mulch material for balled and burlap material and container grown plant material shall meet the approval of Menards

4. Plant Layout. The planting locations and layouts shown in the plan are approximate. The contractor shall stake the exact locations and layout for approval by Menards. In order to remedy localized problems and seasonal conditions that may hinder the establishment of plants according to the species and locations specified, the contractor may request approval to relocate

plantings, to make plant substitutions or to modify soil or drainage characteristics. **The contractor shall locate tree plantings:**

- a) So that a minimum sight distance of 50 yds. in front of all traffic signs and extends 15 yds. beyond the sign.
- b) Outside of the clear zones and sight lines shown in the plan.

5. Excavation of Plant Holes. The plant holes shall be centered at the location stake. The plant hole, except for MT stock, shall be excavated to the minimum dimensions shown:

Pit Diameter: (12") Twelve inches greater than diameter of ball.

Pit Depth: (6") Six inches greater than depth of ball.

The following ball sizes are the minimums recommended for nursery grown plants by the American Association of Nurserymen's "American Standard for Nursery Stock". These sizes will apply in most parts of the country. In some parts of the country, however, varying growing conditions may result in plants requiring a shallower and wider ball or a deeper and narrower ball than the recommended size. Plants collected from wild or native stands must have minimum ball sizes equal to those recommended for the next larger size nursery grown stock.

#### SHADE TREE

Caliper	Ball Diameter	Ball Depth
Inches	Inches	Inches
1¼	18	13.5
1½	20	13.3
1¾	22	14.7
2	24	16
2½	28	18.7

#### DECIDUOUS SHRUBS

	Ball Diameter	Ball Depth
Height	Inches	Inches
12"	8	6
18"	9	6.8
2'	10	7.5

#### SPREADING, SEMI-SPREADING GLOBE & DWARF CONIFERS

	Ball Diameter	Ball Diameter
Spread	Inches	Inches
18"	10	7.5
2'	12	9
2½'	14	10.5
3'	16	12

#### CONE & BROAD UPRIGHT CONIFERS & EVERGREENS

#### SPREADING, SEMI-SPREADING GLOBE & DWARF BROADLEAF EVERGREENS

	Ball Diameter	Ball Depth		Ball Diameter	Ball Depth
<u>Height</u>	<u>Inches</u>	<u>Inches</u>	<u>Spread</u>	<u>Inches</u>	<u>Inches</u>
4'	16	12	18"	10	7.5
5'	20	13.3	2'	12	9
			2½'	14	10.5
			3'	16	12

Unless soil conditions make it impractical, planting holes for MT plants shall be dug by the tree moving machine and shall be approximately the same size and shape as the soil mass containing the root system of the machine moved plant.

The sod and topsoil suitable for backfilling shall be kept separate from the excavated subsoil. When planting on a slope the minimum depth of the plant hole shall be measured from the downward side of the slope at the hole.

In the event it is necessary to suspend planting operations until the following planting season, any open plant holes shall be backfilled before suspending the work. Individual holes for container grown plants shall be excavated to the same dimensions for comparable size balled and burlapped material.

6. Pruning. Immediately after planting, the contractor shall prune, as necessary, the roots of all bare root plants and the top growth of all deciduous plants. Broken or badly bruised roots and dry root tips shall be cut back to sound, healthy tissue. Pruning on bare root (BR) plants and balled and burlapped (B & B) plants shall be limited to the removal of dead, rubbing, damaged or diseased branches and unwanted suckers. Additional pruning may be necessary to improve plant symmetry, structure and vigor.

Pruning cuts on all trees shall leave a branch collar (Shigo method) but in no case shall a stub remain. Pruning shall produce a clean cut in live wood without bruising or tearing the bark. Where branches are cut back, the cut shall be made at a point beyond the lateral shoot or bud a distance not less than one-half of the diameter of the supporting branch. All cuts shall be made on an angle sloping in the direction of the lateral shoot and in no case shall stubs be left.

In the case of trees with multiple stem leaders rather than a dominant central leader, the leader that will best promote the symmetry of the tree shall be preserved and the remainder shall be removed or cut back so they will not compete with the selected leader. Surrounding top branches shall be cut back in conformance with the leader trimming to suppress competition with the selected leader. Deciduous shrubs shall be pruned to form a loose outline conforming to normal shape, with entire canes being removed where they are too thick.

All pruning of the plants shall be done at the project site after planting. The use of hedge shears, pole shears, or anvil action pruners for pruning plants will not be permitted. Pruning saws or by-pass scissors type pruners shall be used for all pruning.

All cut surfaces on oak, crabapple and hawthorn trees shall be immediately treated with tree wound dressing to minimize the potential for entry of insect and disease organisms.

Evergreen trees and shrubs shall be pruned only to the extent of removing damaged growth or a competing leader, except where clipping of hedges is required.

7. Plant Installation. Plants shall be installed plumb and shall be so set that, after installation and backfill consolidation, the beginning taper of the root flare of bare root or container grown plants will be at the approximate level of the finished soil elevation. Due to landscape industry practices, the beginning taper of the root flare of balled and burlapped plants may be found below the soil grade but in no case will balled and burlapped plants be accepted if more than 2" of soil is found above the root taper in the ball. Care shall be taken to ensure that roots are not damaged while placing and compacting the backfill.

The backfilling operations shall be accomplished in more than one stage in accordance with the plan. Sufficient planting soil shall be placed prior to the initial watering in order to cover the root system completely and provide firm support for the plant in the hole. The remaining backfill shall be placed within 5 days after the initial watering following water permeation and soil settlement.

- a) Balled and Burlapped Stock. Balled and burlapped plants may be installed without removing the burlap covering or wire baskets entirely. Before completing the backfilling of planting holes, the top loops of wire baskets shall be removed and the burlap shall be loosened at the top and pulled back to expose the entire top third of the ball. Biodegradable twine may be removed from the top loops of wire baskets and may be retied at midlevel points on the wire basket where necessary. All nylon and non-biodegradable rope material shall be removed from the planting site. Biodegradable twine may be left on B & B plants for stem/root ball support until the end of the Contract. Prior to final acceptance, all twine that has not decomposed, must be cut and removed from plant stems to prevent girdling injury. Treated burlap will be allowed on the root balls but vertical slits must be cut through the burlap at the time of installation. The vertical slits shall be at 3" intervals around the circumference of the root ball and from the top downward in a manner that does not damage the root system.



- b) Container Stock. Plants supplied in containers shall be installed immediately upon being removed from the containers. Removal of plants from containers shall be in a manner that will not disturb the root system or the soil in which they were planted. Under no conditions shall the plant be removed from the container by pulling on the main stem or plant growth. The outside of the root ball shall be scored or pruned in order to redirect circling roots.
- c) Bare Root Stock. Before installing bare root trees and shrubs, planting soil shall be placed and compacted to a depth of approximately 6" in the bottom of the plant hole. The plants shall be installed with the roots evenly distributed and spread in their natural position, with the growing medium being carefully placed and compacted around the roots.
- d) Machine Transplant Stock. The contractor shall transplant trees as designated in the contract by hydraulic spade-type mechanized digging equipment.

**The contractor is responsible for all appropriate permits and certifications required for plants moved.**

The contractor shall:

- i) Apply at least 10.5 gallons of water to the root ball during the digging operations.
- ii) Cover the spade portion of the digger with a tight hood to prevent soil sifting from the root ball.
- iii) Cover trees with a tarp when trees are transported during the growing rather than dormant season if the transport distance exceeds 5 miles.
- iv) Ensure that soil in the ball does not sift out of the digger while in transit.
- v) Support the tree in a manner that will prevent shifting and damaging of the root ball.
- vi) Fill holes created by the removal of trees within 24 hours. Fill holes so that after settling, the fill will be the same as the surrounding ground surface.
- vii) Reset trees that are not plumb with a spade of the same size or larger. Pull away mulch from the tree so that the spades will slip into the original cut. Plumbing trees by tightening guy wires will not be permitted.
- viii) Prune trees, except oaks, within 24 hours after installation. Pruning with pole shears will not be permitted.
- ix) Remove double leaders and broken, dead, diseased or crossed branches. Immediately treat cut surfaces on oak species with a suitable tree wound dressing.

- e) **Seedling Stock.** The contractor shall only plant evergreen and deciduous seedlings during the optimum spring planting dates for evergreens. The contractor shall not plant seedlings in waterfilled depressions. The contractor shall not damage the fine root hairs on seedlings during storage, handling or planting. The contractor shall not prune roots or seedlings unless approved by the engineer.

The contractor shall:

- i) Place seedlings in the ground so that the seedling assumes a position within 20 degrees of vertical.
  - ii) Prevent tangled or turned up root ends (J-root).
  - iii) Set the root collar of each seedling within ½” of the elevation of the finished soil surface.
  - iv) Plant and tamp the ground, around seedling roots, firmly without excessive compaction. Air pockets or voids around the roots will not be permitted.
  - v) Protect deciduous seedlings with seedling tree shelters.
- f) **Watering and Backfill.** Within 2 hours after being installed, each plant shall be watered to thoroughly saturate the backfill soil and provide for settlement and filling of voids in the backfill. Consecutive watering and addition of planting soil may be necessary for thorough backfilling and saturation of the soil.

**Within 5 days after installation,** the contractor shall add sufficient planting soil around each plant to bring the soil to the specified level shown in the plan. Plants shall be thoroughly watered unless soil moisture is at optimum or excessive levels. Plants that are improperly positioned with respect to depth and plumbness shall be reset or replaced as necessary. Reset and replaced plants shall be watered within 2 hours to thoroughly saturate the backfill soil.

**The contractor shall have available on the project, at all times, sufficient water equipment and forces to carry out a complete watering of all plants once each week, if necessary, from April 1 until ground freeze, or as otherwise directed by Menards, until the initial plant installation operations have been accepted. Watering intervals shall be varied in consideration of prevailing soil moisture and weather conditions.**

- g) **Mulch.** Mulch shall consist of shredded bark or wood chips. Mulch will be supplied by Menards. Mulch material used in temporary storage of plants is to be supplied by contractor.

Mulch, when specified, shall be placed over the backfilled plant hole or plant bed within the specified area to a depth of approximately 4 inches after any necessary backfilling and adjustment has been performed, unless otherwise specified. Mulching material shall be placed within five days of the second water. Areas to be mulched shall be free of living weeds and grasses before mulch is applied.

h) **Weed Barrier Fabric.** Weed barrier fabric for planting beds and landscaped islands **will be supplied by Menards**. The geotextile fabric shall be placed on areas designated on the plans or by the engineer prior to placing the mulch. The fabric shall be laid flat on the smoothed soil and fitted to the plants as closely as possible. On all slopes the fabric shall be secured with U or T shaped steel pin anchors of sufficient length to prevent movement of the fabric provided by contractor.

i) **Fertilizing.**

i) **Fertilizer for Potting Mixtures.** Fertilizers for potting mixtures shall be incorporated in the mixtures at the rate of 4.2 lb of fertilizer per cubic yard of mixture so that the fertilizer is uniformly distributed.

ii) **Fertilizer for Plant Holes.** The number of packets to be placed in each plant hole shall be uniformly spaced around the outside of the plant hole during the backfill operation. They shall be at least 6" below the final grade of the backfill material.

If specified for MT plants, the packets shall be equally spaced around the hole by placing in niches dug into the plant hole wall from 9" to 18" below the soil surface.

j) **Anti-Desiccant.** Anti-desiccant shall be applied to evergreen plants prior to or at the time of planting and to BRP plants prior to shipment from the storage place. It shall be applied to plants to be transplanted prior to transplanting. The rate and method of application of the emulsion shall be according to the manufacturer's recommendations.

k) **Vegetation Control Herbicide.** Vegetation control herbicide shall be applied according to manufacturer's instruction to unwanted vegetation (weeds and grasses) and in plant bed areas as designated on the plans. A minimum of ten days shall be allowed between application and disturbance of the area by seeding or digging. The contractor may use the herbicide to control or destroy weeds and grasses in other mulched areas at the contractor's discretion with the approval of the engineer.

- l) Selective Pre-Emergence Herbicide. The selective pre-emergence herbicide shall be applied in accordance with manufacturer's instruction for surface application to plant bed areas as designated on the plans just before applying the mulch.
- m) Wrapping. The trunks of trees shall be protected by 4" black PVC drain tile, length of 18" minimum. This shall be done as soon as practical after planting.
- n) Rodent Protection. When required, a rodent protective material shall be applied to the plants. This shall consist of the materials permitted in section 3.B.2.(g). The rodent protection material shall be placed around each tree trunk with the bottom of the material resting on the soil surface and the top a minimum of 4' above the surrounding earth surface, or up to the lowest branches on small trees. The rodent protection shall be wrapped loosely around the tree trunk and stapled to itself with three rows of staples. Staples within each row shall be spaced at minimum 6" intervals along the seam.
- o) Bracing. Trees shall be braced with a stake driven into the ground near the base of the tree to a depth of 24" to 36" or until sufficiently solid to support the trees, and shall extend upward to about 6" below the lowest main branches. The tree shall be fastened to the stake by means of a soft rope or strap in such a manner as to avoid injury to the tree.
- p) Guying. Trees shall be guyed with three wires whose upper ends are attached to soft ropes or straps which encircle the tree trunk, just above the lowest main branches of deciduous trees and at a point above the ground line of two-thirds the height of evergreen trees. The lower ends shall be anchored to stakes set in the ground around the tree, equal distance apart and at a distance from the tree of approximately three-fourths the distance from the ground to the upper point of fastening. The anchor stakes shall be notched to prevent slipping of the wire and shall be driven into the ground at a slight angle away from a tree, to a depth of 18" or more until solid, and shall extend for 3" above the ground.

The wires shall be drawn taut to equal tension by means of twisting or use of turn-buckles, and fastened securely, with the trunk of the tree remaining in a vertical position.

- q) Disposal of Excess and Waste Material. All excess excavation, waste materials or other debris shall be removed and disposed of by the contractor.

- r) **Care. The contractor shall properly care for all plants from the time of planting until September 15 of the second full growing season.**

Proper care of plants shall consist of doing such watering, weeding, cultivating, pruning, spraying, tightening of braces and guys, retying wrapping, remulching and such other work as may be necessary to keep the plants in a neat appearance and in a healthy growing condition. In addition to the waterings required in Section 3.C.7.F., complete waterings shall be performed at 12 to 15 day intervals between May 15 and September 15. Such intervals may be lengthened when weather conditions and soil moisture permit. Additional waterings may be required at any time during the plant establishment period should conditions require such waterings.

A sufficient amount of water shall be placed in each plant hole at the time of each watering to keep the topsoil backfill material in a moist condition, and to keep the plant in a healthy growing condition.

All mulched areas shall be kept free of all vegetation, except the specified plants, by hoeing, hand weeding or by the use of herbicides.

All vines shall be strung to fences and runners shall be directed toward retaining walls or structures, as the case may be, during the plant establishment period.

Pesticides shall be applied as required to control insects and disease and to keep the plants in a healthy condition.

All bracing and guying materials shall be removed and legally disposed of by the contractor after 4 months.

- s) **Plant Establishment and Replacement Period. A plant establishment period of two years shall follow the completion of planting. The plant establishment period shall extend until September 15 of the second full growing season.**

All evergreens that die during the course of the plant establishment period shall be removed and disposed of by the contractor as their dead condition becomes evident.

All plants that die or show evidence of dying during the plant establishment period shall be replaced at the contractor's expense at the earliest appropriate planting time after this condition becomes apparent.

Any vegetation that is dead, not true to name or size, or not in satisfactory growth as determined by Menards, shall be removed from the site and replaced by contractor at no charge and shall be guaranteed for a like period of two years from the time of planting.

- t) Acceptance or Replacement of Plant Material. Near the end of the applicable plant establishment period, but not later than September 15, the final inspection of the planting will be made and only those plants that are in a healthy growing condition and which meet the following minimum requirement, will be accepted.

Plant sizes and standards shall be in accordance with the American Standards for Nursery Stock.

All plants shall be of the species specified unless a change has been approved. All of the requirements specified in Section 02900 3.C.7.(r), Care, shall have been complied with.

Deciduous trees shall exceed the minimum size of the specified size range and shall have fully matured, average-sized, healthy leaves distributed throughout the branch system.

Deciduous vines shall have the required number of runners, each exceeding the minimum required length.

Evergreens shall exceed the minimum size of the specified size range and all coniferous types shall have fully developed, mature needles and average-sized buds on current season's growth.

The plants not meeting the foregoing requirements shall be removed and replaced with satisfactory plants during the current fall planting season. Materials and methods of replacement planting shall be the same as specified for the original planting, except that plants furnished BRP may be replaced with B & P or CG stock.

#### D. Construction Methods for Perennial Plants

##### 1) Types and Mixtures

- a) Bulbs. Bulbs shall be of the color and variety specified.
- b) Ornamental Herbaceous Plants. Ornamental herbaceous plants shall be of the color and variety specified. Bare root plants may be used if installed in the spring prior to the normal budding time of the plant. Potted plants shall be used when specified on the plans or directed by the engineer or Menards

- c) **Prairie Type Plants.** When specified, prairie type plants shall be installed according to the varieties shown on the plans. When no varieties are specified, the mixture used shall be reviewed and approved by Menards
  - d) **Wetland Type Plants.** When specified, wetland emergent plants or sedge meadow plants shall be installed according to the varieties shown on the plans. When no varieties are specified, the mixtures shall be reviewed and approved by Menards
  - e) **Woodland Type Plants.** When specified, woodland plants shall be planted according to the varieties shown on the plans. When no varieties are specified, the mixture shall be reviewed and approved by Menards
- 2) **Layout of Planting.** When plants are specified to be planted in prepared soil planting beds, the planting bed shall be approved by Menards prior to planting. If no prepared soil planting bed is specified, the plants shall be planted in areas that have existing cover or have been seeded and mulched or sodded. Where perennial plants, except bulbs, shall be planted, the planting beds shall be delineated with selective mowing stakes. Selective mowing stakes shall be steel posts driven into the ground to a height of 3½ ft. above the ground at locations shown on the plans.
- 3) **Planting Procedures.** The spacing of the plants shall be as shown on the plans to uniformly fill the planting beds.

Individual plants within the beds shall be planted as follows:

- a) **Bulbs.** Bulbs shall be planted to a depth of 6 inches in turf areas or prepared beds.
- b) **Ornamental Herbaceous Plants, Prairie Type Plants, Sedge Meadow Type Plants and Woodland Type Plants.** When planted in prepared soil planting beds, these plants shall be planted by a hand method approved by the engineer or Menards

When planted in existing turf, the planting area shall be mowed to a maximum height of 2 inches.

In existing cover or seeded and mulched or sodded planting areas, a 12 inch diameter planting area for individual plants shall be prepared. The existing cover or seed and mulch shall be cut and removed from the 12 inch diameter planting area and the soil within the planting area loosened to a depth of 6 inches. The plants shall be planted within the

planting area and immediately watered with at least 1 gallon of water per plant.

- 4) Mulching. Within 24 hours, the plants shall be mulched with 3 inches of mulch supplied by Menards. Care shall be taken to place the mulch in a way that does not smother the plants. When plants are planted in prepared soil planting beds, the entire bed shall be mulched. Bulbs planted in existing turf need not be mulched.
- 5) Period of Establishment. The establishment period is the same as is required for woody plant materials.

#### 4. Plant Stock

- A. This specification covers trees, shrubs, vines and perennials of various species and varieties suitable for roadside landscape planting. The term “plant” shall mean any or all trees, shrubs, vines or perennials specified.

Unless otherwise specified as collected stock (wild or grown in other than nursery conditions) or owner-furnished transplants, all plants furnished shall be from nursery grown stock and shall bear evidence of proper nursery care during growth. Plants will not be considered to be nursery grown unless they have been growing in a nursery for at least 2 years.

- 1) Classification of Plants. Trees, shrubs, vines and perennials commonly used for landscaping purposes will be classified by species, variety and size or age as indicated in the Contract.

When a dimensional size is specified in the contract, it shall indicate the minimum range of height, stem caliper (diameter) or spread acceptable, as measured in accordance with standards in the current American Standards for Nursery Stock adopted by the American Association of Nurserymen.

- 2) Plant Names. All botanical and common names of plant materials specified shall be based on descriptions by Bailey in the latest edition of “Hortus Third”.
- 3) Plant Hardiness. All plants shall be from seed or other propagation material that is hardy to the project location. Plants that have been consistently grown and cultivated outside the State but within the boundaries shown on a Plant Hardiness Zone Map, will be considered winter hardy within their U.S. Department of Agriculture (USDA) plant hardiness zone or a numerically lower USDA zone. Included within these boundaries are portions of Zones 2, 3, 4 and 5, exclusively. Any questions regarding hardiness or botanical identification of plant materials will be resolved by Menards.
- 4) Quality and Condition. All plants shall be first-class representatives of their normal species or variety, and shall be free of disease, disfiguring knots, sun



scald, insect infestations, dead or broken branches, bark abrasions and other objectionable conditions.

All trees shall have reasonably straight trunks and shall be fully branched and symmetrical on all sides as characterized by natural habits of growth and proper nursery care. Shrubs shall be of strong bushy stock and well developed and formed stems, canes or branches. Vines and perennials shall be strong healthy plants of the size or age specified.

All plants shall have strongly developed fibrous root systems of sufficient size to permit successful establishment and good growth, typical of the species or variety specified. The root systems of container grown plants shall be sufficiently developed to hold the earth intact upon removal from the container. Large root stubs shall be considered evidence of lack of proper care and root pruning and shall be sufficient cause for rejection of nursery grown plants.

- 5) Digging and Handling. All plants shall be dug and handled with reasonable care and skill as necessary to prevent damage to stems, roots, branches and trunk as defined in Section 3.C.1.
- 6) Plant Transportation. Plants shall be transported conforming to Section 3.C.2.
- 7) Temporary Storage. No plant shall remain in temporary storage over the summer. Plants delivered to the project that are not to be planted immediately shall be protected as defined in Section 3.C.3.
- 8) Plant Selection and Approval.
  - a) **Menards retains the right to inspect and tag plant materials as defined in Section 3.B.1.e.**

## 5. Turf Establishment

- A. This work shall consist of the operations of establishing herbaceous ground cover on designated areas. It shall include tilling, liming, fertilizing, seeding, sodding, mulching and any other work specified in conjunction therewith.

**The contractor shall schedule and install temporary and permanent erosion control measures, finish earthwork operations, place topsoil and establish turf in a continuous operation on an area by area basis to the fullest extent practical. The contractor shall establish turf on the completed sections as required, without unnecessary delay and before weed growth or soil erosion occurs. Areas to be seeded are all disturbed areas, outlots, stockpiles, ditch ways, detention ponds and any areas that are affected by construction activity, unless otherwise specified.**

- B. Soil Preparations. Immediately prior to sowing the seed or placing sod, the contractor shall loosen the soil to a minimum depth of 3.5" on all areas except slopes steeper than 1 vertical to 3 horizontal, using disks, harrows, field diggers or other suitable cultivating equipment. In compacted areas, ripping, additional equipment or other necessary measures to ensure proper soil loosening may be required. On slopes the cultivating equipment shall be operated in a general direction at right angles to the direction of surface drainage wherever practical. All washouts on the areas to be seeded or sodded shall be filled prior to the soil loosening operations. The fill material shall be compacted sufficiently to provide uniform density in the upper soil layer of 90%.

The areas to be sodded or seeded, shall be maintained in a true, even and properly compacted condition so as to prevent the formation of depressions where water will stand. All clods, lumps, rocks, etc. shall be removed. All surfaces to be raked with no material larger than 1/2" in size remaining.

- C. Applying Fertilizer and Conditioners. The contractor shall apply fertilizers, compost and liming materials, as required by industry standards and site conditions, using mechanical spreading devices to the fullest extent practical and providing uniform distribution of the material over the designated areas.

**The contractor shall apply lime or compost to the seeding or sodding. The soil shall be tilled at least once, within 24 hours, following the application of lime or compost and prior to the seeding or sodding. on sodding areas, it shall be applied prior to placing the sod. On seeded areas, the time between fertilizing and seeding shall not exceed 48 hours.**

- D. Sowing Seed. The contractor shall protect the seed from moisture until it is sown. Wet or moldy seed shall not be used. The contractor shall sow the seed uniformly at the rate of application specified in Table 6-1 for Mixtures 1-3. Rate of application for Mixtures 4-7 is to be reviewed and approved by Menards

The contractor shall sow seed prior to applying mulch except for aggregate mulch and as otherwise directed by the engineer. The contractor shall seed and immediately firm the seedbed, mulch and anchor the mulch as a continuous operation. Should mulch application or mulch anchoring be delayed so that the seed or mulch becomes dislodged by traffic or wind, the affected areas shall be reseeded and remulched at no expense.

**The contractor shall not broadcast seed or hydroseed when the wind velocity exceeds 15 MPH or during gusts that would affect seed placement.**

1) Seeding Native Grasses

The contractor shall seed Mixtures 4 through 5A with a seed drill that will accurately meter the types of seed to be planted and keep all seeds uniformly mixed during drilling. The drill shall be equipped with disk furrow openers

and packer assembly to compact the soil directly over the drill row. Maximum row spacing shall be 8". Depth of seed placement shall be such to obtain a final planting depth of ½" to 1". All drill seeding shall be done at a right angle to surface drainage.

When an interseeder type drill is required in the Contract, the drill shall contain trash rippers and at least two seed boxes, a fine seed box and a box for larger or fluffy seeds. The drill shall slice through the vegetative mat and make a 1" wide by ½" to 1" deep furrow into the underlying soil. The drill seed disk openings shall place seeds in the furrows. The above drill requirements shall apply except that the drill shall drop the seed onto the ground surface from the fine seed box and place the larger or fluffy seed to a final planting depth of ½" to 1".

Menards may allow substitution of hydro or mechanical spreader for a drill in certain areas. However, the contractor shall then increase the application rate by 50 percent, at no increased cost to Menards

## 2) Seeding Introduced Mixtures

Mixtures 1 through 3 and 6 through 7 inclusive shall be sown by means of mechanical or hydro spreading of the seeds at the specified rate of application. The use of hand operated mechanical spreaders will be permitted only on areas that are inaccessible to, or too small for, the specified equipment.

If a seed drill of the agricultural type is used, the drill shall be operated in a general direction at right angles to the direction of surface drainage, wherever practical, and the seed shall not be sown to a depth greater than ½". Small seed species such as timothy, alfalfa, white clover, redtop, red clover, etc., shall be sown through the grass seed attachment or by other approved means.

If a hydroseeder is used, every effort shall be taken to obtain a uniform distribution over the seeded area. The hydroseeder shall have continuous agitation action that keeps the seed mixed in the water slurry until pumped from the tank and the pump pressure shall be such that a continuous nonfluctuating stream is maintained. Flood type nozzles shall be used to the fullest extent possible along with sufficient water volume to obtain total ground coverage. During application the spray shall be directed to obtain a uniform material distribution as evidenced by a uniform wetting of the soil surface. If a nonuniform distribution results (such as skipped areas and saw tooth patterns), the affected areas shall be reseeded at no expense to Menards. The seed-fertilizer mixture shall be emptied within one hour after the seed is added to the tank. Seed that is allowed to remain mixed with the fertilizer for a period longer than 1 hour will not be accepted for use and will be rejected.

## E. Seedbed Firming

The contractor shall firm all seeded areas after seeding and prior to mulching. The soil firming shall be done with a drag, cultipacker or other approved soil firming equipment. On slopes too steep to operate mechanical equipment, the seed shall be covered by hand raking or other approved means prior to mulching. Soil firming or seed covering shall be accomplished immediately after seeding.

F. Applying Mulch

The contractor shall spread mulch by mechanical means to provide a uniform distribution at the target application rate specified. When poor mulch distribution occurs, the Contractor will be required to remulch areas where coverage is too light and remove the excess where coverage is too heavy as determined by Menards Reference Section 02900, 9, Mulch, for type specifications.

1) Type 1 Mulch

Wherever possible, Type 1 mulch shall be placed with blower equipment. The target rate of application shall be 2 tons per acre. The actual rate of application shall be as directed by the engineer to match varying material or project conditions so that approximately 10 percent of the soil surface is visible through the mulched areas.

2) Type 2 Mulch

Type 2 mulch shall be applied as a dual operation with they hay or straw (Type 1) blown on the soil surface at 1.5 tons per acre and immediately oversprayed with Type 3 at 500 lbs. per acre. Seeding and fertilizing shall be done prior to mulching, not in conjunction with Type 3 mulch placement. Disk anchoring will not be required.

3) Type 3 Mulch

Type 3 mulch shall be applied with hydraulic spray equipment in a water slurry at the rate of .9 tons per acre. Using the color of the mulch material as a metering agent, the slurry shall be uniformly sprayed on the prepared seedbed. The engineer may verify, by inspection of tank loading and spray application, that materials applied correspond with the application requirements within reasonable limitations.

4) Type 4 Mulch

The rate and application procedure for Type 4 mulch shall be as specified in the plans or special provisions.

Following the mulching operation, foot and vehicular traffic, or the movement of equipment over the mulched area shall be prohibited. At any location where mulching has been displayed, the seeding and mulch or other work damaged as a result of that displacement shall be repaired or replaced immediately at the contractor's expense, in a manner satisfactory to Menards

G. Disk Anchoring

Where provided for in the contract, the contractor shall anchor Type 1 mulch with a disk, clodbuster, or other approved equipment. This equipment shall anchor the mulch by punching it into the soil to a depth of 2 to 3 inches. Spacing between the blades or disks shall not exceed 8". The mulch shall be anchored immediately after placement unless otherwise authorized by the engineer.

H. Placing Sod

Before sod is delivered to the work site, the contractor shall have all necessary equipment and forces available and shall have prepared the sodding areas sufficiently in advance to avoid delays in placing the sod. The contractor shall place sod according to the plan and those requirements.

The contractor shall carefully place sod strips from the bottom of the slope and progressing upward. In ditch bottoms and other waterways where a concentrated flow of water is expected, the sod shall be placed with the longitudinal axis of each strip either at right angles or parallel to the flow of water, whichever way is directed by the engineer. On other areas, the sod shall be placed with the longitudinal axis of each strip at right angles to the slope.

The contractor shall place sod strips with staggered end joints and without stretching, in such a manner that all edges will firmly abut the edges of adjoining strips. In no case shall the sod be placed so loosely or under such tension that it will cover an area larger than the area from which it was originally lifted. Overlapping of sod strips, shingle style, may be permitted or required by the engineer, in waterways where the gradient is steeper than 10 percent, in which case the sod strips shall be laid at right angles to the flow of water.

Joints between the sod in-place improvements, such as curbs, walks and existing turf, shall abut tightly and shall be such that drainage will be conducted over the surface. Elsewhere, the outside edges of the sodded areas shall be rolled in or banked flush with soil, thoroughly compacted to form a flush surface as directed by the engineer or Menards

The contractor shall place the sod in such a manner that surface drainage along the boundary of the sodded area will not erode or undermine the sod.

**The contractor shall water and compress the sod into the soil by rolling or tamping while laying the sod or immediately after completing the sod placement on each area.** The initial watering and rolling or tamping shall be sufficient to provide firm contact and bond between the sod and the underlying soil and provide a smooth, even surface free of humps and depressions, but in no case shall the rolling or tamping result in excessive compaction. Menards may require the watering of areas to be sodded prior to the sod placement.

On all slopes steeper than one unit vertical to four units horizontal (1:4) the sod shall be staked or pegged with pieces of plasters' lath or stakes equivalent thereto, a minimum of 6" in length, spaced as required by the nature of the soil and steepness of slope, from 18" to 36" apart along the longitudinal axis of the sod strip. Stakes shall be placed preferably near the top edge of the sod strip and shall be driven approximately plumb through the sod. After installation, stakes should hold the sod firmly in place and present no danger to pedestrians or mowing crews.

All sod placed in ditches, flumes or other appurtenances, where a concentrated flow of water may be expected, shall be staked regardless of the slope.

After the staking has been completed the surface shall be cleared of loose sod excess soil or other foreign material.

**The contractor shall repair damaged areas within 5 working days after completing the sod placement and rolling or tamping operations.** This repair work shall include reseeding and remulching of any seeded or mulched areas adjacent to the sod. All waste sod, together with any stones or other debris removed from the sodding areas, shall be disposed of in a manner satisfactory to Menards

#### I. Placing Erosion Mats

##### 1) Polypropylene Plastic Netting

The netting shall be placed immediately after the mulch or sod placement has been completed on the areas to be covered with netting.

Netting placed in ditch bottoms or flumes shall be rolled out flat, parallel to the direction of water flow. Netting placed on cut or fill slopes shall be rolled out flat, parallel or perpendicular to the direction of water flow. The edges of adjacent strips shall overlap a minimum of 2" and a maximum of 4" with the net on the upstream side of any lateral water flow being on the top.

The netting shall be secured in place by means of wire staples driven reasonably vertical into the soil. The netting shall not be stretched prior to stapling. Staples shall be placed 3' apart along the ends and edges of each strip. Additional rows of staples shall be placed parallel to the edge row of staples to that the distance between adjacent rows does not exceed 3'. Staples

shall be placed 3' apart within these rows. Where possible, staples of adjacent rows shall be placed so as to form a sawtooth pattern.

## 2) Blankets

The contractor shall place the blankets as specified in the contract on the specified areas within 24 hours after sowing of the seed on that area. Prior to placing the blanket, the areas to be covered shall be relatively free of all rocks or clods over ½ inch in diameter, and all sticks or other foreign material which will prevent the close contact of the blanket with the seed bed. If, as a result of rain, the prepared seed bed becomes crusted or eroded, or if eroded places, ruts or depressions exist for any reason, the contractor will be required to rework the soil until it is smooth and to reseed such areas which are reworked. After the area has been properly shaped, fertilized and seeded, the blanket shall be laid out flat, evenly and smoothly, without stretching the material.

The blankets shall be placed so that the netting is on the top and the fibers are in contact with the soil. Placing and anchoring the blankets in ditches and on slopes shall be as follows:

- a) Excelsior Blanket. For placement in ditches, the blankets shall be applied in the direction of the flow of the water and butted snugly against each other. The blankets shall be stapled in place, using 4 staples across the upstream end at the start of each roll and placing staples on 4 ft. centers along each side. A common row of staples shall be used along seams of adjoining blankets. All seams shall overlap at least 2 inches.

On slopes greater than 1:4, the blankets shall be applied either horizontally or vertically to the contour and stapled in place similar to ditch applications except that the space interval shall be 6 ft.

For placement on slopes greater than 1:4, excelsior blanket shall be unrolled in the direction of the slope and shall extend a minimum of 3 ft. over the crest of the slope. On slope applications, 6 staples shall be installed on uniform spacing across the uphill end of each roll. The downhill ends of the lowermost rolls across the slope also shall be anchored with 6 staples, placed on uniform spacing.

For placement in ditch lines, the mat shall be unrolled parallel to the centerline of the ditch so that there are no longitudinal seams within 24 inches of the bottom centerline of the ditch. In ditch lines, 6 staples shall be installed at uniform spacing across the upstream end of each roll.

- b) **Knitted Straw Mat.** The rolls shall be butted snugly together and stapled in place. The staples shall be driven through the blanket vertically into the ground for the full length. Each staple shall anchor the plastic mesh. The staples shall be spaced in a diamond pattern with the longer dimension in the direction of the slope and the shorter dimension across the slope. The longer dimension shall be a maximum of 6 ft. and the shorter dimension shall be a maximum of 3 ft. A common row of staples may be used on adjoining rolls.

For placement on slopes greater than 1:4, knitted straw mat shall be unrolled in the direction of the slope and shall extend a minimum of 3 ft. over the crest of the slope. On slope applications, 6 staples shall be installed on uniform spacing across the uphill end of each roll. The downhill ends of the lowermost rolls across the slope also shall be anchored with staples, placed on uniform spacing.

For placement in ditch lines, the mat shall be unrolled parallel to the centerline of the ditch so that there are no longitudinal seams within 24 inches of the bottom centerline of the ditch. In ditch lines, 6 staples shall be installed at uniform spacing across the upstream end of each roll.

**J. Care. The contractor shall properly care for all turf materials from the time of planting until the store opens.**

Proper care of materials shall consist of doing such watering, mowing, spraying, fertilizing, remulching and such other work as may be necessary to keep the turf areas in a neat appearance and in a healthy growing condition. Complete waterings shall be performed at 12 to 15 day intervals between May 15 and September 15. Such intervals may be lengthened when weather conditions and soil moisture permit. Additional waterings may be required at any time during the establishment period should conditions require such waterings.

During the warranty period, the contractor shall promptly replace all sod that dries out to the point where it is presumed dead, and all sod that has been damaged, displaced, or weakened to the point where its replacement is necessary, or has become heavily infected with weeds. Areas replace with new sod shall be maintained and guaranteed by the contractor for a like period that was specified in the original contract.

When so directed by Menards the contractor shall, at any time during the replacement period, remulch any areas on which the original mulch has eroded, washed away, or blown off and reseed any areas on which the original seed has failed to grow, using the same method as specified for the original planting.



All mulched areas shall be kept free of all weeds by hoeing, hand weeding or by the use of herbicides.

Pesticides shall be applied as required to control insects and disease and to keep in a healthy condition.

**The contractor shall maintain the erosion blanket installation.** Additional maintenance may be required if erosion or a healthy stand is not achieved. Maintenance consists of thoroughly watering the blankets immediately after placement, with additional watering performed as necessary. during the warranty period, the contractor shall be responsible for controlling erosion and establishing a permanent vegetative cover to the satisfaction of Menards. In the event of seeding failure or erosion during the maintenance period, the contractor shall restore such areas at no additional cost to Menards

Weed spraying may be required wherever heavy weed or rank and ragged vegetation growth exists. **The weed spray mixture to be furnished and used shall be submitted to Menards for approval.** The contractor shall be responsible for performing the work at such time and in such a manner that will avoid spray drift outside the areas designated for spraying.

K. **Establishment and Replacement Period. An establishment period of two years shall follow the completion of planting.**

L. Acceptance or Replacement of Turf Materials. Near the end of the applicable establishment period, but not later than September 15, the final inspection of the planting will be made and only those areas that are in a healthy growing condition will be accepted.

The areas not meeting the foregoing requirements shall be removed and replaced with satisfactory materials during the current fall planting season. Materials and methods of replacement planting shall be the same as specified for the original planting.

## 6. Seed

This specification covers introduced grass/legume and native grass/forb seeds used for planting to provide vegetative cover.

Pure live seed (PLS) is the percent of seed germination times the percent of seed purity of each species.

### A. General Requirements

All seed shall conform to the latest seed law of the State, including those governing labeling and weed seed tolerances. Tolerances for Germination and Purity, as

determined by the Department of Agriculture, shall only apply to seed that has been previously tested and approved by the Department as a seed lot. Test for germination and viability shall have been made within 9 months of the date of installation.

Origin shall be clearly identified on the seed label for all seed, including native forbs.

Use of varieties not listed herein will be considered unacceptable and will be rejected.

All legume seed, including native legumes, shall have been pre-inoculated with the proper bacterial culture for the species being inoculated and with the bacteria culture designed for this purpose (pre-inoculation), in the manner and within the time specified by the manufacturer.

All native grass and forb seed shall be of current production seed or harvested from the previous two growing seasons.

All wild-type native grass and forb seed shall have a source of origin that has similar growing conditions and requirements to the project location.

Wild-type is defined as seed that is derived directly from native, wild stock; including seed that was collected in the wild and placed into production or that which has been harvested directly from native stands. Wild-type varieties are regional or local ecotypes that have not undergone a selection process. Wild-type refers to all native seed referred to as “common” in the industry.

#### B. Definitions

- 1) Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

#### C. Quality Assurance

- 1) Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

#### D. Seed Mixtures

TABLE 6-1  
SEEDING MIXTURES

<u>CLASS - TYPE</u>	<u>SEEDS</u>	<u>LBS./ACRE</u>
1 - Lawn Mixture	Ky Bluegrass	50
	Perennial Ryegrass	30
	Creeping Red Fescue	20

1A - Salt Tolerant	Bluegrass	30
	Perennial Ryegrass	10
	Dawsons Red Fescue	10
	Scaldis Hard Fescue	10
	Fults Salt Grass	30
1B - Low Maintenance Lawn Mixture	Fine Leaf Turf - Type Fescue	80
	Perennial Ryegrass	10
	Creeping Red Fescue	20
2 - Roadside Mixture	Alta Fescue	50
	Perennial Ryegrass	30
	Creeping Red Fescue	20
	Oats, Spring	48
2A - Salt Tolerant Roadside Mixture	Alta Fescue	30
	Perennial Ryegrass	10
	Dawsons Red Fescue	10
	Scaldis Hard Fescue	30
	Oats, Spring	48
3 - Slope Mixture	Alta Fescue	40
	Perennial Ryegrass	20
	Alsike Clover	5
	Birdsfoot Trefoil	10
	Andropogon Scoparius (little Bluestem)	5
	Bouteloua Curtipendula (Side - Oats Grama)	10
	Fult Salt Grass	30
	Oats, Spring	30

Note 1. Fults Pucinnellia Distans

Note 2. Legumes - inoculation required

Note 3. Specific variety as shown in the plans or approved by Menards

Note 4. Other seeds may be used if approved by Menards

Note 5. PLS = Pure Live Seed

## 7. Sod

The sod shall consist of a dense, well-rooted growth of permanent and desirable grasses, indigenous to the general locality where it is to be used, and shall be practically free from weeds or undesirable grasses. At the time the sod is cut, the grass on the sod shall have a length of approximately 2" (if longer, the grass shall be cut to approximately this length) and the sod shall have been raked free of debris.

The sod shall be cut in uniform commercial size strips.

The thickness of the sod shall be as uniform as possible, approximately ¾" or more, depending on the nature of the sod, so that practically all of the dense root system of the grasses will be retained, but exposed, in the sod strip and so that the sod can be handled without undue tearing or breaking.

If the sod which is to be cut is in a dry condition so as to cause crumbling or breaking during cutting operations, the contractor at the contractor's expense shall, at least 12 hours before cutting the sod, apply water to it in sufficient quantities to provide a well-moistened condition of the sod to the depth to which it is to be cut.

A. Definitions

- 1) Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel and Brome Grass.

B. Cutting Sod

Sod shall be machine cut into rectangular sections. The sections shall be of uniform width. The sod shall be cut to a depth of ¾" or more so the dense root system will be retained and exposed in the bottom side of sod, and the sod can be handled without undue tearing or breaking. Sod shall be rolled with the top growth inside. Sod strips which indicate crumbling, tearing, breaking or loss of soil during the operations of cutting, transporting or handling will not be acceptable. **Sod shall be laid in its final position within 36 hours after being cut.** During the period between cutting and laying, the sod shall be protected from damage.

C. Sod Mixtures

Sod mixtures shall contain the grass varieties as specified in Table 7-2.

TABLE 7-2  
MIXTURES

CLASS – TYPE	VARIETY	% OF MASS
1 - Lawn Mixture	Ky Bluegrass	50
	Perennial Ryegrass	30
	Creeping Red Fescue	20
1A - Salt Tolerant Lawn Mixture	Bluegrass	35
	Perennial Ryegrass	10
	Dawsons Red Fescue	10
	Scaldis Hard Fescue	10
	Fults Salt Grass	35
	Fine Leaf Turf - Type Fescue	73
1B - Low Maintenance Lawn Mixture	Perennial Ryegrass	9
	Creeping Red Fescue	18
2 - Roadside Mixture	Alta Fescue	34

	Perennial Ryegrass	20
	Creeping Red Fescue	14
	Oats, Spring	32
2A - Salt Tolerant	Alta Fescue	33
Roadside Mixture	Perennial Ryegrass	11
	Dawsons Red Fescue	11
	Scaldis Hard Fescue	11
	Fults Salt Grass	33
3 - Slope Mixture	Alta Fescue	24
	Perennial Ryegrass	12
	Alsike Clover	3
	Birdsfoot Trefoil	6
	Andropogon Scoparius (Little Bluestem)	3
	Bouteloua Curtipendula (Side-Oats Grama)	6
	Fult Salt Grass	18
	Oats, Spring	28

Note 1. Fults pucinelia Distans

Note 2. Legumes - inoculation required

Note 3. Specific variety as shown in the plans or approved by Menards

Note 4. Other may be used if approved by Menards

## 8. Fertilizing

### A. Description

Fertilizers intended for use in connection with seeding, sodding or other planting shall be standard, commercial, packaged or bulk products in granular or liquid form conforming to the requirements of each state and any other governing body. Each container of packaged fertilizer shall be plainly marked with the analysis of the contents showing minimum percentages of total nitrogen, available phosphoric acid and soluble potash. When the fertilizer is furnished in bulk, each shipment shall be accompanied by an invoice indicating the minimum percentages of total nitrogen, available phosphoric acid and soluble potash in the contents.

#### 1) General

The fertilizer selected for the seeding areas shall be applied uniformly and incorporated in the soil by light disking or harrowing. Granular fertilizer shall be well pulverized and free from lumps when applied.

When fertilizer is incorporated with topsoiled areas, the fertilizer may be applied just prior to and in conjunction with the final disking or harrowing operations of the topsoil, or if the topsoil is manipulated by hand, just prior to the final raking and leveling.

If fertilizer is to be placed on surfaces on which no topsoil is placed, the soil shall be prepared by disking or harrowing to a depth of at least 6" and the fertilizer then incorporated as set forth above.

If fertilizer is to be placed on seeding areas where the seed is to be down by means of a spray or stream of water under pressure, the required amount of fertilizer may be placed in the tank, mixed together with the water and the seed, and agitated constantly and applied in the seeding operation. Fertilizer applied by this method will not require disking and harrowing after being placed.

When the fertilizing of areas to be sodded is required, the fertilizer shall be spread uniformly over the soil prior to sodding at the rate specified below, after which the fertilizer shall be worked into the soil as the soil is loosened and prepared as provided in Section 5.B.

Fertilizer used for items of work specified under Section 3.B.2.b. shall be applied as specified therein.

2) Agricultural Limestone Treatment

Agricultural limestone shall be spread uniformly over the designated areas at the rate specified in the following table for the index zone of the limestone proposed for use, unless otherwise specified in the contract.

Application Rates per 100 Square Yards

Index Zones	40-49	50-59	60-69	70-79	80-89	90-99	100-109
Pounds	184.5	158.25	131.8	118.6	105.5	92.25	79

For convenience in checking the required rate of application, the materials used may be measured on a volumetric basis, providing the conversion from mass to volume is determined from representative samples of the materials used.

Agricultural limestone shall be incorporated in the soils in the designated areas in conjunction with the required fertilizers, and the pertinent construction requirements applicable to fertilizers shall apply to those materials also.

9. Mulch Material

A. Requirements

Mulch material shall conform to the requirements for one or more of the following types, as specified in the Contract.

- 1) Type 1 mulch shall consist of grain straw, hay, cutting of agricultural grasses and legumes. When Type 1 is used in conjunction with native grasses, it shall consist of grain straw only. The material shall be free of seed bearing stalks of noxious grasses or weeds as defined by the rules and regulations of the Department of Agriculture.

Mulch containing Canada thistle or leafy spurge fragments or seeds shall be rejected. At the time of delivery the mulch shall be in an air dried condition. Bales used for bale checks shall be densely packed rectangular shaped size. Bales shall be tightly wrapped with two strands of twine or wire.

- 2) Type 2 mulch shall consist of a combination of Type 1 and Type 3 mulch materials. Type 1 and Type 3 mulch materials required for use in connection with the application Type 2 will be designated in the contract as Type 1 (2) and Type 3 (2) respectively.
- 3) Type 3 mulch shall consist of wood cellulose fibers that shall contain no germination or growth inhibiting factors. It shall not contain nor be processed from sawdust or pulverized newspaper. It shall be dyed an appropriate color to allow visual metering of its application, and shall have the property of becoming dispersed and suspended when agitated in water. When sprayed uniformly on the surface of the soil, the fibers shall form a blotter-like ground cover that readily absorbs water and allows infiltration to be underlying soil. Moisture content shall not exceed 15 percent at the time of delivery.
- 4) Type 4 mulch shall consist of raw wood material from either hard or soft timber and shall be a product of a mechanical chipper, hammermill, or tub grinder. All wood mulch other than required for storage to be supplied by Menards

## 10. Maintenance

### A. Woody Plants, Vines & Perennials

- 1) **The contractor shall properly care for all plants from the time of planting until September 15 of the first full growing season.**

Proper care of plants shall consist of doing such watering, weeding, cultivating, pruning, spraying, tightening of braces and guys, retying wrapping, remulching and such other work as may be necessary to keep the plants in a neat appearance and in a healthy growing condition. In addition to the waterings required in Section 3.C.7.F., complete waterings shall be performed at 12 to 15 day intervals between May 15 and September 15. Such intervals may be lengthened when weather conditions and soil moisture permit. Additional waterings may be required at any time during the plant establishment period should conditions require such waterings.

A sufficient amount of water shall be placed in each plant hole at the time of each watering to keep the topsoil backfill material in a moist condition and to keep the plant in a healthy growing condition.

All mulched areas shall be kept free of all vegetation, except the specified plants, by hoeing, hand weeding or by the use of herbicides.

All vines shall be strung to fences and runners shall be directed toward retaining walls or structures, as the case may be, during the plant establishment period.

Pesticides shall be applied as required to control insects and disease and to keep the plants in a healthy condition.

All plants that die or show evidence of dying during the plant maintenance/establishment period shall be replaced at the contractor's expense at the earliest appropriate planting time after this condition becomes apparent.

B. Seeded and Sodded Area Maintenance

1) **Menard, Inc. will mow the grass**

11. Guarantee Period

A plant establishment period of two years shall follow the completion of planting. The plant establishment period shall extend until September 15 of the second full growing season.

- A. Near the end of the applicable plant establishment period, but not later than September 15, the final inspection of the planting will be made and only those plants that are in a healthy growing condition and which meet the following minimum requirements, will be accepted.

Plant sizes and standards shall be in accordance with the American Standards for Nursery Stock.

All plants shall be of the species specified unless a change has been approved. All of the requirements specified in Section 02900 3.C.7.(r), Care shall have been complied with.

Deciduous trees shall exceed the minimum size of the specified size range and shall have fully matured, average-sized, healthy leaves distributed throughout the branch system in a manner typical of the species.

Deciduous shrubs shall exceed the requirements of the specified size range and have mature, average-sized, healthy leaves distributed throughout the branch system.



Deciduous vines shall have the required number of runners, each exceeding the minimum required length.

Evergreens shall exceed the minimum size of the specified size range and all coniferous types shall have fully developed, mature needles and average-sized buds on current season's growth.

All seeded and sodded areas that do not show a healthy growth pattern will be replaced.

The plants not meeting the foregoing requirements shall either be removed and replaced with satisfactory plants during the current fall planting season. Materials and methods of replacement planting shall be the same as specified for the original planting, except that plants furnished BRP may be replaced with B & P or CG stock.

Any materials replaced, shall be guaranteed for a like period as the original materials.

## DIVISION 3

### CONCRETE

#### SECTION 03300

##### CAST-IN-PLACE CONCRETE

#### 1. General

- A. Provide all labor, materials and equipment for the concrete work complete as shown and specified. The principal items of work included are:
  - 1. Furnishing and placing of concrete. (Owner reserves the right to contract direct the placement of the interior floor slab – check with Owner)
  - 2. Finishing and curing.
  - 3. Standard and special finishes.
  - 4. Forms, screeds and preparatory work.
  - 5. Reinforcement.
  - 6. Control joints and tooled joint patterns where indicated.
- B. The following are minimum requirements and shall govern except that all Federal, Local and State codes and ordinances shall govern when their requirements are in excess hereof.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Quality Assurance

- A. Codes and standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
  - 1. ACI 301 “Specifications for Structural Concrete for Buildings”.
  - 2. Concrete Reinforcing Steel Institute, “Manual of Standard Practice”.
- B. **Concrete testing service: Menard will employ a testing laboratory**
  - 1. Inspection service shall, prior to concrete placement, test all trench backfill and hand probe for subgrade for any soft areas.

2. Inspect the forms to insure proper slab thickness, inspect the placement of dowels and reinforcement steel prior to and during concrete placement.
3. Check ready-mix ticket to insure approved mix is being used.
4. Insure that the design water content is not exceeded. Inspection agency will provide batch plant inspection for the first slab pour. The batch plant inspector will determine the actual amount of water in the truck including the moisture content of the fine aggregate. This information will be forwarded to the job site inspector. Ready Mix Company should also include the total water added at the plant on their ticket.
5. Source inspection of local aggregate used in mix to assure proper hardness and gradation.
6. Inspector shall make a minimum of one “unannounced” complete batch plant inspection during course of project.
7. Perform the following tests:
  - a. Check temperature of concrete from each truck.
  - b. Perform slump test and fabricate three cylinders each 150 cubic yards. Test cylinders at 3, 7 and 28 days with one hold specimen.
8. General Contractor and/or testing inspector have the authority to reject the concrete for any one of the following reasons:
  - a. The slump exceeds 4½ inches.
  - b. The temperature of the concrete exceeds 90 deg. F.
  - c. The concrete is in the truck for more than 90 minutes.
  - d. The total amount of water in the approved design mix is exceeded by more than one gallon per cubic yard.
9. General contractor to monitor carbon dioxide levels in the building during the pours and 2 weeks after the last floor pour.

### 3. Forms

- A. Forms for exposed finish concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Finish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
- B. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.
- C. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.
- D. Construct forms complying with ACI 347, to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses,

moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorage and inserts and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up joints to prevent leakage of cement paste.

- E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strip fabricate to produce uniform smooth lines and tight edge joints.
- F. Form ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection and to prevent spalling concrete surfaces upon removal.
  - 1. Unless otherwise indicated, provide ties to portion remaining within concrete after removal is at least 1½” inside concrete.
  - 2. Unless otherwise shown, provide form ties which will not leave holes larger than 1” diameter in concrete surface.
  - 3. Fill all holes left from the removal of the form ties.
- G. Provisions for other trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.
- H. Cleaning and tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement if required to eliminate mortar leaks and maintain proper alignment.

#### 4. Reinforcing

- A. Reinforcing bars: ASTM A615, Grade 60 for #4 or less. Grade all other unless noted otherwise, deformed. All reinforcing supplied by Contractor unless otherwise noted.
- B. Supports for reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise acceptable.
- C. Unless otherwise noted, all concrete used in slabs, exterior and interior, shall contain reinforcing as designated on the floor slab plan.
- D. Comply with Concrete Reinforcing Steel Institute’s recommended practice for “Placing Reinforcing Bars” for details and methods of reinforcement placement and supports, and as herein specified.

#### 5. Concrete Materials

- A. Portland cement: ASTM C150, Type I, unless otherwise acceptable to Menards
  - B. Use one brand of cement throughout project, unless otherwise acceptable to Menards
  - C. Normal weight aggregates: ASTM C33, and as herein specified. Provide aggregates from a single source for exposed concrete.
    - 1. Local aggregates not complying with ASTM C33 but which have shown by special test or actual services to produce concrete of adequate strength and durability may be used when acceptable to the Architect.
    - 2. **Reactive shales, coal particles or other materials which cause pop-outs/pitting will not be permitted. Concrete lignite supplier shall submit to owner a notarized guarantee to warranty against any pop-out/pitting problems prior to placement of any concrete. (See redi mix supplier statement and guarantee letter at the end of this section). Concrete supplier shall supply test results from an independent lab indicating the material is free of any reactive shales, coal particles lignite or materials that cause pop outs/pitting.**
  - D. Lightweight aggregates: ASTM C33, and ASTM C123.
  - E. Water: Potable.
  - F. Water-reducing admixture: ASTM C494, Type A.
  - G. Set control admixtures: ASTM C494, as follows:
    - 1. Type B: Retarding.
    - 2. Type C: Accelerating.
    - 3. Type D: Water reducing and retarding.
    - 4. Type E: Water reducing and accelerating.
  - H. Air entrainment on exterior concrete only maximum 5%. Do not use air entrainment on the interior concrete or on areas with a smooth steel troweled finish.
  - I. Plastersizer.
6. Concrete Mix
- A. Prepare design mixes for each type and strength of concrete in accordance with applicable provisions of ASTM C94. Use an independent testing facility acceptable to Menards for preparing and reporting proposed mix designs.
  - B. **Submit written reports to Menards of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Menards**

- C. Adjustment to concrete mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results or other circumstances warrant; at no additional cost to Owner. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Menards before using in work.
- D. Concrete characteristics:
1. Minimum compressive strength for footings of 4000 lbs. p.s.i. at 28 days unless otherwise specified on the plans.
  2. All floors shall have a minimum compressive strength of 4000 lbs. p.s.i. at 28 days.
  3. The concrete mix will contain 6.0 sacks of Type I cement. The maximum size aggregate will be one inch.
  4. No fly ash shall be allowed in concrete. Water reducing agents are not considered admixtures.
  5. **Addition of water to the batch will not be permitted.**
- E. Proportion of mixes: Proportions of aggregate to cement for concrete shall be such as to produce a mixture which will work readily into the corners and angles of forms and around reinforcement without permitting segregation of materials or an excess of free water collecting on the surface. The methods for measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked during the progress of work.
- F. Ready-mix concrete: Mixed and delivered in accordance with the requirements of ASTM C94 "and Section 501 of the Uniform Standard Specifications". In no case shall concrete be mixed for a period of less than ten minutes at peripheral drum speeds of approximately 200 r.p.m. and mixing shall be continued until the concrete is completely discharged.
- G. Provide batch tickets for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity and amount of water introduced.

7. Joints

- A. Construction joints shall be located and installed, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to Menards. Provide construction joints at all pour limits. Construction joints shall be doweled, depth of concrete shall be thickened to 8" minimum to insure stability from transverse loads.
- B. Interior and exterior slabs shall have control joints properly placed to minimize cracking and stress. Be located and installed per concrete plan. Interior control joints

may be saw cut. Exterior control joints shall be either tooled or formed. Depth of control joints shall be straight. Tooled joints are not permitted in interior floor slabs.

- C. Control joints and construction joints in the heated portion of the building to be filled with a two part polyurethane as manufactured by Pecora Corporation, Dynatrol II or approved equal.
- D. Install 1/8" or less expansion joint bond breaker full depth of slab where slab abuts columns.
- E. Install 1/4" expansion joint material where the slab abuts vertical wall surfaces.
- F. Expansion joint filler shall be non-extruding, resilient, bituminous type, conforming to ASTM D-1751.
- G. **"Soft-Cut" equipment shall be used to cut control joints after the conclusion of slab finishing. Minimum depth of soft cut to be 1/4".**

8. Concrete Placement

- A. Concrete floor slabs shall not be laid until all underfloor construction, including mechanical and electrical lines are installed complete, backfilled, inspected and approved by Menards
- B. **All floors and slabs shall be minimum 4" thick in sales area, 6" thick in warehouse area and receiving area, unless otherwise noted. These are minimum thickness and in no area shall the slab thickness be less than what is designated. Owners testing firm may take core tests for the building, yard area and tests on exterior slabs within 12 hours of pours. This will depend on depth measurements taken by testing firm and their recommendation.**
- C. Interior floors:
  - 1. Flatness and Levelness Tolerances. The random-traffic floor shall conform to the following surface profile tolerances:  
  
Face Floor Flatness Number:  
Specified Overall Value =  $F_F$  (SOV) 50  
Minimum Local Value =  $F_F$  (MLV) 30  
Face Floor Levelness Number:  
Specified Overall Value =  $F_L$  (SOV) 39  
Minimum Local Value =  $F_L$  (MLV) 20
  - 2. All interior floor slabs in sales area and warehouse area shall have a "Steel Troweled Finish", there should be no trowel marks, scratches, edges, etc. Provide levelness tests as required. Submit to Menards - remedy all work not in compliance. Crazeing, cracking, trowel marks, scratches will be unacceptable.

3. The Contractor will be responsible for providing level and smooth surfaces acceptable to Menards. Any surface irregularities shall be repaired or replaced at Contractors expense.
4. Wet curing the slab with water and then placing clear poly for a period of not less than 14 days. After 7 days remove the poly and scrub the entire floor with clear water and an automated scrubber. Recover the floor with new clear poly, after 2 weeks remove the poly and scrub the floor with clear water and an automated scrubber (Menard to supply the poly). Curing compounds shall not be used on interior slabs. Curing must be achieved by placing poly over the slab, leave in place a minimum of 14 days. If Owner contracts direct the placement of the floor slab, the general contractor will be responsible for maintaining the poly cure.
5. If subgrade conditions are not adequate to permit the use of ready mix trucks to drive to pour the use of a concrete pump shall be utilized at no cost to Menards
6. Menard, Inc. will apply two coats of hardener on all exposed concrete slabs. General contractor shall thoroughly clean and scrub the floor.
7. General contractor to maintain proper ventilation of building to prevent carbonization of the floor slab.

D. Exterior Slabs:

1. All exterior concrete slabs shall be planned to all Class B finish (no more than a ¼") variation in 10' - 0" as determined by a 10' - 0" straight edge placed anywhere on the slab in any direction).
2. All exterior concrete slabs shall have a "medium broom finish".
3. Apply liquid curing compound in accordance with manufactures recommendations. Linseed oil (white pigment sealers) are not allowed.
4. Control joints in sidewalks not to exceed 5' o.c. control joints in pallet rack slabs not to exceed 8' o.c. Control joints in sidewalks shall be tooled

9. Defective Concrete:

A. Repairing, Patching and Grinding:

1. **Patch rock pockets, "honeycombs", and holes resulting from the removal of the nail, rod and cone ties, separators and core samples. Chip away defective areas to solid concrete, forming perpendicular edges or slightly undercut edges. Drench area of patch and surrounding area with water. Brush a thin coat of cement grout onto the base and edges of the patch area.**
2. **Concrete floor having floor defects of sufficient magnitude to "read through" floor covering shall be either remedied by grinding, replacement of concrete slab or latex leveling compound. The acceptance and method of repair is at the sole discretion of Menards**



3. **Cracks in any concrete that develop during any time within the warranty period and as determined by Menards as unacceptable shall be repaired by replacement of the concrete, irregardless of cause. Depending on the magnitude of the crack, Menard may consider epoxy injection and a credit in lieu of replacement.**

B. Tolerance in Thickness

1. Determination of slab thickness: Determination of slab thickness will be based on cores taken from a unit of the pavement having a surface area equal to or greater than 4320 m<sup>2</sup> (500 sq. yds.). Determination of slab thickness for areas less than 420 m<sup>2</sup> (500 sq. yds.) may be made from edge of pavement measurements or from before and after cross section measurements, as determined by the Engineer. Computation of thickness, and requirements relative to deficient thickness, shall be as specified herein:
  - a) Length of Units. The unit of surface area will be a continuous strip of slab 300 ft. in length when possible. When the length of a continuous strip of pavement is less than 300 ft., the length of the unit to be used shall be identical to the length of the continuous strip.
  - b). Width of Units. The width of a unit will be the width from the slab edge to the adjacent lane line, from one lane line to the next, or between pavement edges for single - lane pavements.
  - c). Cores. Cores may be taken from the slab at such points as the engineer shall select. When computing the thickness of a unit, not less than 3 cores will be taken.
  - d). Unit Deficient in Thickness: In considering any portion of the slab that is deficient, the limits of the unit to be used in computing the deficiency will be determined by the Engineer, except that no portion of the slab once included in such computation will be included in a second computation.
  - e). Determination of Thickness. The thickness of the slab at the cored points will be the average caliper measurement of the cores taken at the respective points. The average thickness of the slab will be determined by obtaining a weighted average of the thickness at the points where cores are taken from the particular unit, considering that each core represents the thickness of the slab extending longitudinally in both directions half way to the nearest core, or to the end of the unit. Measurements which exceed the specified plan thickness will be considered as the specified thickness. Measurements which are less than the specified plan thickness by more than 5 percent, determined as specified in paragraphs (8) and (9) below, will not be included in obtaining a weighted average thickness.
  - f). Thickness Equals or Exceeds Specified Thickness. When the average thickness of a unit, determined as specified above, equals or exceeds the specified plan thickness, payment will be made at the contract unit price per square meter (square yard) for the specified thickness.

- g). Thickness Deficient by 5 Percent or Less. When the average thickness of a unit determined as specified above, is less than the specified plan thickness by 5 percent or less, an adjusted unit price will be used in computing payment for the pavement involved. The adjusted unit price will be a percentage of the contract unit price as given in the following schedule:

<u>Average Thickness Deficiency in Percent of Plan thickness</u>	<u>Percent of Contract Unit Price</u>
0.0 to 2.0	100
2.1 to 3.0	80
3.1 to 4.0	72
4.1 to 5.0	68

- h). Thickness Deficient By More Than 5 Percent But Not More Than 10 Percent. When the thickness of the slab at a cored point is less than the specified thickness by more than 5 percent but not more than 10 percent, additional cores will be taken on each side of such thin core at such intervals as the Engineer may select until cores are obtained which are not deficient in thickness by more than 5 percent. The average thickness of the slab between the last points cored, and for the full width of the pavement unit, excepting any areas which are deficient in thickness by more than 10 percent, will be determined as a weighted average of the thickness at the cored point and an adjusted unit price will be used in computing payment for the slab involved. The adjusted unit price will be a percentage of the contract unit price as given in the following schedule:

<u>Average Thickness Deficiency in Percent of Plan thickness</u>	<u>Percent of Contract Unit Price</u>
5.1 to 7.5	57
7.6 to 10.0	50

- i). Thickness Deficient by More Than 10 Percent. When the thickness of slab at a cored point is less than the specified thickness by more than 10 percent, additional cores will be taken on each side of such thin cores at such intervals as the Engineer may select until cores are obtained which are deficient in thickness by 10 percent or less. All slabs between the last points cored and for the full width of the unit of slab will be considered thin by more than 10 percent, and such thin slab shall be removed and replaced with slab of the specified thickness unless the Engineer, at his/her option, permits in writing such thin slab to remain in place.

If the thin slab is removed and replaced with slab of the specified thickness, the replacement slab will be paid for at the contract unit price per square meter (square yard), and no payment will be made for the

thin slab removed nor for the cost of removal. If the thin slab is left in place, the contractor will receive no compensation for the thin slab and, in addition, an amount equal to 2 times the contract cost of the thin slab will be deducted from the compensation due the contractor.

- C. Remove and replace all concrete that has crazing, spalling, pop-outs, rock pockets, air bubbles, delineation will be repaired by replacement.

## SECTION 03400

### PRECAST CONCRETE WALL PANELS

#### 1. General

- A. Menards subcontractor will be providing the precast concrete wall panels including product design, manufacture transportation, erection and other related items such as anchorage, bearing pads, storage and protection of precast. The principal items of work included are:

1. Design, manufacture, transport, unload and install the precast wall panels.
2. Supply columns for temporary shores contractor to unload and install. Supply friction connection contractor to install.
3. Provide window and door openings in the precast panels.
4. Caulk all joints between panels interior and exterior.
5. Weld connections of the precast panel to the W10 x 17 beam. Weld the precast panel to the bar joist and make the girder connection at the precast panel.
6. Supply miscellaneous steel required for connecting the precast system to the structural roof system.
7. Grout the keyway between the footing and precast panel.
8. Disconnect the friction connection. Remove the temporary shores.
9. Patch large holes, chips, cracks, etc. in precast panels.
10. Skim coat interior panel faces.

- B. Contractors Work:

1. Coordinate and help schedule Menards precast subcontractor.
2. Contractor to provide suitable gravel access to and around the building, proper drainage and firm level bearing for hauling and erection equipment to operate under their own power. Access around building to be a minimum of 40' wide.
3. Provide true, level bearing surfaces on all field-placed bearing walls and other field-placed supporting members.
4. Placement and accurate alignment of anchor bolts, plates or dowels in column footings.
5. Schedule, unload, handle and install temporary shores. Shores supplied by Menards subcontractor. Contractor will not look to Menards for additional cost or extensions to the contract date based on the precast installation. The

contractor will be expected to have the building/site ready for the precast installation on the dates provided in the contract documents.

6. Install friction connections. Friction connections supplied by Menards
7. Contractor responsible for protecting the open ends of cores from the elements to prevent trapping of moisture in the cores.
8. Back fill around panels with specified back fill material.
9. Patch over weld plates with Dura-Bond 90. Finish to surrounding area.
10. Skim coat all door jambs.
11. Fill in exposed cores or joints at door and window openings.
12. When brick is being applied on the building, contractor should work with precast installer during the grouting scope. Contractor will be required to trowel on level grout as needed for future brick work.

**Redi-Mix Supplier Statement  
& Guarantee Letter**

\_\_\_\_\_  
(Name of Redi Mix Company)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City/State/Zip Code)

\_\_\_\_\_  
(Project)

(Company Name) hereby certifies and guarantees that there will be no pop-out problems with the redi mix concrete manufactured by (company name).

(Company Name) understands that there will be floor coverings applied over the floor slab and recognizes that pop-outs can cause damage, additional maintenance as well as an unsightly appearance.

(Company Name) has read and understands the specifications applying to concrete and floor tile.

(Company Name) recognizes that if pop-outs do occur within the floor slab caused from their concrete mix, that remedial or off set cost will be their responsibility.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Notarized)

DIVISION 4  
MASONRY  
SECTION 04100  
MORTAR

1. General

- A. Provide mortar and masonry grout as shown and as specified. Comply with applicable provisions of Division 0 and 1.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Submittals

- A. **Samples: Submit actual samples of colored mortar.**
- B. Test Reports: Submit gradation of proposed aggregate for mortar and grout. Upon request, submit mix proportions and certified test reports of compressive strength and water retention. If Owner requests additional material tests, cost of test will be borne by Owner for tests which meet specified requirements; contractor shall pay for failed tests.
- C. Make submittals in accordance with Section 01300.

3. Codes and Standards

- A. Comply with ASTM C270 and ASTM material standards cited below.

4. Delivery, Storage and Handling

- A. Store cementitious material and aggregates to prevent deterioration or contamination with foreign material.

5. Mortar and Grout Materials

- A. Portland Cement: ASTM C150, Type I or III.

- B. Hydrated Lime: ASTM C207, Type S.
- C. Aggregate for Mortar: Natural sand or manufactured sand obtained by crushing stone or gravel, ASTM C144.
- D. Aggregate for Grout: Fine and coarse aggregate, ASTM C404.
- E. Water: Clean and free from deleterious amounts of acid, alkali or organic material.
- F. Admixtures: Antifreeze compounds shall not be used in mortar. Plasticizers, such as Master Builders “Omicron Om”, Hydratite Plus, American Colloid Co. “Easy Spread”, or approved equal, may be added to mortar for unit masonry.
- G. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units containing integral water-repellent must be from the same manufacturer.
- H. Coloring Agent: Coloring agent intended for use in masonry mortar; Colorway Concentrated Mortar Color by Farums Industries Co., medusa, Tamms Industries Co., PCS Color & Supply, or approved equal. Color will be selected by Menards.
- I. Mortar Cement: Mortar cement may be used in lieu of Portland cement and lime at Contractor’s option. Use LaFarge Mortar Cement, or approved equal. When colored mortar is specified, provide coloring agent pre-mixed with mortar.
- J. **Masonry Cement: Masonry cement may not be used.**

6. Mortar Mixtures

- A. Comply with ASTM C270; mix mortar for each type of work as follows:

<u>Mortar Type</u>	<u>Min. Comp. Strength</u>
Type S	1800 psi
Type N	750 psi

- B. Use water-repellent admixture in mortar for concrete masonry unit containing integral water-repellent, and as designated.
- C. Use colored mortar for all exposed face brick, integral color CMU units, brick pavers, and as designated.

7. Masonry Grout Mixture

- A. Mix grout in accordance with ASTM C476. Grout shall have a minimum compressive strength of 2500 psi at 28 days.

8. Mixing Mortar and Grout

- A. Mixing equipment shall be clean and free of hardened materials, dirt and foreign matter.
- B. Accurately measure materials to specified proportions.
- C. Mix mortar and grout in mechanical batch mixer for at least 3 minutes to produce a workable consistency. Hand mixing of materials is not permitted.
- D. At temperatures below 40 degrees F., heat materials (not greater than 140 degrees F.) to achieve mixture temperature between 50 and 90 degrees F.

9. Retempering Mortar

- A. Mortars that have stiffened because of the evaporation of water from the mortar may be retempered by adding water to restore the required consistency. Mortar shall be used and placed in final position within 1½ hours after initial mixing; discard mortar that has begun to set.

10. Mortar Usage Schedule

<u>Usage/Application</u>	<u>Mortar Type</u>
Interior non-load-bearing partitions	N
All other masonry	S

SECTION 04150

MASONRY ACCESSORIES

1. General

- A. Provide masonry accessories as shown and as specified. Comply with applicable provisions of Div. 0 and 1.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Submittals



- A. Product Data: Submit product data for each type of masonry accessory. Make submittals in accordance with Section 01300.
- 3. Codes and Standards
  - A. Comply with applicable local codes.
- 4. Acceptable Manufacturers
  - A. Unless otherwise indicated below, provide products by Dur-O-Wal, Heckmann Building Products, Hohmann & Barnard, Masonry Reinforcing Corp. (Wire Bond), National Wire Products, or approved equal.
- 5. CMU Joint Reinforcement
  - A. Welded wire units prefabricated in straight lengths of not less than 10 ft. with matching corner and tee units. Fabricate with cold-drawn steel wire (ASTM A82) with deformed continuous side rods and plain cross-rods, crimped for cavity wall construction (if any), and unit width 1½" to 2" less than thickness of wall or partition.
  - B. Fabricate using 9 ga. galvanized steel wire for side and cross-rods, unless otherwise designated. Wire for exterior wall reinforcement shall be fabricated from wire galvanized in accordance with ASTM A153, Class B-2.
  - C. For single wythe masonry and veneers, provide truss type joint reinforcement.
    - 1. Truss Type: Single pair of side rods and continuous diagonal cross-rods spaced not more than 16" o.c.
  - D. For multi-wythe masonry, provide ladder type joint reinforcement.
    - 1. Ladder Type: Single pair of side rods and perpendicular cross-rods spaced not more than 16" o.c.
- 6. Anchoring Devices
  - A. Straps, bars, bolts and rods of type and size shown, fabricated from not less than 16 ga. galvanized sheet metal and 3/8" dia. galvanized rod stock, unless otherwise shown. Where designated, flexible anchors shall provide lateral restraint while permitting horizontal and vertical movement of masonry.
  - B. For anchorage to steel frame work, provide 2-piece anchors with crimped ¼" bar for welding to steel and rectangular or vee-shaped 3/16" wire tie sections extending to within 1" of opposite face of masonry abutting flanges or between 1½" and 2" less than width of masonry abutting web.

- C. For anchorage of veneer, provide 2-piece 3/16" galvanized wire anchors, extending to within 1" of opposite face of masonry veneer; Heckmann No. 213 wire anchor and No. 282 wire tie, or approved equal.
7. Concealed Flashings
- A. Composite flashing product consisting of a pliable and highly adhesive rubberized asphalt compound, minimum 32 mils thick, bonded completely and integrally to a high-density, cross-laminated polyethylene film, minimum 8 mils thick, to produce an overall thickness of 40 mils. Include primer recommended by flashing manufacturer for bonding flashing sheets to masonry and concrete.
8. Reinforcing Bars
- A. Deformed steel reinforcing bars, ASTM A615, Grade 60.
9. Bond Breaker Strips
- A. 15 lb. asphalt roofing felt, ASTM D226; or 15 lb coal-tar roofing felt, ASTM D227.
10. Control Joint
- A. Extruded solid rubber, ASTM D2000, M2AA-805, for use with standard sash block.
11. Resilient Joint Material
- A. Urethane foam gasket material; Brock-White 4280, or approved equal.
12. Weepholes
- A. Provide medium density polyethylene plastic tubing, 1/4" O.D. by 4".
13. Installation
- A. Review other Sections of Div. 4, the drawings, and details to determine installation requirements. Install products in accordance with manufacturer recommendations and applicable codes.
  - B. Furnish devices to be placed by others when requested. Assist in placement to assure proper location.
  - C. Bolts and anchors shall be solidly embedded in mortar.

## SECTION 04200

### UNIT MASONRY

#### 1. General

- A. The following are minimum requirements and shall govern except that all Federal, Local and State codes and ordinances shall govern when their requirements are in excess hereof.
- B. Store and handle masonry units off the ground, under cover and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air dried condition.
- C. During erection, cover tops of walls, projections and sills with waterproof sheeting at the end of each days work. Cover partially completed masonry when construction is not in progress.
- D. Do not apply roof loads for at least 3 days after building masonry walls or columns.
- E. Comply with standard recommended practices for cold weather construction.
- F. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Concrete Block

- A. Concrete masonry units shall be modular, hollow, load bearing units of sizes and shapes required by the drawings. All units shall be of uniform texture, square and with no broken edges or corners. 8"x8"x16", 6"x6"x16" and 4"x8"x16" standard block to be supplied by Menard, Inc.
- B. Standard block shall be manufacturers standard "Gray" color.
- C. Provide special shapes were necessary for lintels, corners, lambs, sash, control joints and other special conditions.

#### 3. Mortar and Grout

- A. Mortar shall conform to ASTM 270, Type S, average compressive strength 2000 p.s.i. at 28 days.
  - 1. Prepared masonry cement mortar shall be proportioned by volume: ½ part Portland cement, 1 part masonry cement and not less than 2¼ and not more than 3 times the sum of the volumes of the cements used of loose damp aggregate.
- B. Grout shall consist of a mixture of 1 part of Portland cement to not more than 2 parts of aggregate conforming to ASTM C-476.
- C. No anti-freeze liquid, salts or other substances shall be used in the mortar or grout to lower the freezing point.
- D. Mortar joints shall be 3/8" thick with full mortar coverage on vertical and horizontal face shells. Mortar joints shall be struck off flush with wall surface and when practically set, shall be tooled off slightly concave.
- E. Water shall be clean, free from deleterious amounts of acids, alkalis or organic materials.
- F. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at not additional cost to Menard, Inc.

4. Reinforcement

- A. All masonry walls shall be reinforced with galvanized wire joint reinforcing. Horizontal joint reinforcement shall be installed in the first and second bed joints, 8" o.c., immediately above and below at openings and in bed joints at 16" o.c. elsewhere. Reinforcement in the second bed joint above or below openings shall extend two feet beyond the jambs. All other reinforcement shall be continuous.
  - 1. Horizontal wall reinforcement shall be prefabricated "truss design" formed from 9 gauge minimum deformed, galvanized welded cold drawn steel wire. Width of reinforcing shall be approximately 2 inches less than wall thickness. Provide prefabricated corners and tees. Acceptable manufactures shall be Dur-O-Wal, Lox-All, AA Wire Products Co., and National Wire Products Corporation.

- B. Provide steel reinforcing bars at lintels and bond beams. All rebar supplied by Contractor.
  - 1. All steel reinforcing bars provided by Contractor shall conform to “Specifications for Deformed Billet-Steel bars for Concrete Reinforcement”, ASTM A-615 Grade Number 60, having a minimum yield strength of 60,000 p.s.i.
- C. Control joints will be required throughout the building for all exposed concrete masonry walls. Spacing shall be as indicated on the drawings and is required. Control joints should also be placed at points of extreme stress concentration such as: change in wall heights, change in wall thickness, at chases required for pipes, vents and columns and abutments of columns and walls.

5. Execution

- A. All masonry walls shall be true and plumb and built to thickness and to the bond or pattern as shown on the drawings.
- B. Unless otherwise indicated, masonry units shall be laid in a running bond. Bond each course at corners and intersections and break vertical joints at least 4”. Where masonry units are exposed 8” high, vertical face shall be maintained.
- C. Mortar bedding for all hollow units shall be placed under the face shells of units but shall not extend across the webs; except that full mortar bedding shall be required under the first or starting course of units laid on footings and solid foundation walls and webs adjacent to grout filled cores. Mortar shall be applied over the full thickness and height of face shells and/or the solid end faces of units to form the vertical mortar joints.
- D. Horizontal and vertical joints for all solid units shall be filled solid. Mortar shall be spread over the full area of the unit in horizontal joints. Vertical surfaces of units shall be heavily buttered so that mortar will be applied over the full end area of the unit.
  - 1. Provide a minimum of two (2) courses (16”) of solid masonry units at all masonry bearing steel members.
- E. All exposed joints shall be tooled.

6. Final Cleaning

- A. After completion of the masonry work, all exposed masonry surfaces shall be cleaned to the acceptance of Menards
- B. After concrete masonry surfaces have been thoroughly cleaned and pointed, all exposed surfaces shall receive a painted finish.

## SECTION 04210

### BRICK MASONRY

#### 1. General

- A. Provide brick masonry as shown and as specified. Comply with applicable provisions of Div. 0 and 1.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Submittals

- A. Product Data: Submit product data for each type of brick masonry unit, including certified copies of laboratory test reports, to shown compliance with specified requirements.
- B. Samples: Submit small-scale samples of each type of brick masonry unit showing full extent of colors and textures available.
- C. Make submittals in accordance with Section 01300.

#### 3. Sample Brick Masonry Panel

- A. **Prior to installation of masonry work, erect sample wall panel using materials, mortar color, bond, and joint tooling designated for final work; provide special features as directed for caulking and contiguous work. Build mock-up where located by A/E, of full thickness and approximately 4 ft. x 3 ft., indicating proposed range of color, texture and workmanship to be expected in completed work. Obtain acceptance of mock-up before start of masonry work. Retain mock-up during construction as a standard for judging completed masonry work. Do not alter, move or destroy mock-up until work is completed.**

#### 4. Codes and Standards

- A. Brick masonry work shall conform to applicable codes.
- 5. Delivery, Storage and Handling
  - A. Store brick in stacks to avoid damage; protect from dirt, stains and wetting.
- 6. Environmental Requirements
  - A. Protect partially completed masonry against weather; when work is not in progress, cover top of walls with strong waterproof, non-staining membrane. Extend membrane at least 2 ft. down both sides of walls and anchor securely.
  - B. Do not lay masonry when air temperature is below 40 degrees F. unless suitable means are provided to heat materials, protect work from cold and insure mortar will harden without freezing. Warm units to at least 50 degrees F. before laying. To remove frost or excess moisture, heat units to a temperature not over 140 degrees F. Protect walls for not less than 48 hours after laying. Comply with "Recommended Practices for Cold Weather Masonry Construction", International Masonry Industry Wall-Weather Council.
- 7. Face Brick
  - A. See plans for type, style and manufacturer.
- 8. Mortar
  - A. See Section 04100.
- 9. Masonry Accessories
  - A. See Section 04150.
- 10. Installation, General
  - A. Build walls, floors and other masonry construction to the full thickness shown, except, build single-wythe walls to nominal thickness shown or specified.
  - B. Coordinate with other trades for location and tolerances for building openings, chases and recesses as shown and as required. Provide not less than 8" of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
  - C. Leave opening for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match adjacent work.
  - D. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped, edges. Provide wet-type saw or exhaust dust properly from enclosed areas.

Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full-size units without cutting wherever possible.

- E. Wet bricks as required to properly reduce suction.
- F. Do not use chipped, damaged or discolored masonry units in exposed work. Do not use metal reinforcing or ties having loose rust, frost or other coatings which will reduce or destroy bond.

11. Laying Brick Masonry

- A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid use of less-than-half size units at corners and jambs, and wherever possible at other locations.
- B. Lay-up walls plumb and true, with courses level, accurately spaced and coordinated with other work.
- C. Lay brick with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.
- D. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.
- E. As the work progresses, build-in items specified under this and other sections. Fill in solidly with masonry around built-in items. Install steel lintels furnished under Div. 5 for masonry.
- F. Fill in space between hollow metal frames and masonry with mortar.

12. Bond Pattern

- A. Lay utility brick in 1/3 running bond. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners. Do not use units with less than 4" horizontal face dimensions at corners or jambs.

13. Joint Treatment

- A. Strike joints flush for masonry walls which are to be concealed or to be covered by other materials. Tool exposed joints slightly concave, except tool joints flush within 1" of outlet boxes. Rake out mortar in preparation for sealants. Maintain 3/8" joint width, except for minor variations required to maintain bond alignment.



14. Anchoring

- A. Provide anchoring devices of type shown and as specified under Section 04150. If not shown or specified, provide manufacturer's recommended type for facing and back-up involved.
- B. Anchor masonry to structural members where masonry abuts or faces such members. Provide an open space not less than ½" in width between masonry and structural members, unless otherwise shown. Keep open space free of mortar or other rigid materials. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure. Space anchors as shown, but not less than one per 2 sq. ft.

15. Control and Expansion Joints

- A. Unless otherwise shown, locate control vertical joints at 50 ft. o.c. and at points of natural weakness in masonry including the following:
  - 1. At structural column or joint between bays.
  - 2. Above expansion or control joints in supporting structure.
  - 3. At end of lintels upward and below at ends of sills downward. Place at one side of jamb for openings less than 6 ft. wide and at both sides for openings over 6 ft. wide.
  - 4. At vertical chases, recesses and other points of reduction in wall thickness.
  - 5. At locations where masonry wall height changes by more than 20%.
  - 6. Where masonry abuts supporting structure.
  - 7. At a distance equal to ½ wall height from corners or intersections with other masonry.

16. Flashing

- A. Provide concealed flashings in masonry work as shown. Refer to Section 04150 and Div. 7 sections for type of flashing required. Prepare masonry surfaces smooth and free from projections which might puncture flashing. Place through-wall flashing on sloped bed of mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar.
- B. Extend flashing beyond edge of lintels and sills at least 4" and turn up edge on sides to form pan to direct moisture to exterior.
- C. Provide vents/weep holes in head joints of first course of masonry immediately above concealed flashings. Space 24" o.c.
- D. Install reglets and nailers for flashing and other related work where shown to be built into masonry work.

17. Cavity Walls

- A. Keep cavity clean of mortar droppings during construction. Strike joints facing cavity flush.
- B. Tie exterior wythe to back-up with individual ties or continuous horizontal joint reinforcement embedded in mortar joints at not more than 16" o.c. vertically. Refer to Section 04150 for type of reinforcement required.
- C. Provide flashing and vents/weep holes in exterior wythe of cavity wall as shown and as specified in "Flashing" article.

18. Repair and Pointing

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or do not match adjoining units as intended. Provide new units to match adjoining units to install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. During joint tooling, enlarge voids or holes, except weep holes, and completely fill with mortar.
- C. Point-up joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
- D. Wipe off excess mortar as work progresses. Dry brush at end of each day's work.
- E. In any case that efflorescents appears within 2 years of store opening, it will be removed by the contractor with no cost to Menards.

19. Final Cleaning

- A. After mortar is thoroughly set and cured, clean sample wall area of approximately 20 sq. ft. in an inconspicuous location using methods described below. After acceptance of sample cleaning, clean remainder of masonry until clean and free of mortar stains.
- B. Dry clean to remove large particles of mortar using wood paddles and scrapers. Use chisel or wire brush if required.
- C. Presoak wall by saturating with water; flush off loose mortar and dirt. Scrub wall with stiff fiber brush using a solution of ½ cup of trisodium phosphate and ½ cup of household detergent dissolved in one gallon of water. Sonokleen 88 concentrated masonry cleaner may be used if manufacturer's instructions are carefully observed. **Acid cleaning of exterior masonry will not be permitted.**

- D. Rinse walls by washing off all cleaning solution, dirt and mortar crumbs using clean water. **Do not use high pressure water that will damage the surface of the brick or metal.**

## SECTION 04220

### CONCRETE UNIT MASONRY

#### 1. General

- A. Provide concrete unit masonry as shown and as specified. Comply with applicable provisions of Div. 0 and 1.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Related Sections:

- A. 04230 Reinforced Unit Masonry.

#### 3. Submittals

- A. Product Data: Submit product data for rock face masonry units, including certified copies of laboratory test reports, to show compliance with specified requirements.
- B. Samples: Upon request, submit samples of rock face masonry units. Select units to show range of color and texture expected in finished work.
- C. Make submittals in accordance with Section 01300.

#### 4. Codes and Standards

- A. Concrete masonry work shall conform to applicable codes. Masonry units shall be products of applicable codes approved manufacturer.

#### 5. Delivery, Storage and Handling

- A. Store concrete block in stacks to avoid damage; protect from dirt, stains and wetting.

#### 6. Environmental Requirements

- A. Protect partially completed masonry against weather; when work is not in progress, cover top of walls with strong, waterproof, non-staining membrane. Extend membrane at least 2 ft. down both sides of walls and anchor securely.
- B. Do not lay masonry when air temperature is below 40 degrees F. unless suitable means are provided to heat materials, protect work from cold and insure mortar will harden without freezing. Warm units to at least 50 degrees F. before laying. To remove frost or excess moisture, heat units to a temperature not over 140 degrees F. Protect walls for not less than 48 hours after laying. Comply with "Recommended Practices for Cold Weather Masonry Construction", International Masonry Industry All-Weather Council.

7. Hollow Concrete Masonry Units

- A. Hollow load-bearing concrete masonry units, ASTM C90, Type II, except that appearance of exposed faces shall be as specified below. No entraining agents, coloring pigments, integral water repellents, etc., shall be used unless they conform to applicable ASTM standards or have been shown by test or experience to be not detrimental to durability of concrete.
- B. Aggregate for concrete block shall be normal-weight type, ASTM C33.
- C. Where indicated, aggregate for concrete block shall be lightweight type, ASTM C331.
- D. Exposed faces shall be free of void spaces, cracks or other imperfections larger than 1/4" in any face dimension by 1/8" deep. Contractor and A/E shall review block pallets upon arrival at site to determine acceptability.
- E. Block with exposed corners shall be bullnose type.
- F. Provide lintel block where masonry bond beams are designated.

8. Solid Concrete Masonry Units

- A. Normal-weight, solid load-bearing concrete masonry units, ASTM C90, Type II, except that appearance of exposed faces shall be as specified below.
- B. Exposed faces shall be free of void spaces, cracks or other imperfections larger than 1/4" in any face dimension by 1/8" deep. Contractor and A/E shall review block pallets upon arrival at site to determine acceptability.

9. Rock Face Concrete Masonry Units

- A. Integrally-colored, normal weight concrete masonry units with split face finish. Units shall conform to ASTM C90, Type II, except that exposed faces shall be free of void spaces, cracks, or other imperfections larger than 1/4" in any face dimension by 1/8"

deep. Units shall be of uniform color and texture, matching the selected color sample. Contractor and A/E shall review block pallets upon arrival at site to determine acceptability.

- B. Units shall be made with a liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength; W. R. Grace “Dry-Block” or approved equal.
- C. Acceptable Products: Bend Industries “Best Block”. Style: Bastion. Full Face Split. Color: 08P-White.

10. Mortar

- A. See Section 04100.

11. Masonry Accessories

- A. See Section 04150.

12. Installation, General

- A. Build walls and other masonry construction to full thickness shown, except build single-wythe walls to nominal thickness shown or specified.
- B. Coordinate with other trades for location and tolerances for building opening, chases, and recesses as shown and as required. Provide not less than 8” of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
- C. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match adjacent work.
- D. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped edges. Provide wet-type saw or exhaust dust properly from enclosed areas. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full-size units without cutting wherever possible.
- E. Do not use chipped, damaged or discolored masonry units in exposed work. Do not use metal reinforcing or ties having loose rust, frost or other coatings which will reduce or destroy bond.

13. Laying Concrete Masonry Units

- A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid use of less-than-half-size units at corners and jambs and wherever possible at other locations.

- B. Lay-up walls plumb and true, with courses level, accurately spaced, and coordinated with other work.
- C. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.
- D. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.
- E. As work progresses, build-in items specified under this and other sections. Fill in solidly with masonry around built-in items. Install steel lintels furnished under Div. 5 for masonry.
- F. Fill space between hollow metal frames and masonry with mortar.

14. Bond Pattern

- A. Lay exposed masonry in bond pattern as shown, or if not shown, lay in running bond with vertical joint centered on units in courses above and below. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners. Do not use units with less than 4" horizontal face dimensions at corners or jambs.

15. Joint Treatment

- A. Strike joints flush for masonry to be concealed or covered by other materials. Tool exposed joints slightly concave, except tool joints flush within 1" of outlet boxes. Rake out mortar in preparation for sealants. Maintain 3/8" joint width, except for minor variations required to maintain bond alignment.

16. Joint Reinforcement

- A. Provide continuous horizontal joint reinforcement as shown and as specified under Section 04150. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls and 1/2" at other locations. Lap reinforcement a minimum of 6" at ends of units. Do not bridge control and expansion joints with reinforcement except at wall openings.
- B. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

- C. For single wythe walls, space reinforcement at 16" o.c. vertically, unless otherwise shown.
- D. For multi-wythe walls (solid or cavity) where continuous horizontal reinforcement also acts as structural bond or tie between wythes, space reinforcement as required by code but not more than 16" o.c. vertically.
- E. For parapets, space reinforcement at 8" o.c. vertically, unless otherwise shown.
- F. Reinforce masonry openings greater than 1 ft. wide, with horizontal joint reinforcement placed in two horizontal joints approximately 8" apart, both immediately above lintel and immediately below sill. Extend reinforcement 2 ft. beyond jambs of opening, bridging control joints where provided.

17. Anchoring

- A. Provide anchoring devices of type shown and as specified under Section 04150. If not shown or specified, provide manufacturer's recommended type for facing and back-up involved.
- B. Anchor masonry to structural members where masonry abuts or faces such members. Provide an open space not less than 1/2" in width between masonry and structural members, unless otherwise shown. Keep open space free of mortar or other rigid materials. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure. Space anchors as shown, but not less than one per 2 sq. ft.
- C. Anchor single-wythe masonry veneer to studs with veneer anchors. provide an open space not less than 1/2" in width between veneer and sheathing. Space veneer anchors as shown, but not less than one per 2 sq. ft. Provide additional anchors within 12" of openings at intervals of not more than 8" around perimeter.

18. Control and Expansion Joints

- A. Unless otherwise shown, locate vertical control joints at 30 ft. o.c. and at points of natural weakness in masonry including the following:
  - 1. At structural column or joints between bays.
  - 2. Above expansion or control joints in supporting structure.
  - 3. At end of lintels upward and below at ends of sills downward. Place at one side of jamb for openings less than 6 ft. wide and at both sides for openings over 6 ft. wide.
  - 4. At vertical chases, recesses and other points of reduction in wall thickness.
  - 5. At locations where masonry wall height changes by more than 20%.
  - 6. Where masonry abuts supporting structure.

7. At a distance equal to  $\frac{1}{2}$  wall height from corners of intersections with other masonry.

19. Flashing

- A. Provide concealed flashings in masonry work as shown. Refer to Section 04150 and Div. 7 sections for type of flashing required. Prepare masonry surfaces smooth and free from projections which might puncture flashing. Place through-wall flashing on sloped bed or mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar. Terminate flashing  $\frac{1}{4}$ " beyond face of wall, unless otherwise shown.
- B. Extend flashings beyond edge of lintels and sills at least 4" and turn up edge on sides to form pan to direct moisture to exterior.
- C. Provide vents/weep holes in head joints of first course of masonry immediately above concealed flashings. Space 24" o.c., unless otherwise shown.
- D. Install reglets and nailers for flashing and other related work where shown to be built into masonry work.

20. Cavity Walls

- A. Keep cavity clean of mortar droppings during construction. Strike joints facing cavity flush.
- B. Tie exterior wythe to back-up with individual ties or continuous horizontal joint reinforcement embedded in mortar joints at not more than 16" o.c. vertically. Refer to Section 04150 for type of reinforcement required.
- C. Install cavity insulation in accordance with Section 07210 and as shown.
- D. Provide flashing and vents/weep holes in exterior wythe of cavity wall as shown and as specified in "Flashing" article.

21. Repair and Pointing

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. During joint tooling, enlarge voids or holes, except weep holes and completely fill with mortar.



- C. Point-up joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
- D. Remove excess mortar as work progresses. Dry brush at end of each day's work.

22. Final Cleaning

- A. **After mortar is thoroughly set and cured, clean sample wall area of approximately 20 sq. ft. in an inconspicuous location using methods described below. After acceptance of sample cleaning, clean remainder of masonry until clean and free of mortar stains.**
- B. Dry clean to remove large particles of mortar using wood paddles and scrapers. Use chisel or wire brush if required.
- C. Presoak wall by saturating with water; flush off loose mortar and dirt. Scrub wall with stiff fiber brush using a solution of ½ cup of trisodium phosphate and ½ cup of detergent dissolved in one gallon of water. Acid cleaning of exterior masonry will not be permitted.
- D. Rinse walls by washing off all cleaning solution, dirt and mortar crumbs using clean, pressurized water.
- E. For integrally-color units, comply with block manufacturer's cleaning instructions.

23. Final Repair

- A. After block walls have received one coat of paint block filler under Section 09900, Contractor and A/E shall review walls. All cracks, chips and other imperfections shall be patched with patching mortar and allowed to cure before finish painting.

SECTION 04230

REINFORCED UNIT MASONRY

1 General

- A. Provide reinforced unit masonry as shown and as specified. Comply with applicable provisions of Div. 0 and 1.

2. Masonry Units

- A. Concrete masonry units, concrete brick and accessories shall be in accordance with Section 04220.

3. Masonry Grout

- A. Masonry grout shall be in accordance with Section 04100.

4. Reinforcement

- A. Steel Bar Reinforcement: ASTM A615, Grade 60.  
B. Welded Wire Fabric: ASTM A185.

5. Reinforced Masonry

- A. **Construct reinforced masonry by the low-lift grouting technique. Each lift shall consist of building masonry to next bond-beam course (but not more than 14 ft.), followed by a placement of reinforcement and glued masonry grout. Procedures for high light grouting techniques shall be submitted for approval.**  
B. Installation of concrete masonry units shall comply with Section 04220, including protection, laying unit masonry and flashing.

6. Placing Reinforcement

- A. Steel bar reinforcement shall be fabricated and placed in accordance with Section 03200 and as shown. Clean reinforcement of loose or flaking rust, scale, grease, mortar, grout or coating which might reduce bond. Unless otherwise indicated, details of reinforcement shall conform to ACI 315.  
B. In reinforced masonry, if foundation dowels do not line up with a vertical core, they may be sloped not more than one horizontal in six vertical. Dowels shall be grouted into a core in a vertical alignment, even though it is in an adjacent cell to the cell of the vertical wall reinforcement.  
C. Reinforcement steel shall be lapped 30 bar diameters minimum where spliced and shall be wired together.  
D. Vertical bars shall be held in position at top and bottom and at intervals not exceeding 192 diameters of the reinforcement. Maintain a minimum of 1/4" from masonry, and not less than one bar diameter between bars.  
E. Obtain A/E approval after reinforcement has been placed; recheck with A/E before placing grout if delays occur.

7. Grouting

- A. **Reinforcement steel shall be secured in place and inspected before grouting starts. Mortar droppings should be kept out of the grout space. Contractor to provide pictures of these sections.**
- B. Grout in horizontal cavities shall be confined with metal lath or screen in the bed joint or by masonry units with solid bottom. Vertical cells to be filled shall have vertical alignment to maintain a continuous unobstructed cell of not less than 2" x 3".
- C. Cells containing reinforcement shall be solidly filled with grout and pours shall be stopped 1½" below top of course to form a key with the next lift. Cells without reinforcement need not be grouted.
- D. Hollow unit masonry shall be grouted in heights of less than four ft. Grout shall be puddled or vibrated into place.

8. Cleaning

- A. After completion of grouting, masonry shall be thoroughly cleaned by scrubbing with fiber brushes and cleaner. Leave masonry clean and free from grout stains or traces of cleaning compound and with all joints pointed.

## DIVISION 5

### METALS

#### SECTION 05120

#### STRUCTURAL STEEL

##### 1. General

- A. Building structure shall be a combination of wall bearing and steel column supported steel beams, joist girders, open web steel joist and metal deck.
- B. Menards will be supplying the structural steel for the project. Contractor to review the material list and know what materials will be supplied.
- C. Contractor will not look to Menards for extra payment or extension of construction completion dates for deliveries shipped early or late, out of sequence, not on schedule or for any shortages or overages of steel.
- D. Contractor to provide equipment on site to unload all steel shipments. Contractor will not look to Menards for extra payments for equipment, labor, etc. for early or late shipments or out of sequence. Contractor to verify all materials delivered and inform Menards immediately of any shortages.
- E. **Contractor responsible for all handling and storage of structural steel on site.** Contractor will not look to Menards for extra cost for handling the structural steel. All steel shall be stored on site off ground, under cover and in a dry location to prevent damage or deterioration of the components. Contractor will be held responsible for thoroughly cleaning exposed steel components prior to painting.
- F. Menards will supply shop drawings to the contractor for review and approval if requested.

##### 2. Materials

- A. For fabrication of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Contractor responsibility to remove blemish by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.
- B. Structural steel shapes, plates and bars: ASTM A36, except where other type steel is indicated.
- C. Cold-formed steel tubing: ASTM A500, Grade B.

The contractor will have the building/site ready for structural steel deliveries on the dates listed on the contract documents and will have equipment and manpower to receive, unload and handle all deliveries. Deliveries will not be refused.

- D. Hot-formed steel tubing: ASTM A501.
- E. Steel pipe: ASTM A53, Type E or S, Grade B, Black.
- F. Steel castings: ASTM A27, Grade 65-35, medium-strength carbon steel.
- G. Anchor bolts: ASTM A307, nonheaded type unless otherwise indicated.
- H. Unfinished threaded fasteners: ASTM A307, Grade A, regular low-carbon steel bolts and nuts.
  - 1. Provide hexagonal heads and nuts for all connections.
- I. Electrodes for welding: Comply with AWS Code.
- J. Structural steel primer paint: Gray oil, TT-P-86, Type I.

3. Inspection

- A. Erector must examine areas and conditions under which structural steel work is to be installed, and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the Erector.

4. Erection

- A. Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds. Temporary shores for exterior wall beam support supplied by Fabcon. Contractor to unload and install.
- B. Provide temporary planking and working platforms as necessary to effectively complete work.
- C. Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work. Furnish templates and other devices as necessary for presetting bolts and other anchors to accurate locations.
- D. Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates. Set

loose and attached base plates and bearing plates for structural members of wedges or other adjusting devices. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, except if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

- E. Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming a part of a complete frame or structure before permanently fastening. Clean bearing surface and other surface which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances. Splice members only where indicated and accepted on shop drawings.
- F. On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.
- G. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
- H. Do not enlarge or flair holes in members by burring or by use of drift pins, except in secondary bearing members. Ream holes that must be enlarged to admit bolts.
- I. Do not use gas cutting torches in field for correcting fabrication errors in structural framing. Cutting will be permitted only on secondary members which are not under stress, as acceptable to Architect. Finish gas-cut section equal to a sheared appearance when permitted.
- J. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas with same material as used for shop painting, or white coat. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- K. Inspect shop bolted connections in accordance with AISC Specifications.
- L. Inspect and test shop welding and field welding during fabrication of structural steel assemblies, as follows:
  - 1. Certify welders and conduct inspections and test as required. Record types and locations of defects found in work. Record work required and perform to correct deficiencies.
- M. After the installation, field paint, bolt heads and nuts and welded areas, abraded or rusty surfaces on joists and steel supporting members. Wire brush surfaces and clean with solvent before painting. Use same type of paint as used for shop paint or white coat.

## SECTION 05210

### STEEL JOISTS

#### 1. General

- A. Menards will be supplying all steel joist. Steel joist shall be open web steel joist and shall meet the requirements of the applicable Steel Joist Institute specifications and load table, latest edition.
  - 1. Steel joists shall be as manufactured by Vulcraft or equal.
- B. Steel joist girders shall be designed to support loads as indicated on drawings.
  - 1. Steel joist girders shall be as manufactured by Vulcraft or equal.
- C. Menards will supply shop drawings showing layout of joist units, special connections, jointing and accessories. Mark, number, type, location and spacing of girders, joists and bridging.
- D. Contractor to store, handle steel joists and install as recommended in SJI Specifications. Handle and store girders and joists in a manner to avoid deforming members and to avoid excessive stresses.
- E. Contractor responsible to schedule all joist deliveries. Contractor will not look to Menards for any extra cost for shipments out of sequence.

The contractor will have the building/site ready for the joist deliveries on the dates listed in the contract documents and will have equipment and manpower to receive, unload and handle all deliveries. Deliveries will not be refused.

#### 2. Erection

- A. Place and secure steel joists in accordance with SJI "Specifications", latest edition, final shop drawings, and as herein specified.
- B. The spacing of the open web steel joist shall be as shown on plans.
- C. Place joists on supporting work, adjust and align in accurate locations and spacing before permanently fastening.
- D. Provide temporary bridging, connections and anchors to insure lateral stability during construction.

- E. Install bridging simultaneously with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords where terminating at walls or beams.
- F. Field weld joists to supporting steel framework in accordance with SJI "Specifications" for type of joist used. Coordinate welding sequence and procedure with placing of joists.
- G. Bolt joists to supporting steel framework in accordance with SJI Specifications for type of joists and girders used.
  - 1. Provide high strength unfinished threaded fasteners for bolted connections, unless otherwise noted.
  - 2. Fasteners shall be installed in accordance with AISC Specifications for structural joists using ASTM A3225 or A4990 bolts.
- H. After joist installation, field paint bolt heads and nuts, and welded areas, abraded or rusty surfaces on joists and steel supporting members. Wire brush surfaces and clean with solvent before painting. Use same type of paint as used for shop paint, or white paint.



## SECTION 05310

### METAL DECK

#### 1. General

- A. Menards will supply all roof deck and mezzanine deck material.
- B. Steel roof deck and accessories shall be manufactured from steel conforming to ASTM A-611 Grade C, 33,000 psi minimum yield strength.
- C. All decks shall be formed rib type, approved for membrane roofing and rigid insulation board.
- D. Contractor responsible for scheduling, unloading, handling and installing all deck material. Contractor will not look to Menards for extra cost for deck shipments that are shipped out of sequence or for shortages or overages of shipments.

#### 2. Fabrication

- A. Roof deck shall be 1½" deep, 22 gauge minimum, with ribs 6" o.c. and nestable side joints.
- B. Eave closures, edge reinforcing channels, plates, etc. shall be 20 gauge minimum.
- C. All ARC welding electrodes shall conform to the requirements of the American Welding Society.

#### 3. Erection

- A. Steel roof deck shall be erected in accordance with Steel Deck Institute procedures, the manufacturer's specifications and approved erection layouts.
- B. Weld steel deck to support in weld pattern sufficient to withstand a minimum of 35 pounds per square foot gross uplift and provide lateral stability to the top flange of the supporting member. Side laps shall be fastened together a maximum of 1' - 0" o.c. on all spans exceeding five feet. See architectural plans for weld pattern. Decks shall span a minimum of three joist spaces.
- C. Provide all required edge reinforcing channel or angle, closure, plate and other accessories which must be attached directly to the steel deck in order to provide a finished surface for the application of insulation and roofing. The contractor will have the building/site ready for the deck deliveries on the dates listed in the contract documents and will have equipment and manpower to receive, unload and handle all deliveries. Deliveries will not be refused.

- D. All roof decks will have one prime coat of manufacturer's standard paint. Contractor to touch-up all welds.
- E. Contractor to cut all openings for all HVAC equipment, smoke vents, roof hatch, etc. as required.

## SECTION 05400

### COLD-FORMED METAL FRAMING

#### 1. General

- A. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Load Bearing Metal Stud System

- A. All stud and/or joist framing members shall be of the type, size, gauge and spacing as shown in Specifications and Drawings and shall be manufactured by Clark Dietrich Industries, Dale/Incor or Formetal Company.
- B. All galvanized studs and/or joists, 16 gauge and heavier shall be formed from steel that meets the requirements of ASTM A446, Grade D, with a minimum yield of 50,000 psi. Manufacturers certification to yield strength shall be furnished prior to placement of material on job site.
- C. All galvanized 18 and 20 gauge studs and/or joists, all galvanized track and joists end closures shall be formed from steel that corresponds to the requirements of ASTM A446, Grade A, with a minimum yield of 33,000 psi.
- D. All studs, joists and accessories shall be prime painted with a rust-inhibitive paint or shall be formed from steel having a minimum G-60 galvanized protective coating.
- E. All cold-formed steel structural members shall be designed in accordance with AISI's latest "Specifications for the Design of Cold-Formed Steel Structural Members".
- F. All framing components shall be cut squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Members shall be held positively in place until properly fastened.
- G. Axially loaded studs shall be installed in a manner which will assure that ends of the studs are positioned against the inside track web, prior to stud and track attachment.

#### 3. Erection

- A. Tracks shall be securely anchored to the supporting structure as shown on the plans.
- B. Complete uniform and level bearing support shall be provided for the bottom track.
- C. At track butt joints, abutting pieces of track shall be securely anchored to a common structural element, or they shall be butt welded or spliced together.
- D. Framed wall openings shall include headers and supporting studs as shown on the plans.
- E. Jack studs shall be installed below window sills, above window and door headers, at free standing stair rails, and elsewhere to furnish support, and shall be securely attached to supporting members.
- F. Temporary bracing shall be provided until erection is completed.
- G. Wall stud bridging shall be installed in a manner to provide resistance to both minor axis bending and rotation. Bridging rows shall be spaced according to the following schedule:
  - 1. Walls up to 10 ft. height: 2 rows of bridging equally spaced.
  - 2. Walls over 10 ft. height: Bridging equally spaced at 4 ft. o.c. maximum.
- H. Provide stud walls at locations indicated on plans. Such stud walls shall be braced as indicated on plans and specifications. Additional studs shall be positioned to resist the vertical components as indicated on plans.
- I. Splices in axially loaded studs shall not be permitted.
- J. Joists shall be located directly over bearing studs, or a load distribution member (continuous header) shall be provided at top track.
- K. Provide web stiffeners at reaction points where indicated by plans.
- L. Solid joist bridging shall be installed in the first and last two joists spaces and every sixth joist space between, with 2" x 16 gauge strap bridging applied to both top and bottom of joist in remaining spaces. Bridging rows shall be spaced as follows:
  - 1. Spans to 14 ft. - one row at mid-point.
  - 2. 14 ft. to 20 ft. - two rows at third point.
  - 3. 20 ft. to 26 ft. - three rows at quarter points.

#### 4. Cutting

- A. A radial arm saw (15,000 to 18,000 rpm rim speed), with 5/32" friction blade having 280 to 300 teeth (10 teeth per inch) and expansion slots, is recommended for use in the

shop. Other suggested cutting equipment includes a cut-off (chop) saw with reinforced abrasive blade, band saw, or power hack saw.

5. Welding

- A. A wire feed (MIG) welder, operating on 200 volts service with a capacity of 60-110 amperes and approximately 23 volts variable output, is recommended for fast, uniform welding in the shop. Good welds may also be obtained from a 200 amp shielded metal arc welder (SMAW) or “Hot Box”, utilizing 3/32” or 1/8” diameter AWS type E-6013 or E-7014 rod, with a heat setting of 60-90 amps depending on gauge of material.

## SECTION 05500

### MISCELLANEOUS METALS

#### 1. Products

- A. Menards will provide 6" or 4" round standard steel or 6" or 8" wide flange guard posts as indicated on the drawings. Contractor to unload and install. Install guard post where shown on the plans. Install post 42" in concrete, 48" or 36" (verify prints) above finish floor fill with concrete finishing top to a smooth dome shape, apply 1 coat of primer paint and install covers per plans.
- B. Menards will provide steel "C" channel at each depressed loading dock as shown on the drawings. Contractor to unload and install. Paint same color as dock leveler.
- C. Menards will provide roof ladder or stair as indicated from 2½" x 3/8" continuous structural bar side rails and ¾" steel bar rungs, spaced 12" o.c. Rungs shall have non-slip surface coating. Support ladder at top and bottom. Intermediate supports shall be no more than 5' - 0" o.c. Contractor to unload, install and paint.

## DIVISION 6

### CARPENTRY

#### SECTION 06100

### ROUGH CARPENTRY

#### 1. General

- A. All lumber, unless otherwise noted, shall be supplied by Menards. Refer to the drawings for specific lumber grade and species.
- B. All fasteners, as indicated on the materials list, unless otherwise noted, shall be supplied by Menards any fasteners required beyond the quantities listed shall be supplied by the contractor.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers' responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### 2. Bracing

- A. Permanent bracing (diagonal, lateral, etc.) shall be installed per plans and truss design requirements. If there is a discrepancy between the plans and truss design requirements, contact the Menard, Inc. project manager to resolve. Bracing components and installation shall follow standards set forth in Structural Building Components association (SBC) and Truss Plate Institute (TPI) guide to good practice for handling, installing, retraining and bracing of metal plate connected wood trusses, Section B10 of 2008 Edition.
- B. Temporary bracing shall be utilized to withstand downward, uplift and lateral loads. Bracing shall be applied immediately as rough framing progresses. Do not hang more trusses than temporary bracing, permanent bracing and purlins can be completed by the end of the work day.

#### 3. Large Truss Setting

- A. Spreader bars for trusses exceeding 30' long and equal to 2/3 of the truss overall length shall be utilized.

## SECTION 06200

### FINISH CARPENTRY

#### 1. General

- A. All finish hardwoods, softwoods and millwork, unless otherwise noted, shall be supplied by Menards
- B. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.
- C. Install the work plumb, level, true and straight with no distortions. Shim as required with concealed shims.
- D. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
- E. Install standing and running trim with minimum number of joints possible, using full-length pieces to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter and corners and comply with quality standards for joinery.
- F. Anchor woodwork to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with wood filler, and matching final finish where transparent finish is indicated.
- G. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers' responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers' responsibility to supply at no additional cost to Menard, Inc.

#### 2. Adjustment, Cleaning, Finishing & Protection

- A. Repair damaged and defective woodwork wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean hardware, lubricate and make final adjustments for proper operation.



- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop applied finishes restoring damaged or soiled areas.
- D. Complete the finishing work specified as work of this Section, to whatever extent not completed at shop or prior to installation of woodwork.

3. Execution

- A. Install all wood and hollow metal doors complete with all hardware.
- B. Install all toilet room accessories as shown on the drawings.
- C. Supervise and arrange with painter, for sealing, painting or back painting of all wood trim, doors, metal items, etc.
- D. Receive, store and be responsible for all finish hardware. Properly tag, index and file all keys. Apply hardware in accordance with the manufacturer's instructions; fit accurately; apply securely and adjust carefully. Use care not to injure the work when applying hardware.

## DIVISION 7

### THERMAL AND MOISTURE PROTECTION

#### SECTION 07200

##### 1. General

- A. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### INSULATION

##### 1. Stud Wall Insulation

- A. Batt type 5½” minimum thickness, “R” value = 19 fiber glass insulation. Width of batt shall be sized to fit stud opening. All batt insulation’s shall be supplied by Menards

##### 2. Roof Insulation

- A. The roof insulation shall be supplied and installed by Menards. General contractor shall unload materials and provide coordination of installation, and place on the roof. Subcontractor will install. Any excess insulation general contractor will stack, band and tarp as requested by Menards
- B. Contractor to provide dumpster for scrap insulation.

##### 3. Vapor Barrier

- A. 6 Mil clear poly vapor barrier will be supplied by Menards and installed by the contractor for walls and under concrete floors as noted on the plans.

## SECTION 07240

### EXTERIOR INSULATION & FINISH SYSTEM

#### 1. General:

- A. Provide exterior insulation and finish system (EIFS) as shown and as specified. Comply with applicable provisions of Div. 0 and 1.
- B. EIFS shall be a field-applied exterior cladding assembly consisting of a cementitious finish that is wet-applied to an approved substrate secured to structure. EIFS shall be recognized by the Exterior Insulation Manufacturer's Association (EIMA).
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at not additional cost to Menard, Inc.

#### 2. Performance Requirements:

- A. EIFS shall have been tested for durability as follows:
  - 1. Abrasion Resistance: ASTM D968 (Federal Test Standard 141A Method 6191); no deleterious effects after 132 gal.
  - 2. Absorption-Freeze-Thaw: 60 cycles, soak at 68 degrees F for four days then 14 degrees F for two hours, then 68 degrees F for two hours; no checking, cracking, or splitting.
  - 3. Accelerated Weathering: ASTM G23 (Federal Test Standard 141A Method 6151); 2,000 hours. No deterioration.
  - 4. Mildew Resistance: MIL Std 810B; passes.
  - 5. Moisture Resistance: ASTM D2247 (Federal Test Standard 141A Method 6201); no deleterious effects after 14 days.
  - 6. Salt Spray Resistance: ASTM B117 (Federal Test Standard 141A Method 6061); 5% concentration for 300 hours. No deleterious effects.
  - 7. Water Penetration: ASTM E331; no water penetration to the innermost surface of the test specimen.
  - 8. Water Vapor Transmission: ASTM E96 Water Method, Procedure B; Standard lamina: 14 gr/hr-ft<sup>2</sup>.
- B. EIFS shall have been tested for structural performance as follows:
  - 1. Bond Strength: ASTM C297; minimum 19.1 psi; failure in the substrate or insulation board.
  - 2. Full Scale Structural Tests: ASTM E330; minimum failure load under positive or suction force of 90 psf unless otherwise specified; substrate failure.
  - 3. Impact Resistance: In accordance with EIMA Standard 101.86, impact range of 25-49 in-lb.
- C. EIFS shall have been tested for fire performance as follows:

1. Flame Spread: ASTM E84. When tested individually;
    - a. The EPS insulation board shall have a Flame Spread index not exceeding 25 and a Smoke Developed index not exceeding 450.
    - b. The adhesives and coatings shall have a Flame Spread index not exceeding 20 and a Smoke Developed index not exceeding 10.
  2. ASTM E108 (Modified).
3. Submittals:
  - A. Make submittals in accordance with Section 01300. Submit shop drawings for panels; include erection drawings and details.
  - B. Submit actual samples of completed system showing range of finish coat texture available for specified general effect. Samples shall be made using same tools and techniques as for actual projects.
  - C. Submit color charts for lamina finish and sealants.
4. Quality Assurance:
  - A. Applicator and insulation manufacturer shall be approved by EIFS manufacturer.
  - B. Insulation board shall be encapsulated by lamina or substrate, and separated from interior of building by thermal barrier having a 15 minute fire rating. Lamina and insulation board shall be classified by Underwriter's Laboratories.
  - C. System shall be approved by Factory Mutual as Class I as listed in the Factory Mutual Approval Guide.
5. Delivery, Storage and Handling:
  - A. Deliver materials in original unopened packages with labels intact. Store materials protected from weather and at temperatures not less than 40 degrees F.
6. Project Conditions:
  - A. Ambient air temperature shall be 40 degrees F or greater at time of installation and for at least 24 hours after application. Finish system and adjacent materials shall be protected from weather and other damage during installation and while curing.
7. Warranty:
  - A. Provide a minimum 2 year written manufacturer's limited warranty for materials at project close-out.
8. Acceptable Manufacturers:
  - A. Manufacturers and approved installers meeting or exceeding the specified requirements are acceptable. Deviations taken from the specified requirements shall be approved prior to bidding in accordance with Instructions to Bidders.
9. Stucco Lamina:

- A. Cementitious finish shall be polymer based, Class PB, thin, soft coat with flexible finish surface.
  - B. Base coat shall be compatible with substrate and finish coats.
  - C. Portland cement shall be Type I, I-II, complying with ASTM C150 and as recommended by EIFS manufacturer.
  - D. Water shall be clean, potable, and free of foreign matter.
  - E. General finish coat texture effect shall be:
    - 1. Pebbled (spray texture).
  - F. A/E will select actual texture for project from submittal samples indicating range of finish available for general effect.
  - G. Color shall match Dryvit System, Inc. to adjacent precast in brick surface. Verify color with Menards prior to installation. Contractor to provide a mock up sample 2' x 2' in size for Menards approval.
10. Exterior Finish System Substrate:
- A. Extruded polystyrene insulation board shall comply with ASTM C578, Type IV, min. 25 psi compressive strength, 1.6 pcf density, 0.3% max. water absorption, thermal conductivity (R-value at 40 degrees F) of 5.4. Thickness shall be as shown.
  - B. Insulation board shall comply with requirements recommended by EIFS manufacturer and shall be aged (air dried) for six weeks before use.
  - C. Exterior gypsum wallboard: G-P Gypsum Corp. - "Dens-Glass Gold-Fireguard", CertainTeed – "GlasRoc" or approved equal.
11. Reinforcing Mesh:
- A. Balanced, open weave, glass fiber mesh made from twisted multi-end strands, specifically treated for compatibility with finish materials with a minimum weight of 4.2 oz/sq. yd. and complying with ASTM D578.
12. Sealant System:
- A. Expansion joints shall be sealed with a multi-component epoxidized polyurethane or as otherwise recommended by EIFS manufacturer; Tremco "Dymeric", Pecora "Dynatrol II", or equal. Provide recommended primer, backer rod, and bond breaker.
13. Accessories:
- A. Provide indicated and recommended accessories to provide expansion and control joints, reveals, terminations, and similar features in EIFS. Adhesives and mechanical fasteners shall be recommended by manufacturer to obtain acceptable bond strengths when tested in accordance with ASTM D897.
14. Inspection:

- A. Examine substrates and conditions. Notify in writing of unsatisfactory conditions. Do not proceed until unsatisfactory conditions are corrected.
  - B. Substrates shall be sound, free of hot spots, releasing agents (silicones, oils, etc.) and other residue. Surface shall have no planar irregularities greater than 1/4".
15. Installation:
- A. Apply EIFS in accordance with manufacturer's recommendations and approved shop drawings.
  - B. Expansion joints shall be provided at the following areas and as recommended by EIFS manufacturer. Joints not shown on Drawings shall be confirmed with A/E prior to installation.
    - 1. Substrate system expansion joints.
    - 2. Building expansion joints.
    - 3. At floor lines in wood frame construction.
    - 4. At substrate changes in material.
    - 5. Where significant structural movement may occur.
16. Clean-Up:
- A. Excess materials and debris shall be removed from job site by installer. Review completed EIFS and adjacent construction. Clean to make ready for Owner acceptance.

## SECTION 07530

### SINGLE PLY MEMBRANE ROOFING

1. General
- A. The single ply membrane roofing shall be supplied and installed by Menards. General contractor shall receive and unload materials and provide coordination of installation.
  - B. Roof contractor will provide equipment and labor to place roof materials on the roof.
  - C. Roof contractor to remove all debris, waste, etc. from all roofing operations.
  - D. Contractor will not look to Menards for delays in the roof installation.
  - E. Roof contractor will install all roof cap trim and flashing for same.
  - F. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials

above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at not additional cost to Menard, Inc.

## SECTION 07600

### FLASHING AND SHEET METAL

#### 1. General

- A. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.
2. Menards shall supply the following, contractor shall provide installation, unless noted otherwise:
  - A. 29 gauge MM steel panels.
  - B. All MM steel trims.
  - D. Closure strips as necessary to provide a waterproof installation.
  - E. Color coded screws for fastening MM panels and trim.
3. Materials supplied and installed by contractor:
  - A. Tape mastic as necessary to provide a waterproof installation.
  - B. All caulking as required for a waterproof installation.
  - C. Portable panel shear (see cut sheets). No sawing of panels/trims is acceptable. If sawing panels are identified, contractor will replace all required materials.
4. Metal flashing cap shall be supplied and installed by Menards. General contractor shall receive, unload, place materials on the roof and provide coordination of installation. General contractor to install blocking for the metal cap flashing.
5. All materials are to be installed according to manufacturers recommendations, keeping cutting edges sharp, clean and providing a weatherproof enclosure with neat appearance and good sound mechanical connection and joints. Cuts on steel panels are to be made with a steel bar

shears. In no case shall the contractor cut panels with a circular saw, abrasive wheel cutter or band shears.

6. Contractor will be responsible for replacement and cost for material to replace any dented or damage steel panel or trim. If necessary predrill holes to prevent damaging the panel. Fasten all MM steel panel with color coded fasteners through the high rib of the panel. On panels applied to vertical surfaces, apply fasteners starting at the top of the panel working downward. **Follow lapping details per manufacturers requirements shown on plan.** Contractor to fasten pro-snap metal siding per manufacturers specifications utilizing the correct fasteners.
7. Remove excess material from roof and site and organize the materials and make ready for return.
8. Touch up paint on field cut edges with manufacturers touch up paint.

## SECTION 07720

### ROOF ACCESSORIES

1. Materials
  - A. Menards will provide a "S" roof hatch, 2' - 6" x 3' - 0" as manufactured by the Bilco Company of New Haven, CT. Roof hatch shall be complete with 14 gauge galvanized steel cover with 3" beaded flange, 1" insulation with 22 gauge galvanized steel liner. Curb shall be 14 gauge galvanized steel, 12" high with 3½" roof lunge, and integral cap flashing and 1" rigid insulation . Factory finish shall be prime painted. Contractor to unload, install and paint with 3 coats of safety yellow paint.
  - B. Install smoke vents, skylights and smoke curtains if required and as indicated on plans. Menards to supply material. Contractor to verify with Menards locations and types of materials to be utilized and proper installation.

## SECTION 07900

### CAULKING AND SEALANTS

1. General
  - A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.
  - B. **Provide written guarantee for all caulking and sealants against all defects of material or application for a period of five years after date of acceptance. All failures that may occur within this period, due to defective application or materials shall, upon written notification of such failure, be repaired or replaced**



**with proper materials and labor as approved by Menards , at no additional cost to the owner.**

- C. Submit to Menards samples of the various types (and colors where applicable) of materials specified, prior to delivery of materials to the job.
- D. Engage an experienced installer who has completed joint sealant applications similar in material, design and extent that have resulted in jobs with a record of successful in-service performance.

## 2. Materials

- A. Standard caulking compound shall be a one part acrylic latex compound Pecora “AC-20”, DAP “Latex Caulk”, DeWitt Products Company “Latex Caulking” or Tremco “Acrylic Latex Caulk”, “Silicone Caulk”, “Urethane Caulk”, “Sonneborn”, “Polyurethane Caulk”.
  - 1. Standard caulking shall be used for interior caulking. In general, joints between masonry and door frames, glazed partitions, columns, dissimilar materials, millwork items, miscellaneous openings, joints between buildings and sidewalks, joints in the sidewalk and joints between sidewalk and pavement.
- B. Caulking between sidewalk and precast and exterior expansion joints shall be a two component chemical cure polyurethane - SL2 - as manufactured by Sonneborn. Follow manufacturer instructions for installation.
- C. Menards contractor will provide caulking of exterior and interior of all panel joints in the precast panels.
- D. Masonry control joints shall be caulked with a high quality urethane caulk. Control depth of caulk at 3/8” to 1/2” with a continuous closed cell backer rod. Submit color samples of caulk for Menards approval.
- E. See Section 03300 for floor joint filler.
- F. Fire safe caulking if required where smoke curtains meet roof deck.
- G. Caulk where roof deck meets exterior walls to seal the space between the top of the wall and roof deck flutes.

## DIVISION 8

### DOORS AND WINDOWS

#### SECTION 08100

#### HOLLOW METAL DOORS AND FRAMES

##### 1. General

- A. All insulated steel doors and frames shall be supplied by Menards unless otherwise noted. Contractor shall unload, handle, paint and provide installation. See drawings for specifics.
- B. Metal prehung doors are delivered with frames long enough for use of a threshold. No thresholds are utilized on the interior of the building, so the frames will need to be cut down to allow for the top brick mold to fit properly and minimize the gap at the floor. Discuss with Menard, Inc. Project Manager.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

#### SECTION 08200

### WOOD DOORS AND FRAMES

##### 1. General

- A. All wood doors and frames shall be supplied by Menards unless otherwise noted. Contractor shall unload, handle, varnish or paint and provide installation. See drawings for specifics.
- B. Metal prehung doors are delivered with frames long enough for use of a threshold. No thresholds are utilized on the interior of the building, so the frames will need to be cut down to allow for the top brick mold to fit properly and minimize the gap at the floor. Discuss with Menard, Inc. Project Manager.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is

on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

## SECTION 08360

### OVERHEAD DOORS

#### 1. General

- A. All overhead doors shall be supplied by Menards unless otherwise noted. See drawings for specific information.
  - 1. Contractor to receive, unload, handle and install overhead door complete with all necessary hardware, jamb and head mold strips, anchors, inserts, hangers, weather-stripping and equipment supports in accordance with manufacturers instructions.
  - 2. Upon completion of installation and prior to store opening, lubricate, test and adjust doors to operate easily, insure that doors are free from warp, twist or binding during operation and weathertight fit for entire perimeter and that when opened the door remains completely open.
  - 3. Contractor to install overhead door operator and all equipment associated with operator. Operators supplied by Menards
  - 4. **Overhead door installer to be a “Ideal” certified door installer. Contractor to provide evidence of this prior to installation and before payment.**
  - 5. **Before acceptance, furnish written Certified Guarantee and Agreement, in a form satisfactory to Menards, against defective work, material and operation for a period of two (2) years after the date the store opens. Further agrees to repair, service, replace and adjust all work necessary to provide complete satisfactory use and function of the installation for the said period, and without additional cost to Menards. Make all necessary repairs, replacements and adjustments immediately upon notification and cause a minimum interruption of use.**
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general

contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

## SECTION 08400

### ALUMINUM ENTRANCES, STORE FRONTS AND GLAZING

#### 1. General

- A. Manual aluminum entrances, store front windows and glazing shall be supplied and installed by Menard, Inc. unless otherwise noted. See Drawings for specific information.
- B. Automatic doors including man doors at front entrance/exits shall be supplied and installed by Menards. All caulking supplied and performed by auto door contractor (Black). Auto door contractor to provide a AAADM certified installer to install the automatic doors. Auto door contractor is required to supply glazing for the automatic doors and man doors adjacent to auto doors.
- C. Contractor shall verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to Menards any conditions which prevent proper execution of this work. If rough openings are built larger than specified on the plans, the contractor will be required to supply break metal and caulking necessary. The contractor will be required to supply the Auto door contractor the project status updates and rough openings prior to them mobilizing.

#### 2. Guarantee

- A. **Before acceptance, furnish written Certified Guarantee and Agreement, in a form satisfactory to Menards, against defective work, material and operation for a period of two (2) years after final acceptance. Further agrees to repair, service, replace and adjust all work necessary to provide complete satisfactory use and function of the installation for the said period, and without additional cost to Menards Make all necessary repairs, replacements and adjustments immediately upon notification and cause a minimum interruption of use.**

#### 3. Products and Materials

- A. All glass shall be as manufactured by ASG Industries, Inc., Libby-Owens-Ford Co., PPG Industries or approved equal.
  - 1. Each piece of glass shall be labeled with the manufacturer's name and the grade or quality, grade in compliance with federal specification DD-G-451a.

2. As noted on the drawings, the glass shall be glazing quality, clear double pane insulated and tempered as applicable and required by code. Minimum glass thickness to be 1/4".
- B. All aluminum framed doors, windows and entrances shall have a black anodized aluminum finish unless otherwise specified.
1. Aluminum work shall be prefabricated and delivered in as large assembled units as practicable. Miter joints in exposed work and accurately fit with hairline joints. Screws, bolts, nuts and other fastening devices shall be of aluminum or nonmagnetic stainless steel, concealed where practicable. Exposed screws, where required and approved by Menards, shall match the aluminum surface finish. Cutouts, recessed mortising or milling operations required for hardware shall be accurately made and reinforced with backing plates as required to insure adequate strength of connection.
  2. Doors shall be medium stile doors, single or pair of doors, as indicated on drawings. Rails and stiles of extruded aluminum tubing not less than 0.125" thick, securely joined and reinforced by means of diecast structural corner assemblies. Lock hinge and meeting stiles shall be beveled 1/8". Corners of doors accurately jointed and fitted to flush hairline joint and welded along the concealed lines of contact. All welding shall be on unexposed sides to prevent pitting, discoloration, weld halo or other surface imperfections after finishing. Glazing stops shall be not less than 0.50" thick, with sponge rubber glazing channel seals extending on both sides of glass, and shall be snap-in type of size and detail required for indicated glazing. No exposed screws permitted. Equip each door leaf with adjusting mechanism located in top rail near the lock stile, providing for minor clearance adjustments after installation. All cutouts, recesses, mortising or milling for hardware preparation shall be accurately made and reinforced as required. Exterior doors shall be weather-stripped on three sides and at meeting rail of pairs with metal backed pile cloth, or similar approved weather-stripping standard with the manufacturer. Where scheduled on drawings, provide weather-stripping at sill of exterior doors, of type shown on drawings.
  3. Manual aluminum doors at main store exit and entrance shall be key locked from the outside and thumbturns on inside. All other aluminum doors, shall have cylinder holes provided on inside of door only with thumbturns. All manual aluminum doors shall be **equipped with continuous hinges, aluminum hydraulic closures LCN 4040 and solid center stiles, low profile thresholds. Pull hardware shall be as manufactured by Rockwood #157A and concealed panic push hardware. All hinges, push/pull hardware, thumbturn locks, closures, etc. shall be black anodized finish to match frames.**
- C. Cart doors to be supplied by Menards including operators, contractor to install complete.

- D. Automatic sliding door and adjacent man door system will be supplied by Menards. Contractor and AAADM certified installer to perform training with Menard, Inc. General Manager once they are on site.
- E. No thresholds allowed at sliding doors. Caulk inside and outside of thresholds on main doors and break away doors.

#### 4. Installation

- A. Install the work in a secure, watertight manner, using skilled workmen. Erect all work in accordance with the drawings, specifications and approved shop drawings. Erect all framing members square, plumb, in true alignment with one another and with adjoining work, with surfaces free from dents, buckles, dimples or other defects. Provide secure fastening devices in accordance with required safety factors. Where anchorage involves other trades, provide testing drawings for proper installation.
  - 1. Sliding door installer must be AAADM certified and an approved manufacture installer (i.e. Horton, Record USA, etc.) of the Menard supplied auto doors. They must provide the following:
    - a. AAADM Certification from installing contractor
    - b. AAADM compliance certificate signed by AAADM certified door inspector
    - c. Complete automatic sliding door completion checklist (at end of this specification section)
    - d. Supply 2 year labor warranty and guarantee 12 hour response time for repairs. They will be required to diagnose and repair problem. If parts are required, contact the door supplier direct, provide parts and replace as needed. Installer must take whatever means necessary to get doors operational until replacement parts are received.

### SECTION 08700

#### FINISH HARDWARE

##### 1. General

- A. All locksets and hardware for hollow metal doors and wood doors shall be supplied by Menards. Unless noted otherwise. Contractor shall provide all necessary installations. See the drawings for type and locations.

- B. Finish hardware must be neatly and properly installed in accordance with the best practices as approved by Menards. All hardware must be thoroughly cleaned when it is turned over to the Owner.
- C. No extra cost will be allowed because of changes or corrections necessary to facilitate the proper installation of any hardware. The contractor shall be responsible for the proper fabrication of all work or material to receive the hardware.
- D. Contractor to provide installation for all door bumpers, kick plates, handles and coat hooks.
- E. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

## Automatic Sliding Door Completion Checklist

**Store Location:**

**Store General Manager:**

**Door Supplier:**

**AAADM Certified Door Installer:**

**Walk-thru Date:**

## Checklist Items

- 1) Doors are installed and operating per the standard and any associated codes.
- 2) Sliding door function controls work properly on all settings.
- 3) Breakaway doors function properly and reset easily.
- 4) Thumb turn and keylocks are in correct location and function smoothly.
- 5) Closures on mandoor are adjusted and function properly.
- 6) Breakaway and mandoor thresholds are completed caulked inside and out.
- 7) Mandoor and sliding doors have cart bars installed.
- 8) All head and jamb doorstops installed on mandoor.
- 9) Interior push bars and exterior pull handles are installed on mandoor.
- 10) Correct warning stickers are installed on all doors.
- 11) Black caulking complete around jambs and headers inside and out.
- 12) All Menard Inc project manager punchlist items have been completed.
- 13) Received AAADM certification from installing contractor.
- 14) Received AAADM compliance certificate signed by AAADM certified door inspector.
- 15) Received Warranty Statement from door supplier.
- 16) Received Owners O & M manual from door supplier via email.
- 17) Received Installation instruction manual from door supplier via email.
- 18) General Manager instructed on how to conduct 'Daily Safety Check'.
- 19) General Manager instructed on location of power disconnect.
- 20) General Manager instructed on location and use of function controls.
- 21) Completion checklist completed and signed copies to General Manager and Project Manager.

[illegible]



## DIVISION 9

### FINISHES

#### SECTION 09250

#### GYPSUM DRYWALL

##### 1. General

- A. Menards supplies all 5/8" Gypsum wallboard and drywall screws.
- B. Contractor shall furnish all other materials and equipment and perform labor required to execute the drywall work as indicated on the drawings. All materials supplied under this division are to be purchased at a Menards store outlet.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material supplier's responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material supplier's responsibility to supply at no additional cost to Menard, Inc.

##### 2. Installation

- A. Apply wallboard with long edges at right angles to framing "Horizontal Application".
- B. Erect ceilings first. Wall panels shall fit snugly against ceiling boards and first board shall be squared with adjacent wall.
- C. Stagger joints so that the corners of four sheets do not meet at one point.
- D. Fasten by screwing. Slightly depress screw heads without breaking face of paper.
- E. Use metal trims as required by conditions, at exposed edges, corners and at intersection with dissimilar materials. All trims shall be fastened by nailing or screwing, not crimping. All trims supplied by contractor and are to be purchased at a Menards retail outlet. Contractor is to provide proof of purchase.

##### 3. Finishing

- A. Embedding compound shall be applied to wallboard joints in a thin uniform layer. After tape application, a minimum of two additional coats of finishing compound shall

be applied and feathered out to not less than 12" wide. Areas shall be sanded as necessary to obtain uniformly smooth surfaces. Menards will not accept less than a perfect job. Tape and compound supplied by contractor and are to be purchased at a Menards retail outlet - contractor to provide proof of purchase.

- B. Fill all screw holes, gouges and other inconsistencies.

## SECTION 09300

### CERAMIC TILE

#### 1. General

- A. Menards will provide ceramic tile and grout. Contractor shall furnish all other materials and equipment and perform labor required to execute the ceramic tile work as indicated on the drawings. All material supplied are to be purchased at a Menards retail outlet – contractor to provide proof of purchase.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material supplier's responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material supplier's responsibility to supply at no additional cost to Menard, Inc.

#### 2. Installation

- A. Layout of all tile work so as to minimize cuts of less than one half tile in size. Align all floor joints to have straight, uniform grout lines parallel with adjacent walls and surfaces.
- B. Mortar and grout shall be proportioned in accordance with ANSI Standard Specifications.
- C. Grout color for the restroom floors shall be 'Sable' as manufactured by TEC. Sable Power Grout is stain resistant, thus not required to be sealed.

## SECTION 09500

### ACOUSTICAL CEILINGS

#### 1. General

- A. Menards shall supply 2' x 4' lay-in panels and Grid only.
- B. Contractor shall furnish all other materials and equipment and perform labor required to execute the acoustical ceiling work as indicated on the drawings. All materials supplied are to be purchased at a Menards retail store – provide proof of purchase.
- C. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material supplier's responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material supplier's responsibility to supply at no additional cost to Menard, Inc.

#### 2. Installation

- A. Installation of all acoustical ceiling material and suspension systems, including hangers, grillage, hold down clips, etc., shall be in strict accordance with the recommended practice of the current ASTM Standard C-636.
  - 1. Installation shall be by an acoustical ceiling contractor approved by the material manufacturer.
- B. Lay-in ceiling system shall be suspended from structural system or supplemental steel framing supplied by this subcontractor. Suspension from metal roof deck, duct work, piping, etc., will not be permitted.
  - 1. Hangers for suspended grid system shall be not less than #12 gauge and spaced no greater than 4' - 0" o.c. Where joist spacing is greater than four feet, counter splayed hangers must be provided or intermediate hangers from supplemental steel must be supplied.
- C. Lay-in ceiling system shall consist of main beams spaced 4' - 0" o.c., at right angles to the structural framing, with cross tees intersecting the main beams, parallel to structural framing, 2' - 0" o.c.
  - 1. Provide additional main beams as required to support light fixtures.

- D. All lines shall be true and straight and completed ceilings shall be in perfect alignment.

## SECTION 09700

### RUBBER FLOORING

#### 1. General

- A. Rubber flooring for elevator installed by contractor.
- B. Rubber flooring material and adhesive supplied by Menard, Inc.

#### 2. Guarantee

- A. All labor, installation to be guaranteed for two (2) years.

#### 3. Floor Preparation

- A. Floor surface to be smooth with no more than 1/8" variation. From a plane within 10'. All ridges, blemishes and other irregularities shall be ground down. All cracks, holes and depressions shall be filled with approved filler.
- B. Floor surface to be properly cleaned and inspected for smoothness prior to beginning the installation.
- C. The general contractor to maintain a minimum temperature of 65 degrees F. during the installation and 48 hours prior to the installation.
- D. Contractor to provide moisture test as required assuring that the moisture content within the concrete is at acceptable levels in strict accordance with the manufacturer's requirements.

#### 4. Installation

- A. Installation of the rubber flooring materials shall follow the respective manufacturer's specifications and recommendations.
- B. The rubber flooring installation shall be by direct glue down or tape mastic method per the manufacturer's specifications.
- C. Edges to be laid tight with no buckling or irregularities.

#### 5. Protection and Cleaning

- A. At all times keep the rubber flooring surfaces clean and protected from damage.

- B. Prior to store set up, contractor shall thoroughly clean all rubber flooring, remove stains, if required, following manufacturer's recommendations.

## SECTION 09900

### PAINTING

#### 1. General

- A. Contractor shall supply all materials, equipment and labor necessary for the complete and satisfactory application of the paint products.
- B. All paint to be supplied by Menards, paint shall be PPG. All other materials necessary to complete the work are supplied by the painting contractor and purchased at a Menards store.
- C. Paint all exposed plumbing, heating and electrical equipment and material exposed in finished areas or sales area, the same color as used on walls and/or ceilings of that room. This shall include, but not be limited to pipes, ducts, access panels, convectors, grilles, diffusers, electrical items and the like. Dampers and baffles behind grilles or in convectors shall be painted by this Contractor. **Do not paint over unit heaters, in-duct furnaces or name plates or joints in moving parts of equipment.**
- D. All materials used on the work shall be exactly as specified in type and quality. No claim by the painting contractor as to the unsuitability of any material supplied, or his unwillingness to use same, or his inability to produce first class work with same, will be entertained. All empty containers of the paint used are to be left on site until a Menard Project Manager can verify that the paint is the product specified then the containers are to be disposed of legally by the contractor off site. Contractor to thoroughly mix all paint products that will be delivered in 5 gallon and 1 gallon containers.
- E. All clean up by contractor.
- F. All full containers of product left over on the project are to be left in new, clean condition so that these products can be returned to the manufacturer for credit. If the product is in a condition that the manufacturer will not accept, or more than one container of the same paint has been opened, the contractor will be invoiced for this material.
- G. All material used must be Shaken or Drill mixed, boxed and strained prior to application. Due to settling characteristics of the materials used, it is important that each item is shaken or drill mixed 5 to 10 minutes minimum to ensure materials

contents are thoroughly distributed throughout container. All materials must be boxed to ensure uniform finish. Straining material prior to application is also recommended.

- H. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material supplier's responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material supplier's responsibility to supply at no additional cost to Menard, Inc. If additional paint materials are required, they must meet the specifications herein, thus, Menard, Inc. will order. The contractor will be required to give the Menard, Inc. project manager quantities of the material needed, allowing adequate time to receive without limiting the progression of work. The cost of the material will be back charged to the contractor, less the 10% administrative fee.
- I. Contractor to paint gas piping whether inside or outside. Paint pipe white to match ceiling inside. Verify if pipe must be painted on the roof and paint as directed at no additional cost to Menard, Inc.

## 2. Execution

- A. Paint may be applied by spray, roller or brush unless otherwise specified. Method selected must be in accordance with material manufacturer's specifications and/or recommendations, suitable for surface to which material is applied and finish specified. General contractor is to make certain all precautions are taken to prevent overspray problems to the surrounding private or public properties. The general contractor will verify the fact the painter has an updated active overspray insurance policy. All door openings will be protected via a 2x4 walled structure with poly covering it. Should an overspray occurrence take place, the general contractor and its subcontractor will be liable and settle all claims within 30 days of reporting. If settlements are not made, the general contractor and its subcontractor agree to post a cash escrow in an amount alleged to cover the claims. If by the end of the contract claims remain unsettled and Menards is forced to intervene, the cash escrow will be used to pay the remaining claims and the balance returned to the contract amount.
  - 1. Spray application of paint on masonry and precast walls will be permitted. After spray application, areas must be back rolled.
  - 2. Care must be exercised and protection provided for adjacent prefinished or unfinished items, moving parts, or assemblies, sprinkler heads, valves, motors, machinery, etc. Provide all required covering, masking tape, etc.
  - 3. Ensure proper conditions for application before any surface is coated, it shall be cleaned of all dust, dirt, grease, loose rust, mill scale, loose paint, concrete

splatter, weld material, etc. Imperfections and holes in surfaces to be coated shall be cleaned and filled in an approved manner.

Adherence to temperature guidelines listed in the technical data bulletin for each product should be followed. Exterior painting shall only take place when good weather conditions prevail. Painting shall not be undertaken during foggy or misty conditions or when rain or snow is imminent. The temperature of the surface to be painted should be at least 50°F and (5°F) above the dew point. When substrate temperatures are high, care must be taken while applying the paint to prevent formation of voids, pin holes and bubbles due to the rapid evaporation of solvent.

4. **Construct temporary enclosures to enclose overhangs, garden center, etc so overspray does not get on adjacent surfaces. Just wrapping poly or tarps is not sufficient. These areas must be built to withstand high and constant winds. They must be 100% enclosed as to not allow overspray to escape the closure. Safety measures (fresh air, personal safety equipment, etc.) are the contractor's responsibility to maintain.**
- B. Finish colors shall be as per Menards color schedule. Tint primer and undercoat to the approximate shade of the finish coat.
- C. According to the manufacturers of the paint materials specified, these specifications and materials are adequate to provide coverage, waterproofing, and weather resistance when properly applied. If after the specified number of coats are applied, adequate coverage, waterproofing and weather resistance have not been achieved; it shall be this subcontractor's responsibility to apply additional coats at no extra expense to Menards until acceptable performance and finish is obtained.
  1. Paint finish, unless otherwise indicated, shall consist of a minimum of two (2) coats in addition to field or shop applied prime coat. Paint material manufacturers recommended spreading rate and dry or wet mil thickness per coat shall be rigidly adhered to.
- D. Enamels shall be sanded lightly and dusted clean between coats to produce an even, smooth finish.
- E. A detailed inspection of paint work shall be made, and abraded, stained or otherwise disfigured portions shall be satisfactorily touched-up or refinished as necessary to produce a first-class workmanlike acceptable job. Abraided areas, paint drips in primer are to be sanded smooth.
- F. After painting work has been completed, make a detailed inspection of paint finish and carefully remove splatterings of paint material from adjoining work particularly from glass, plumbing fixtures, tile and trim. Repair damages that may be caused by such

cleaning operations. All implements of service shall be removed from the premises and the entire project left in a condition acceptable to Menards

1. Contractor will not dispose of waste on site or down sewers.

### 3. Finishes

#### A. Exterior Masonry/ Precast (green stripe)

1. Surface Preparation. Remove all dirt, dust, grime, chalk and any other forms of contamination.
2. Prime coat. Apply 1 coat of gray PPG 97-148 & 97-149 Series Pitt Guard Rapid Coat Epoxy Mastic at a spreading rate of 160 to 225 square feet per mixed gallon.
3. Finish. Apply a minimum of two coats of PPG 95-8000 & 95-819 Series – Pitthane Ultra Gloss Urethane Enamel Component A, tinted to Emerald Green, at a spreading rate of 350 to 500 square feet per gallon, per coat. Mix 1 gallon of 95-819 – Pitthane Ultra Gloss Urethane Enamel Component B with every 5 gallons of Component A.

#### B. Exterior Metals. Exterior Metal Deck Ceilings and Bar Joist – Overhangs (Garden Center & Special Order Area)

1. Exterior metal deck ceiling and bar joist (Garden Center/Overhang), weld plates, bifold doors and small canopies
  - a. Surface preparation. Remove all dust, dirt, oils, grease, rust and any other forms of contamination. Remove rust by hand tool or power tool cleaning per SSPC-SP2 or SSPC-SP3.
  - b. Prime coat. Spot prime using PPG 6-208 Red Speedhide Rust Inhibitive Primer, at a spreading rate of 390 to 535 square feet per gallon.
  - c. Finish. Apply a minimum of two coats of PPG 95-812 Series, Pitthane Ultra Gloss Urethane Enamel **Component A**, Porcelain White, at a spreading rate of 350 to 500 square feet per gallon, per coat. Mix 1 gallon of 95-819 Pitthane Ultra Gloss Urethane Enamel **Component B** with every 5 gallons of **Component A**.
2. Exterior emerald green steel
  - a. Surface preparation. Remove all dirt dust, grime and any other forms of contamination.
  - b. Prime coat. Spot prime using PPG 6-208 Red speed hide rust inhibitive primer at a spreading rate of 390 to 535 square feet per gallon.
  - c. Finish coat. Apply a minimum of 2 coats of PPG 95-8000 series Pitthane Ultra gloss urethane enamel component A, tinted to emerald green, at a spreading rate of 350 to 500 square feet per gallon, per coat.



Mix one gallon of 95-819 Pitthane Ultra gloss urethane enamel component B with every 5 gallons of component A.

3. Exterior black steel (columns, header plates, lintels, etc.)
  - a. Surface preparation. Remove all dirt dust, grime and any other forms of contamination.
  - b. Prime coat. Spot prime using PPG 6-208 Red speed hide rust inhibitive primer at a spreading rate of 390 to 535 square feet per gallon.
  - c. Apply a minimum of 2 coats of PPG 95-814, Pitthane ultra gloss urethane enamel component A, black, at a spreading rate of 376 to 565 square feet per gallon, per coat. Mix 1 quart of PPG 95-819, Pitthane ultra gloss enamel component B with every 1 gallon of component A, 95-814.

C. Interior Metal Deck Ceilings & Bar Joists (6-151XI does not apply to large hardware & Millwork mezzanines)

1. Surface Preparation. Remove all dirt, dust, oils, grease, grime, rust and any other forms of contamination. Remove rust by Hand Tool or Power Tool Cleaning per SSPC-SP2 or SSPC-SP3.
2. Prime Coat. Spot prime all rusted areas with PPG 6-208 Red Speed hide Rust Inhibitive Primer, at a spreading rate of 390 to 535 square feet per gallon.
3. Finish.

**Interior Building Ceiling System**

- a. Apply one coat of PPG 6-151XI Speed Hide Interior, Super Tech Dry Fog Enamel, Eggshell White, at a theoretical spreading rate of 175 square feet per gallon in the heated areas (heated area) on bar joists, girders and decking. Tip sizes for airless spray, at 1500 to 3000 psi, are 0.017" to 0.019".

**Mezzanine Ceiling System**

- b. Prime coat. Apply one coat of PPG 90-712, Pitt Tech I-E/F White Primer at a spreading rate 250 square feet per gallon.  
Finish Coat. Apply a minimum of two coats PPG 90-374 Pitt Tech I-E/G White Pastel at a theoretical spreading rate of 250 square feet per gallon (mezzanine ceiling, stairs, railings, interior columns, guard shack, prehung doors)

Apply to bar joist and bridging first to avoid dry fall dust forming on the joists. After applying paint to the deck, remove excessive dry fall paint dust from joist, ceiling framing, sprinkler pipes, duct work, etc.

**Floor slabs must be completely protected by poly under all areas.**

D. Interior Drywall, Plywood, OSB, Concrete Block and Precast

1. Drywall - for both heated and unheated areas.
  - a. Surface Preparation. Remove all dirt, dust, grime and any other forms of contamination.
  - b. Prime Coat. Apply one coat of PPG 17-921, Seal Grip Interior/Exterior 100% Acrylic Universal primer/sealer, at a spreading rate of 400 square feet per gallon.
  - c. Finish. Apply two coats of PPG 6-500 Series, Speedhide Semi-Gloss Latex enamel, bright white, at a spreading rate of 400 square feet per gallon, per coat.
2. Restrooms
  - a. Prime coat. Apply 1 coat of PPG 16-90, high performance acrylic latex block filler, at a spreading rate of 50 to 75 square feet per gallon. Perform moisture/adhesion test prior to priming. Submit results to Menard, Inc. project manager prior to applying paint.
  - b. Finish. Apply 1 coat of PPG 98-51 Aquapon WB Water Base Epoxy tinted to Sand Drift #2633 at a spreading rate of 202 to 303 square feet per mixed gallon. Mix 1 gallon of 98-51 Component A with 1 gallon of 98-98 Catalyst Component B.
3. Concrete Block - for both heated and unheated areas.
  - a. Surface Preparation. Remove all dirt, dust, grime and any other forms of contamination. Perform moisture/ adhesion test prior to priming. Submit results to Menard, Inc. project manager prior to applying paint.
  - b. Prime Coat. Apply one coat of PPG 16-90, High Performance Acrylic Latex Block Filler, at a spreading rate of 50 to 75 square feet per gallon.
  - c. Finish. Apply two coats of PPG 6-500 Series, Speedhide Semi-Gloss Latex enamel, bright white, at a spreading rate of 400 square feet per gallon, per coat.
  - d. Exterior concrete block (standard and split faced) and Belgian block pavers will be sealed with a minimum of 1 coat, or as required of clear sealer (provided by Menards) for preventing efflorescence
4. Precast - for both heated and unheated areas.

- a. Surface Preparation. Remove all dirt, dust, grime, grease and any other forms of contamination. Perform moisture/adhesion test prior to priming. Submit results to Menard, Inc. project manager prior to applying paint.
  - b. Prime Coat. Apply one coat of PPG 17-921, Seal Grip Interior/Exterior 100% Acrylic Universal Primer/Sealer, at a spreading rate of 400 square feet per gallon.
  - c. Finish. Apply a minimum of one coat of PPG 6-500 Speedhide Semi-Gloss Latex Enamel, bright white, at a spreading rate of 400 square feet per gallon, per coat.
- E. Interior Metal Doors & Frames, Miscellaneous Metals, Interior Columns, Stair Railings & Stringers & Hardware Mezzanine ceiling & handrails.
  1. Surface Preparation. Remove all dirt, dust, grime, grease, oils, rust and any other forms of contamination. The rust should be removed by Hand Tool or Power Tool Cleaning per SSPC-SP2 or SSPC-SP3.
  2. Prime Coat. Apply one coat of PPG 90-712, Pitt Tech I-E/F White Primer, at a spreading rate of 250 square feet per gallon.
  3. Finish. Apply two coats of PPG 90-374 Pitt Tech I-E/G White Pastel at a spreading rate of 250 square feet per gallon, per coat.
- F. Millwork Mezzanine Plywood Display Walls
  1. Prep. Caulk all joints, screw holes, and deficiencies prior to priming. Mud areas that may be deficient. Consult Menard, Inc. Project Manager.
  2. Prime Coat. Apply one coat PPG 17-921 seal grip interior/exterior acrylic latex primer white at a spreading rate of 400 square feet per gallon.
  3. Finish Coat. Apply 2 coats PPG Grand Distinction Interior Satin White/Pastel Base.
4. PPG Color Codes

95-8000 – Pitthane Ultra Gallon Formula for Emerald Green	HW 3Y + 44 HB 3Y + 20 HC 3Y + 1 HD 3Y + 26
98-51 – Auqapon WB Epoxy Gallon Formula for Conveyor Gray PC815	
B-20 C-44 M-4	
- A. White:
  1. Walls – 6-500 – Speedhide Semi-Gloss Latex enamel.

2. Deck, Joists, Girders in heated areas – 6-151XI Supertech Dryfog Egg Shell White.
  3. Other Metals/Mezzanines PPG 90-374 Pitt Tech I-E/G White Pastel (interior columns, interior guard shack, railings and hardware mezzanine).
  4. Exterior metals – 95-812 Pitthane Ultra Garden Center/back overhang, small canopies, bifold doors. Special Order Area
- B. Black: 8 x 8 door and garden center columns, exterior precast and header plates – 95-814 Pitthane Ultra Gloss Urethane enamel - black
- C. Safety Yellow: Roof hatch – 90-330/05 Pitt-Tech Safety Yellow. Interior striping – 11-54/05 zone line safety yellow
- D. Sand Drift: Bathrooms – Aquapa 98-51/01 Water Base Epoxy Pastel – Component  
1. Color Sand Drift #2633 (200 SF/Gal).
- E. True Finish Brown: Warehouse stair railing and stringers – Pitt Tech 90-377 High Gloss Brown
- F. The following is a list of the products supplied by Menard, Inc.
1. 6-500 Speedhide Interior enamel bright white for walls.
  2. 16-90 Pitt-Glaze High Performance Int./Ext. Acrylic Latex Block Filler.
  3. 6-208 Speedhide Rust Inhibitive Oil Primer – Red.
  4. 17-921 Seal Grip Int./Ext. Acrylic Latex White Primer for drywall, precast and plywood.
  5. 90-374 Pitt Tech I-E/G White - Interior columns, guard shack, hardware/millwork mezzanine, joist, deck, columns, handrails, prehung doors and stairs.
  6. 98-51 Aquapa WB (component A) color – Sand Drift #2633 for restrooms.
  7. 98-98 Aquapa WB (component B) Catalyst, for restrooms.
  8. 95-8000 Pitthane Ultra Gloss Urethane Enamel (component A) –tinted to Emerald Green for Accent Stripe, Canopy Columns/beams.
  9. 95-812 Pitthane Ultra Gloss Urethane Enamel (component A) – Porcelain White for exterior overhang, joist and deck, bifold doors, weld plates, columns. Garden Center & Special Order Ceilings.
  10. 95-819 Pitthane Ultra Gloss Urethane Enamel – (component B) – mix 1 gallon per 5 gallon component A.
  11. 90-330/05 Pitt-Tech Safety Yellow for roof hatch & miscellaneous.
  12. 90-377/05 Pitt-Tech Brown for warehouse stair railings and stringers
  13. 95-814 Pitthane ultra gloss urethane enamel component A – Black for 8 x 8 door and garden center steel and exterior precast.

14. 95-819 Mix 1 quart container of Pitthane Ultra gloss urethane enamel component B to 1 gallon container of component A, 95-814.
15. 97-148 Pittguard Rapid coat epoxy mastic (component A) gray
16. 97-149 Pittguard Rapid coat epoxy mastic (component B)
17. 6-151XI Supertech Dryfog Egg Shell – White deck, joists, girders in heated areas.
18. 11-54 Zone line safety yellow
19. 90-712 Pitt Tech I-E/F White Primer
20. Pittsburgh Grand Distinction Interior Satin White/Pastel base – Millwork mezzanine walls
21. 4-6200 Flex Seal – clear block sealer for masonry
22. V70-V – clear plywood sealer for mezzanine floors (2 coats minimum)

All materials required for warehouse floor, loading docks, stripes, curb lines, gate canopy, traffic markings and other exterior site work and D.O.T. specified materials are to be supplied by the contractor.

Paint subcontractor shall warranty all material supplied by Menard against failure, chipping, cracking, peeling, etc., for a period of 2 years.

Prior to painting operations, a PPG representative will be meeting with the contractor and painting subcontractor to review the product and specifications. Painting subcontractor will be required to sign off that they have been informed of the products and specifications. See sample sign off form at the end of the specifications section 09900.



One PPG Place, Pittsburgh, PA 15272

Enclosed in this packet are the Technical Data Bulletins for all Pittsburgh Paint products to be used during the coatings application process at the Menards location listed below.

**It is understood that the applicator, through acceptance of the enclosed information and the signing of this document, is aware of and will adhere to the proper use/application of the products supplied, and understands the nature and limitations of these same products.**

**It is also understood that the applicator understands the specifications provided by Menards as they pertain to the application of product to a specific area or surface, and all the necessary surface preparation required for application of primers and finish coats.**

**All materials used must be shaken or drill mixed, boxed and strained prior to application. Due to settling characteristics of the materials used, it is important that each item is shaken or drill mixed 5 to 10 minutes minimum to ensure materials contents are thoroughly distributed throughout container. All materials must be boxed to ensure uniform finish. Straining material is also recommended.**

Additional information and/or questions pertaining to surface preparation or the application of Pittsburgh Paints primers and/or topcoats can be obtained through the Pittsburgh Paints Technical Service Departments @ 1-800-441-9695.

**Menards Store Address:**

X

PPG Representative

Date

X

Paint Contractor

Date

This form should be forwarded to:

Justin Solberg  
PPG Industries, Inc.  
608 South Dewey St. Eau Claire, WI 54701  
Phone 715-760-0775  
Fax 1-715-836-7635  
[jsolberg@ppg.com](mailto:jsolberg@ppg.com)

DIVISION 10

SPECIALTIES

SECTION 10000

MISCELLANEOUS ITEMS

1. General

- A. Furnish materials as indicated and perform labor as required to complete all miscellaneous items as indicated on the drawings.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Materials

A. Toilet accessories:

1. The following shall be supplied by Menards and installed by contractor:

a) Toilet partitions

- 1. Bathroom partition system to be floor supported with head rail and continuous wall brackets where partition attaches to wall.
- 2. All panels, doors and pilasters to be constructed of a minimum of 20 gauge with two sheets of galvanized and bonderized steel. All panels, pilasters and doors to be a minimum of 1¼" thick with a baked enamel finish. Pilasters, panels and doors shall be reinforced internally and pre-pierced for the application of all fittings and hardware. Pilasters to be anchored to the floor with a minimum of 3/8" threaded rods with hex nut and washers for adjustment. Base shoes to be extruded aluminum or stainless steel. Head rail to be a minimum of 1 7/8" x 15/32" x 1/16" extruded aluminum or stainless steel with all necessary hardware and fittings.
- 3. All hardware and fittings to be heavy casting nonferrous alloy chrome plated. All hardware except coat hooks shall be through

bolted. Hinges and latching mechanism to be heavy duty quality and adjustable for proper installation.

4. Contractor to verify Menard, Inc. supplied shop drawings, specifications and color samples. (light tan/almond color to match wall paint color).
5. Contractor to provide a complete installation with all components plumb, fully adjusted and operational.
6. **Contractor to warranty the labor including adjustments for a period of two years. Menard, Inc. will provide the replacement part.**

- b) Mirrors
- c) Toilet paper holders
- d) Soap dispensers
- e) Signage for bathrooms
- f) 1 ½" O.d, Stainless steel grab bars

B. Knox Boxes:

1. Menards shall provide Knox Boxes as required by local fire authorities, contractor shall install and wire security. Contractor to confirm quantity prior to ordering.

C. Handicapped Signs and Symbols:

1. Contractor shall supply and install all handicap related signs and symbols as indicated on the drawings or as required by federal, state and/or local codes.
2. Menard, Inc. shall supply and contractors to install concrete bases and posts.

D. Miscellaneous Signs:

1. Contractor shall supply and install all signs required by local authorities having jurisdiction. This shall include, but not limited to, fire lane signs, stop signs and traffic signs.



DIVISION 11

EQUIPMENT

SECTION 11160

LOADING DOCK EQUIPMENT

1. General

- A. Furnish materials as indicated and perform labor as required to complete the work as indicated in these specifications and the drawings.
- B. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers responsibility to supply at no additional cost to Menard, Inc.

2. Materials:

- A. Menards shall supply loading dock levelers and dock bumpers. **Contractor shall install by continuous weld and bolting as indicated on the drawings. Contractor shall along with continuous weld install a minimum of 4 – expansion anchors at each bumper.**
- B. Menards shall supply dock door seals. Contractor shall install and provide any necessary mounting brackets and following manufacturers recommendations.

3. Adjust and Clean:

- A. Make necessary adjustments for safe, efficient operation of the loading dock equipment.
- B. After installation, restore marred abraded surfaces to original condition.

4. Guarantee:

- A. Contractor is responsible for maintenance and repairs to dock levelers for two years after store opening. Any parts needed to repair or maintain dock levelers will be paid for by Menards.

DIVISION 13  
GARDEN CENTER  
SECTION 13123

1. General

- A. Menards to supply trusses, purlins and gutter system.
- B. Contractor shall install the trusses, purlins, gutter system as hereinafter specified and shown on the drawings. Dimensions shown are nominal and may vary according to manufacturers standards provided the area covered is not less than that shown.
- C. General conditions that shall apply to this contract are the “General Conditions of the Contract for Construction”.

2. Scope

- A. This portion of the specifications does not cover the furnishing of the greenhouse concrete, grouting, masonry work, precast or wrought iron fencing of any description, plumbing, electrical (either power supply or control wiring), utility connections, flashing or counter-flashing. These items shall be the responsibility of the General Contractor.

3. Plans and Submittals

- A. Menards will supply a complete set of shop drawings including details prepared by the greenhouse manufacturer. Submittals shall also include structural calculations and date on materials supplied. Submittals shall meet structural requirements of applicable local or state building codes for building permits, except concrete and foundation design shall be by others. Plans and calculations shall be designed and sealed by a licensed engineer in the state of installation.

4. Erection of Greenhouse

- A. The greenhouse shall be erected by the contractor. The contractor shall have at least five years experience in building greenhouses of the type specified. The contractor shall have all site conditions corrected and ready prior to greenhouse erection.

5. Standard of Quality

- A. All structures shall be designed to requirements of state/local building codes.
- B. Greenhouse structure(s) shall be designed in accordance with current AISI Specifications for Design of Cold – Formed Steel Structural Members and AISC

Specifications for Structural Steel Buildings. Greenhouse structure(s) shall include sufficient bracing for the resistance to wind forces. Bottom chord members as well as other truss members shall be adequate to resist compressive loads produced by horizontal wind loads and roof uplift produced by wind.

6. Materials and Components

- A. Structures shall be designed and detailed according to accepted engineering practice. Framing shall consist of trusses, hot dip galvanized after fabrication, 4'-0" centers spanning the full width of the structure with a 6/12 roof pitch. No castings, either of aluminum or aluminum alloy, shall be permitted for joining structural members at joints subject to stress in which tensile strength is a factor.
- B. Primary framing shall be 50,000 P.S.I. yield strength steel.
  - a) Trusses shall be 2" square steel tube (or heavier) with welded plate connections and hot dip galvanized after fabrication. Trusses shall ship from factory assembled in no more than two pieces ready to attach at the post connection. All tolerances shall be held to an absolute minimum in order to secure proper fit of the steel members.
  - b) Truss support posts and beams will be as indicated on the drawings and will be installed by others. Aluminum cast or aluminum alloy connectors are not acceptable.
  - c) Trusses shall be connected to the side wall post by a welded post top connector hot dip galvanized after fabrication.
  - d) Galvanized steel roof purlins, of size required, shall be prefabricated before shipment from greenhouse manufacturer and shall utilize a bolted connection.
  - e) Provide all other structural members required to complete the frame work of the greenhouse that are not mentioned above such as: bracing, clips, lugs, girts, and fasteners.
- C. Secondary framing shall be extruded aluminum, hot dipped or galvanized steel, members such as roof bars, ridge, sash, etc. Members shall be mill finish, with appropriate heat treatment of alloy 6063-T6 or 6060-T5. Sheet aluminum shall be of alloy 3003-h14.

7. Fasteners

- A. All structural connections shall be attached with hot dip galvanized (ASTM-307 bolts) or stainless steel fasteners. All aluminum to aluminum connections shall have aluminum or stainless steel fasteners. All screws and self-tapping screws shall be stainless steel or hot dip galvanized.

8. Gutters

- A. Gutters shall be 12 gauge steel fabricated for connection at the post tops, and also to accept roof and side wall glazing closures. Gutters shall be hot dip galvanized after fabrication. Outlet tube(s) shall be provided where indicated on the drawings.

9. Flashing

- A. All flashing and counter-flashing shall be supplied by Menard, Inc. and placed by the contractor.

DIVISION 15

MECHANICAL

SECTION 15200

FIRE PROTECTION SPRINKLER SYSTEMS

1. General

- A. The fire protection sprinkler systems shall be supplied and installed by others. General contractor shall receive and unload materials and provide coordination of installation, inspections and testing.
- B. The fire sprinkler contractor will provide all labor, materials and design services necessary for the complete, lawful and operating system. The entire facility shall be sprinklered as required by all state and local codes. They will remove all debris, waste, etc. from all fire sprinkler operations.
- C. This subcontractor shall provide all engineering, design and plans required for all requirements of state and local codes and permits. The system shall be designed to allow 24' high rack storage of Class III commodities with some Class IV, Type A and B plastics without installing heads within the racking system. System shall be able to comply with requirements regarding aerosol spray paint, limited quantities of Class I and II flammable liquids and polystyrene – verify quantities with representative.
- D. This subcontractor has checked with the authority having jurisdiction and is knowledgeable of the applicable codes and will provide a sprinkler system that can accommodate the type of materials and storage heights required for the Menard, Inc. operation.
- E. **The overhead system shall be designed to allow the storage heights and material quantities so that in rack sprinkler heads will not be required.**
- F. The fire suppression subcontractor recognizes that this is a design as well as installation contract, and that there will not be any change orders to bring the system to code or requirements by the authority having jurisdiction.
- G. General contractor will not look to Menard, Inc. for delays in the fire sprinkler installation.

2. Design and Installation

- A. This section of the work shall require the complete furnishing and installation of an automatic fire protection sprinkler system throughout, including the complete design drawings and engineering required to be in accordance with all state, local and

applicable codes. This subcontractor is to furnish and install all valves, automatic equipment, sprinkler heads, correct piping sizes, headers, hangers and complete installation of the systems. Brass sprinkler heads shall be furnished for all areas requiring sprinklers except for areas receiving acoustical tile ceilings where chrome heads and removable rings shall be installed. Temperature design requirements for fusible links on sprinkler heads shall be the responsibility of this subcontractor. Subcontractor to verify type of materials and storage heights and incorporate into the design of the fire protection system. Subcontractor responsible for system design with respect to local water pressure. Contractor to submit shop drawings within four weeks from the date listed on the general construction contract.

- B. This subcontractor is cautioned to route all header piping, branch piping and all other required piping for the sprinkler system within or above the truss system as high and as much out of the way as possible. Installation of the sprinkler piping and heads shall be coordinated with the electrical and mechanical trades prior to construction. IF CONTRACTOR LOCATES ANY PIPING IN THE WAY OF ANY OF MENARD, INC. DISPLAYS, CONTRACTOR WILL BE REQUIRED TO RELOCATE AT HIS EXPENSE. Drum drips or inspectors tests will not be permitted in any unheated areas.
- C. **This subcontractor is to supply and install flow, tamper and low air pressure switches so that they can be hooked up to fire alarm for the store and warehouse.**
- D. **The subcontractor to supply and install alarm bells as required by code.** At a minimum, the sprinkler contractor shall install one bell above the sprinkler room door at the warehouse and a bell above the sprinkler room door at the main store sprinkler room.
- E. This subcontractor shall include galvanized piping for all main and branch piping the warehouse.
- F. The air compressors for the dry system to be a 2 stage cast iron compressor pump with a minimum of a 60 gallon tank complete with starter, manufacturer to be Industrial Air and/or Sanborn. The compression must comply with NFPA13 and must be able to fill the largest dry system in 30 minutes or less. Menard, Inc. to supply compressors as required for the systems. Confirmation of the size, style, etc. will be needed and will be required from the sprinkler contractor prior to ordering.

3. As Built Drawings

- A. This subcontractor shall furnish drawings for the Owner's use at job completion on a CD Rom PDF Document. Supply 'Field Use' drawings via E-mail and CD.

4. Shop Drawings

- A. This subcontractor shall submit shop drawings to Menard, Inc., and general contractor for review. This subcontractor is solely responsible for the correctness of the shop drawings.
- 5. System Monitoring
  - A. Sprinkler system monitoring will be by others. Alarm hook-up and programming shall be by General Contractor. This contractor shall assist in the coordination of installation with owner and others.
- 6. Identification
  - A. All controls, piping, valve and equipment shall be labeled for functions and service in accordance with NFPA and all applicable codes.
- 7. Tests and Adjustments
  - A. Unless otherwise directed, test shall be witnessed by an inspector of the authority having jurisdiction. Work to be concealed shall not be enclosed until prescribed tests are made. Should any work be enclosed before such tests, the contractor shall, at their expense, uncover, test and repair their work and that of other contractors to its original condition. Leaks and defects shown by tests shall be repaired and the entire work retested. Tests shall be in accordance with NFPA and all applicable codes.
  - B. **The first year's annual inspection of the system is to be included in this contract.**
- 8. Certification
  - A. At completion of the project and prior to fixturing, a certificate of inspection from authorities having jurisdiction indicating installation and testing was in accordance with referenced standards shall be delivered to Menards
- 9. Training
  - A. Provide complete training to the store management on the proper operation of the system, required maintenance, etc. Have manager sign the sign off sheet for training.

## SECTION 15400

### PLUMBING

- 1. General
  - A. Contractor shall include all labor, materials, services, equipment, transportation, engineering, etc., necessary for the complete installation of all materials specified and shown on the drawings for the plumbing work.

- B. **Guarantee. It is understood that all contractors and subcontractors shall guarantee their work to be free from defects in materials and workmanship for two years beyond the completion of the project. All materials and equipment shall be new and shall purchase all materials under contract at a Menard, Inc. retail store – provide proof of purchase.**
- C. Contractor shall comply with all local, county, state and federal codes, ordinances, rules and regulations.
- D. Contractor shall obtain all permits, inspections, etc., required by code and furnish a certificate of approval from the inspection authority at completion. Contractor shall pay for all permits, meters, meter installations and fees relating to his work, unless noted otherwise. **Contractor to obtain plan approval, this may require preparing additional drawings as required.**
- E. The drawings are in general diagrammatic. The system shall be laid out by the contractor as a design and install system. Contractor shall provide all engineering design and plans required for all requirements of state and local codes and permits.
- F. Contractor shall provide temporary water supply for construction and tests.
- G. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers' responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers' responsibility to supply at no additional cost to Menard, Inc.

2. Sewer and Water Systems

- A. Contractor shall furnish and install the complete building water supply system, building drain, waste, vent system, including the complete installation of all fixtures including, but not limited to:
  - 1. Water closets, lavatories, urinals, floor drains, water coolers, slop sink, frost-proof water faucets, water heater and any other items shown on the drawings or necessary for proper facility (see plumbing schedule).
- B. Soil, water and vent piping shall be polyvinyl chloride (PVC), and ductile, iron or cast iron connections for all gas using equipment.
- C. Water piping shall be type "M" hard temper copper tubing, with wrought copper fittings for solder joints, or as allowed by code and approvals by Menard, Inc.



- D. Above ground gas piping shall be schedule 40 black steel with screwed malleable iron fittings.
- E. Contractor shall perform all excavation and backfill work, including proper compaction of the backfill.
- F. All water lines shall be sterilized and flushed prior to being placed into domestic service.
- G. **Contractor shall furnish to Menard, Inc., upon completion of work, a complete manual of instructions and guarantees, for equipment furnished and installed, including maintenance instructions and parts lists complete with labels and addresses of local suppliers.**
- H. **Contractor shall provide to Menard Inc. a set of as-built drawings detailing the plumbing and drainage system layouts on a CD Rom PDF Document.**
- I. Contractor to provide all necessary testing as required for the system.
- J. Contractor to provide initial training of all systems, including a written procedure for winterization and spring start-up procedures to properly run the systems.

### 3. Plumbing Schedule

- A. The following shall be supplied by Menard, Inc. and installed by contractor (contractor shall verify all quantities on drawings):
  - 1. (1) 240 volt water heater.
  - 2. Drinking fountains. Contractor shall verify quantity on drawings.
  - 3. Wall mounted urinals. Contractor to verify quantities on drawings. Contractor to supply strainers for urinals.
  - 4. Standard elongated water closets. Contractor to verify quantities on drawings.
  - 5. Handicapped water closets. Contractor to verify quantities on drawings.
  - 6. Lavatories. Contractor to verify quantities on drawings.
  - 7. Faucets - only. Contractor to verify quantities on drawings. Contractor to supply strainers.
  - 8. (1) floor mounted mop service basin with faucet, hose and hose bracket and mop hanger.
  - 9. Boiler system for radiant in-floor heat, including tubing, connectors, gas pipe etc. to complete installation.
  - 10. Floor drains and clean outs
  - 11. Recessed wall hydrants
  - 12. Water closet and urinal flush valves

- B. All other fixtures and piping and all other equipment shall be supplied and installed by contractor and are to be purchased at a Menard, Inc. retail store – provide proof of purchase and submit with billing.

4. Training

- A. Provide complete training to the store management on the proper operation of the system.

SECTION 15500

HEATING, VENTILATING AND AIR CONDITIONING

1. General

- A. Menards will supply the following HVAC equipment:
  - 1. 25 ton rooftop units.
  - 2. Gas fire unit heaters.
  - 3. All controls and control wiring (Contractor to install and program).
  - 4. Roof mounted exhaust fans for restrooms and electrical rooms.
  - 5. All ducting associated with the installation of the HVAC equipment.
  - 6. Gas piping (gas piping for generator to be supplied by contractor).
  - 7. Energy Management System (Contractor to install, wire and program).
- B. Contractor to provide all openings in the roof deck for the HVAC equipment.
- C. Contractor to assist scheduling HVAC equipment installation.
- D. Contractor to provide permanent power to all HVAC equipment as per code.
- E. Temperature control wiring, thermostats and energy management system installed by contractor.
- F. Contractor to verify quantities on drawings.
- G. Contractor to paint gas piping whether inside or outside. Paint pipe white to match ceiling on inside. Verify if pipe must be painted on the roof and paint as directed at no additional cost to Menard, Inc.

SECTION 15775

IN-FLOOR RADIANT HEAT SYSTEM

1. General

- A. Menard, Inc. to provide the boiler and manifold system pre-piped to the job site with controls. Contractor to set boiler and pipe/wire as required.
- B. Contractor to install and provide all labor and other materials, equipment, transportation, engineering, sand and sand placement for a complete system.
- C. The drawings are in general diagrammatic. The system shall be designed and supplied by Menard, Inc. Contractor shall provide labor to install insulation, under floor piping, final connections to boiler, mount boiler and all associated wiring for complete installation.
- D. Guarantee. Contractor to guarantee their installation, material (including materials supplied by Menard, Inc.) and labor for a period of 2 years.
- E. Materials:
  - 1. Boiler manifold, controls, tubing and miscellaneous connectors will be supplied by Menard, Inc. installed by contractor.
  - 2. All other materials to be supplied by the contractor and purchased at a Menard, Inc. retail store.
  - 3. All piping to be Dura-Pex radiant floor piping or equal and as allowed by code supplied by Menard, Inc.
  - 4. Radiant heat control panel and manifold as manufactured by CPI supplied by Menard, Inc.
  - 5. All valves, fittings, connectors by CPI or equal supplied by Menard, Inc.
  - 6. Back flow preventer as required by code, supplied and installed by contractor.
  - 7. Expansion tank and temporary tank will be supplied by Menard, Inc.
  - 8. Complete controls to thermostatic control each zone with manual over-ride will be supplied by Menard, Inc. on pre-packaged unit installed by contractor.
  - 9. Glycol will be supplied by Menard, Inc.
- F. Submittals:
  - 1. Provide a complete set of shop drawings for review to Menard, Inc. include location and sizes of all components.
- G. Design Requirements:
  - 1. Exterior sidewalk – provide sufficient heat to melt snow from sidewalks designated on plans. System shall be capable of melting 1” of snow per hour.
  - 2. Exterior system to be Glycol based system capable of withstanding temperatures of -50°F without freeze up. The Glycol system to be separated from domestic and city water supply as required by applicable codes.
  - 3. Exterior system to have a manual by-pass switch for turning on or off.

4. Interior system – provide sufficient heat to rooms designed on plan to maintain 85°F.
5. Interior system to be thermostatically controlled for each zone. Thermostats to be 7 day programmable thermostats with a night set back feature and will be supplied by Menard, Inc.
6. Installation:
  - a) Follow all manufactures requirements for a complete and proper installation. Install pipes in an evenly spaced arrangement without crossing. Place piping in sand bed above rigid insulation. Do not allow piping to be cast into concrete. Keep debris out of open ends of pipe cap ends of pipe if necessary.
  - b) Provide manpower during concrete pours to assure that the piping is not damaged or compromised.
  - c) Install boiler, controls, and circulation pumps that are pre-assembled and supplied by Menard, Inc. in a neat orderly manner as designated on plans. Provide shop drawings to assure equipment fits in designated area with proper clearances. System must not infringe on storage shelving area.
7. Testing. Pressure test system at 100 psi for 24 hours prior to pouring concrete. Pressure test system after concrete pour at 100 psi for 24 hours after pour. Provide results of both tests to owner. Repair all leaks. If freezing is a possibility, make sure water is blown from system.
8. Set boiler at 160°F maximum temperature.

#### H. Final Inspection and Training

1. Complete a final inspection and testing of system, provide complete training to store management. Install easy to understand laminated operation instructions at the boiler and in each operation manual.

## DIVISION 16

### ELECTRICAL

#### SECTION 16010

#### GENERAL REQUIREMENTS

##### 1. General

- A. It is the responsibility of the contractor to obtain and thoroughly review all construction drawings and specifications that pertain to this project. Where requirements for electrical construction exist in other drawings and specifications, the contractor shall include these in the bid.
- B. The contractor shall furnish and install all material, labor and equipment necessary for a complete and operable electrical system. **All materials supplied by contractor shall be purchased through a Menards retail outlet, proof of purchase to be submitted with pay request.**
- C. The electrical drawings which constitute an integral part of this contract are schematic, and they are intended to indicate a general layout of the electrical system. The actual field conditions of construction, including the work of the other trades involved in the construction will dictate the exact methods and materials to be used. The contractor is responsible to adequately review the plans and work of the other trades to assure that the work is properly coordinated with others.
- D. The bid documents include a complete material list of materials supplied by Menard, Inc. for the building, warehouse, gate canopy, site, etc. It is the general contractors, subcontractors and material suppliers' responsibility to verify the material list in conjunction with plans and specifications. Menard, Inc. will be supplying only what is on the material list in regards to type of material and quantity. Any and all materials above and beyond what is documented in the materials list will be the general contractors, subcontractors and material suppliers' responsibility to supply at no additional cost to Menard, Inc.

##### 2. Codes, Standards and Permits

- A. The construction of the electrical system shall be in accordance with all applicable codes and standards of governing agencies. As a minimum, construction shall comply with the current adopted edition of the National Electrical Code. In addition, the contractor shall inquire with the Building Department if there are any other codes, revisions or adaptation that the agency has in force and shall comply with those as well. If there is a conflict in codes, the more restrictive shall apply. Contractor to obtain plan approval, this may require preparing detailed electrical drawings as required.

- B. The contractor shall obtain and pay for all permits and inspections that are required for completion of the construction.
- C. The contractor is responsible to secure all inspections required by the governing agency and will be held responsible for any work that is not acceptable.

3. Workmanship

- A. The contractor shall be responsible to use experienced workmen who are fully familiar with proper installation techniques and with the manufacturers' recommendations relative to the products that are used. As a minimum standard, these workmen shall be equivalent to capability to that of a licensed electrician. The contractor shall be fully responsible for the work methods and safety of these workmen. In the acceptance or rejection of the finished installation, no allowances will be made for the lack of skill on behalf of the workmen.

4. Schedule of Work

- A. The contractor shall be responsible for the scheduling of his work to enable the required completion date and also coordinate such as not to disturb the schedule of other contractors working on the project.

5. As-Built Drawings

- A. During the progress of the work, the Contractor shall maintain an accurate record of the installation of the system on "As-Built" drawings which will be submitted at the completion of the construction. All entries of these drawings are to be neat and orderly and the final submittal is to be in a electronic format on a CD Rom PDF Document.

6. Cleaning

- A. All exposed parts of electrical equipment shall be completely and thoroughly cleaned and free from cement, plaster, paint, etc. All scratches are to be refinished in an acceptable manner.
- B. When hanging high bay light fixtures care must be taken to avoid "finger printing" the lenses. Wearing gloves is required.

7. Warranty and Guarantee

- A. **The Contractor shall leave the entire electrical system in proper working order and shall, at his expense, replace any work, materials or equipment which develops defects within two (2) years from the date of acceptance of the work. This warranty shall also cover labor**

**to replace defective products supplied by Menards, including ballasts, breakers, and contactors for a period of two years.**

8. Utility Company Services

- A. The Contractor shall coordinate temporary construction power with the serving utility. All costs associated with installation of temporary power are to be included in the bid.
- B. The voltage, phase and capacity of the electrical service shall be as shown on the Drawings. Other information shown on the Drawings relative to utility company requirements is preliminary and subject to change by the utility company. The Contractor is fully responsible for the use of any information that is not in the form of a final construction drawing issued by the utility company for final use on the project. Prior to the bid of the project, the Contractor shall coordinate with the serving utility and determine exact material and equipment that will be required by the utility company in order for them to complete their installation of final services. This cost shall be included in the bid. If this information is not available to the Contractor prior to the bid, then the Contractor shall estimate what these costs will be and include these estimates in the bid. Under no circumstances will the Contractor be relieved from his obligation to provide for the utility company requirements whether or not they are shown on the Drawings. Furthermore, the Contractor shall not be eligible for any additional charges to Menards relative to utility company requirements and fees.

9. Products and Materials

- A. All products and materials used in the project shall be new and deliveries to the job site in the original packaging. Provide proof of purchase from a Menards store.
- B. All materials used and furnished for which UL Standards have been established shall be listed by and bear the label of Underwriter's Laboratories, Inc.
- C. The Contractor shall submit manufacturers catalog sheets and/or shop drawings to Menards for approval. This requirement prevails whether or not the drawings indicate the equipment by specific manufacturer and part number.

10. Testing

- A. **Control systems for outdoor lighting, indoor lighting, master controls for lighting systems and emergency power systems (whether integral in fixtures, by inverter/battery sets, and/or generators) shall be thoroughly tested during installation, and these systems shall be tested**

**at the completion of construction in the presence of the Owner, project manager and store management.**

- B. It is the responsibility of the Contractor to assure the integrity of the grounding system throughout the project and it is mandatory that the entire system be thoroughly tested. It is also mandatory that the main electrical service ground bus be tested by a licensed electrician utilizing methods and equipment that are considered acceptable by members of the trade. A written record of this testing shall be made by the Contractor indicating the time and date of the test, the name of the person conducting the test, the equipment and method used, and this record shall be kept by the Contractor and made available to Menards upon request for a period of two (2) years following completion of the construction.
- C. The Contractor shall be responsible to coordinate testing of the main service utilization voltage. In the case of 208Y/120 volt systems the voltage shall test at 117 volts +/- 3 volts on each phase to neutral. In the case of 480Y/277 volt systems the voltage shall test at 270 volts +/- 7 volts on each phase to neutral.

This testing shall be conducted with a main service load of 25% by turning "on" lighting and air condition equipment during the test. The actual voltages of each phase after adjusting and as determined in three (3) separate tests shall be recorded and reported to the Engineer in written form.

- D. In the case of 208Y/120 volt services where the main disconnect exceeds 2000 amps or 480Y/277 volt services where the main disconnect exceeds 1000 amps the voltage testing shall be conducted with a recording voltmeter indicating a 24 hour record of the actual voltages on all phases during the first 24 hour period that the facility is in operation. The Contractor shall coordinate the time and date of this requirement with Menards and submit the results of the testing to Menards. This testing shall verify utilization voltages as indicated in "C" above.
- E. In the case of sub-distribution transformers, the Contractor shall be responsible to assure proper secondary voltage with the same testing techniques described in "C" above.



## SECTION 16100

### BASIC MATERIALS AND METHODS

#### 1. Quality Assurance

- A. The contractor is responsible to assure that all materials and equipment delivered to the job site are new and in proper usable condition. All material and products used are to be inspected by the workmen and rejected if found to be defective or flawed. It shall be the responsibility of the contractor to assure that this element of the specifications is satisfactorily completed, however, the owner, architect or engineer reserve the right to reject any materials or equipment that they discern to be flawed or defective in the finished project. All materials supplied under this section shall be purchased through a Menards store. Provide proof of purchase to Menard project manager.
- B. Contractor is required to verify all floor box locations prior to the floor pours commencing. Prior to the floor pours, documenting locations via GPS or survey is recommended. The use of plastics whips is acceptable as long as they are centered on they floor box locations and no longer than 2” AFF. No scarring (whip tracks) is allowed outside the area of the floor box, on the concrete floor surface. The use of measuring and hammering on the floor to locate the floor boxes is not acceptable. When exposing the floor boxes, straight, clean saw cuts are required. The use of hammer drill, jack hammer or chisel is not acceptable. Saw cuts shall be no larger than ¼” outside of the box. No visible cuts or chips in concrete are allowed to be visible once trim plates are installed. Where saw cuts or chips are evident outside the trim plate a fee of \$500 per box will be assessed, unless the contractor can patch areas to match adjacent concrete perfectly.

#### 2. Product and Equipment Verification

- A. The contractor shall be responsible to check all products and equipment that is specified in the drawings when it is received at the job site to assure that it is in fact compatible with the electrical plans based upon the enclosed manufacturers’ instruction and any instruction or information placed on the products and equipment.
- B. In the case of service and distribution equipment, the contractor shall verify that the nameplates agree with the approved shop drawings relative to voltage, phase, bus capacity, short circuit and/or AIC rating and enclosure type.
- C. In the case of sub-distribution transformers, the contractor shall verify that the nameplates agree with the specified voltage to voltage rating, impedance, heat rise, enclosure type and sound rating.

- D. In the case of light fixtures, the contractor shall verify the fixture is rated for the specified lamp, the specified input voltage, the specified mounting and/or installation application, and the specified control system.
- E. In the case of motors, the contractor shall verify the proper input voltage and phase, FLA, recommended fuse size and installation application, based upon the attached nameplate.

3. Conduit

- A. All conductors and wiring are to be installed in conduit unless the drawings clearly state that conduit is not required and that the use of an approved cable is permitted. In all finished areas these conduits are to be concealed. The conduits shall be continuous terminating only in junction boxes, panels, approved wire ways, etc. Where metallic conduits establish grounds, these conduit runs shall be installed such that they maintain continuity.
- B. Where nonmetallic conduit is used in construction, the contractor shall include a ground conductor in the run whether or not shown on the drawings and the conduit shall be sized accordingly.
- C. Rigid nonmetallic conduit (RNMCM) may only be used underground or in or below concrete slabs when used for conductors of 110 volts or higher. Conduits shall be polyvinyl chloride Schedule 40, electrical conduit, rated 90 degrees C. Only approved electrical footings may be used. Where run in concrete maintain a minimum of 4" of cover on all sides, and convert to rigid galvanized steel to stud out of concrete. The curbed portion of sweeps and "ells" shall be fully embedded within the concrete. Any conduit and fittings installed for the use of a utility company shall meet the requirement of the utility company for such installations except that in the case of conduit for high voltage feeders (600 volts or above), the contractor shall take special precaution to provide safety to persons excavating around and about the installation. It is the responsibility of the contractor to provide for this protection but it is recommended that one or more of the following methods be utilized: concrete encasement of at least two inches of concrete on all sides of the conduit; installation of concrete or concrete slurry three or more inches deep on top of conduit; installation of three or more inches of sand on top of conduit and redwood planks run continuously on sand; installation of a warning tape manufactured for direct burial placed six inches above the conduits.
- D. Steel rigid metal conduit (RMC) shall be mild steel, hot dipped galvanized inside and outside, and all couplings and connectors shall be tapered pipe thread. Running threads and split couplings are not permitted. When used underground the conduit and fittings and couplings shall be moisture protected. "Tape coat CT" protective spiral wrap with recommended primer treatment.

- E. Electrical Metallic Tubing (EMT) shall be mild steel, electrically welded and galvanized per ANSI #C80.3. In damp locations, fittings shall be gland compression type malleable iron. In dry locations, fittings shall be all steel, zinc plated, screw set type.
- F. Flexible Metal Conduit (FMC) shall be steel or aluminum with UL listing. Fittings shall be steel or malleable iron threaded.

4. Pull and Junction Boxes

- A. Boxes are to be installed in all conduit runs in sufficient number to meet the requirements of codes, special requirements of utility companies, requirements of providers of special equipment and systems, and to allow for efficient and convenient installation of conductors. It is the responsibility of the contractor to locate these boxes and size them according to code requirements. Boxes shown on the drawings are to be installed as shown but do not necessarily indicate all boxes necessary for any installation. Boxes installed in outdoor or wet locations shall be of the type approved for the purpose.
- B. Boxes installed indoors shall be code gauge steel, galvanized on all surfaces, with removable covers secured with machine screws. They shall be adequately supported by mechanical connection to the structure of the building. They are to be located such that they are readily accessible for maintenance purposes. All junction boxes in branch circuits shall be marked on the cover with the circuit identifications. Boxes used in runs for primary feeders of panels, transformers, switchboards and other distribution equipment shall indicate the origination source and destination on the cover (i.e., "MSB to P10") and these boxes shall not be shared for sub feeds to more than one of the above types of equipment.
- C. Boxes where exposed to the weather shall be weatherproof and rain tight and shall be fabricated of minimum 14 gauge sheet steel and hot-dip galvanized after fabrication. Covers are to be properly gasket and set with stainless steel screws. Covers are to be stainless steel or brass. Visible covers are to be left with a clean factory finish.
- D. Where boxes are located outdoors in landscape or traffic areas, they shall be precast concrete as manufactured by Brooks or Quickset. The covers of these boxes shall be appropriate to their specific locations. For boxes used in the utility site system the covers shall be marked Electric, Telephone or CAT as appropriate. Concrete boxes shall be installed on a 6" crushed rock base. The contractor shall coordinate the finished elevation with the specific conditions of the installation. In general the contractor shall attempt to locate boxes such that they are as visually unobtrusive as possible.
- E. Where boxes are located in wet areas, the contractor shall install the conduits into the boxes such that they are protected from intrusion of

water. Furthermore, if there is a possibility that water can enter buildings or equipment by entering into conduits owing to grades and elevations, the contractor shall make the engineer aware of this field condition prior to completion of their installation so as to allow the engineer to designate corrective, protective measures.

- F. Contractor must take care to mount 'J' Boxes in locations, that will not interfere with store operations, and potentially get damaged. (IE: In perimeter pallet rack, etc.) If any electrical is located in such areas, the contractor will be required to relocate as acceptable to Menard Inc.

5. Outlet Boxes

- A. Outlet boxes shall be installed with extensions and rings properly coordinated for the surrounding finishes. The final installations shall render all outlet boxes flush and even with the finished surface. In all cases these boxes shall have a finished appearance acceptable to Menards
- B. The minimum size for outlet boxes is 4" square by 1.5" deep.
- C. Where outlet boxes contain wiring of different voltages, the contractor shall provide approved barriers within the boxes. Where switches are shown adjacent to one another on the drawings, these switches are to be installed in multiple ganged boxes and the finish rings are to be coordinated with standard available cover plates. An exception is where dimmers are shown they will be provided with their own cover plates and/or heat sinks. In this event these will be located in separate outlet boxes of appropriate size such that the finished centerline of adjacent cover plates is symmetrical about a horizontal common axis.
- D. In the event that outlet boxes are to be used to support fixtures, the contractor is responsible to install boxes with adequate structural integrity to allow for the support of the fixture.
- E. All cover plates to be stainless steel or aluminum and supplied by contractor.

6. Conductors

- A. The contractor shall be responsible to install all conductors used on the project in compliance with NEC. In the event that the contractor receives approval from the inspector to utilize insulation types other than those shown on the drawings, he shall pay particular attention to insure that these conductors are properly sized.
- B. Conductors used as service entrance conductors, to sub feed switchboards, panels, transformers and other equipment, where the wire sizes are #6 and larger shall be installed with the wire size, insulation class and voltage rating indications on the insulation visible without touching the conductors from the front of the connections.

- C. Where conductors of multiple phases are pulled through the same conduit to feed more than one equipment, they shall be color coded. These colors shall be permanent and consistent for the entire run. The choice of colors is the option of the contractor except that grounds shall be green and neutrals shall be white.
- D. The contractor may gather runs of conductors based on field decisions, but shall comply with all applicable code requirements.
- E. Conductors #10 AWG and smaller shall be stranded. Conductors #8 AWG and larger shall be stranded. The minimum wire size to be used is #12 AWG. The minimum insulation rating shall be 600 volts.
- F. In no event may aluminum conductors without prior written approval from Menards be used. Where the drawings indicate the use of copper conductors, then only copper conductors may be used. In cases where the contractor utilizes aluminum conductors, the contractor shall be responsible to install these conductors such that he guarantees the same quality of the system as if he had installed copper conductors. All conductors used in fixture troughs, shall be insulation type THHN.

7. Connectors

- A. Copper conductors for wire sizes #10 AWG and smaller shall be spliced utilizing “spring-lock” connectors, in particular, “Scotchlock” by 3M or “Wing Nuts” by Ideal. The contractor is responsible to assure that all splices are completed in a secure and permanent fashion, maintaining the integrity of the connection without faults or shorts. In cases where the conductors may be affected by adverse conditions, the contractor shall take special precaution to protect the conductors such as by wrapping connectors with an appropriate tape.
- B. Copper conductors for wire size #8 AWG and larger shall be made with approved split bolt connectors. These types of uninsulated connections shall be thoroughly protected with applied insulation such as “E-Z Seal” #2200 vinyl insulating pads.
- C. Aluminum conductors when used shall employ as few splices as possible. This means that the contractor shall be responsible to show suitable reason for any splices within a run. The location of these splices as installed by the contractor shall be indicated in the “As-Built” drawings. Aluminum conductors shall be terminated or spliced with swage type aluminum compression terminals, and shall be accomplished in strict adherence with the instructions of the manufacturer of the material. Connections shall be protected as indicated in “B” above.
- D. Connections made in outdoor locations shall be insulated with “E-Z Seal” #2200 vinyl insulating pads to protect from moisture.

8. Trenching/Excavation

- A. Where specifications appear in the architectural portion of the specifications that pertain to trenching and backfilling, the contractor is responsible to review these specifications and comply. In the absence of other specifications, the contractor shall:
1. Comply with NEC relative to the minimum depths of conduits, and shall comply with any utility company requirements relative to these depths. Conduits outside of building shall be a minimum of 42" below finish grade.
  2. Maintain a minimum of 12 inches separation between: 0-600 volt feeders; and over 600 volt feeders; and low voltage (telephone, alarm, communications, CAT5, other Class 2 conductors, etc.); and non-electrical installations (water, gas drains, sewer, etc.). This condition shall apply to joint trench situations and to conditions where trenches cross.
  3. Each layer of backfill shall be compacted to a 95% standard density and the top 6" shall be compacted to 98% maximum density. **It is the responsibility of the contractor to provide verification that this condition is accomplished.** Trench backfill to be CA-6 stone or pea gravel. Remove excess spoils left from trench excavation.
  4. **Upon completion of backfill and compacting, the contractor shall leave the site in the same condition that it was at the commencement of the work.** This requirement includes replacement of any damaged landscape material, asphalt, concrete, other pavements and finish materials, fences, lawns, trees, etc. Additionally, the contractor shall be responsible for any damage to other installations such as sprinkler lines, and the like. If the contractor feels that damage to other installations is unavoidable, then it is his responsibility to bring this to the attention of the engineer prior to any specific work to allow the engineer to designate corrective procedures.
  5. Upon completion of the trenching and backfill, the contractor is responsible to remove any excess dirt, rock and other debris from the job site.

SECTION 16300

SERVICE AND DISTRIBUTION EQUIPMENT

1. Equipment

- A. Menards will supply service and distribution equipment indicated on the plans and material list. Contractor shall verify what equipment is supplied by Menards
- B. The contractor shall be responsible to coordinate with the electric utility to provide equipment that is satisfactory for their requirements. Contractor to supply and install conduit, metal panel, transformer pad, CT cabinet, etc. per electric utility requirements.

2. Quality Assurance

- A. All service and distribution equipment shall be approved by a testing laboratory recognized by the code enforcing authority and bear the approval label of that laboratory with a permanently mounted and engraved placard. Additionally, all service and distribution equipment shall have permanently placed on it a permanently engraved placard nameplate indicating the name of the manufacturer, the manufacturer's serial number, the voltage, phase and capacity of the specific equipment.

3. Main Service Equipment

- A. Shall be supplied by Menards as indicated on the Drawings and material list. The main service equipment shall be a freestanding, deadfront, deadrear, sheetmetal assembly with factory applied paint finish. The contractor is responsible to verify size of pull section, and other utility requirements, with the serving utility and provide the required equipment. The equipment will utilize circuit breakers.

4. Panelboards & Loadcenters

- A. Shall be supplied by Menards. All panels used on a particular job shall be of the same manufacturer. If there is no indication as to the number of spaces that is to be provided on the panel, then it shall be a full size 42 space panel. Circuit breakers shall be full size breakers, tandem type breakers are not to be used. All panels shall bear the label of a code enforcing authority approved test laboratory, and shall have affixed by the manufacturer a permanently engraved and attached nameplate indicating the panel rating. Additionally, there shall be affixed to the panel a phenolic engraved nameplate indicating the panel name and voltage/phase (i.e., "P1-208/120V-3PH"). A typewritten circuit schedule shall be prepared and mounted in a plastic cover in the panel.
- B. Circuit breakers will be supplied by Menards and shall be molded case with trip indicator, and interrupting rating shall equal the rating of the load center or panel.
- C. Twenty-five percent (25%) spare circuit breakers shall be provided in each lighting and power distribution cabinet.

5. Equipment Installation

- A. In all cases the contractor shall install service and distribution equipment in such a manner that the equipment is reasonably protected from adverse conditions and damage. Main service equipment shall be installed on a concrete pad at least four inches thick. All main service equipment shall be bolted to the pad on which it is located.

6. Grounding

- A. The main service ground bus shall be grounded in compliance with the requirements of the code enforcing authority and by the following methods:
  - 1. Metallic cold water pipe: 250-81(a).
  - 2. 20 feet of #4 bare copper wire: 250-81(c).
  - 3. If metal frame building to the structural frame: 250-81(b).
- B. The resistance measured from the main service neutral bus to the ground shall not exceed 25 ohms as measured with dry ground conditions.
- C. The secondary side of transformers shall be grounded per Section 250-26.
- D. Non metallic conduits shall contain a ground conductor per 250-95.
- E. Flexible metal conduits shall contain a ground conductor equal in size to the largest conductor within.



## SECTION 16400

### SCOPE OF WORK AND SCHEDULE

#### 1. General

- A. Furnish all design, labor and material to complete all electrical work shown on the drawings, specified herein or required to complete the construction of the building as shown.
- B. The listing herein of article or material, operation or method, requires that the contractor shall provide and install, unless noted to be supplied by others, each item listed of quality or subject to qualification noted. Each operation shall be performed according to standard practice, manufacturer's instructions and conditions stated, provided, therefore, all necessary labor, equipment and incidentals.
- C. The electrical contractor shall schedule his work to conform to the progress of the other trades and contractors employed on this project. The electrician's principal items of work include, but are not limited to, the following:
  - 1. Complete electrical service entrance including conduits, ducts, cables and wiring supplied by contractor.
  - 2. Complete power and lighting distribution systems including all panels supplied by Menards
  - 3. Complete branch circuit wiring system supplied by contractor.
  - 4. Complete utility motor wiring systems, for all air conditioning equipment, heating equipment, exhaust equipment, controls. Thermostats and wiring shall be supplied Menard, Inc. and installed by electrical contractor. All three phase motors shall have phase protection and voltage imbalance protection devices throughout store.
  - 5. Complete under floor conduit and floor box installation.
  - 6. Complete lighting system installation, including incandescent, fluorescent, H.I.D, and Induction fixtures and timed light controls. Fixtures shall be supplied by Menards See schedule. White cords and twist lock plugs by Menard. Fixtures will be prewired with cords. Some assembly may be required.
  - 7. Complete telephone system, including underground entrance conduit to main equipment room, also terminal boards, boxes, plates, jacks, etc., as specified, shown on the drawings and required for a complete system. Switch board and phones supplied by Menards.
  - 8. Complete exterior wall lighting. Fixtures shall be supplied by Menards See schedule.
  - 9. Temporary electric service as required for construction.
  - 10. Testing of cables and circuit wiring after installation.
  - 11. Testing of all electrical equipment.

12. Install secondary step-down transformers as required.  
Transformers supplied by Menards
13. Provide circuits and outlet for sprinkler panel and bell and wiring for same. Bell/horn strobes supplied by sprinkler contractor.
14. Wiring and final connections for all building and pylon signs. In no case may a pylon sign power feed run through a future outlet. Verify with Menard, Inc. project manager as to location prior to placement. See drawings for requirements. Installation of signs shall be by others.
15. All conduits for fire and burglar alarm system, including outlets and wiring of 110 devices.
16. Complete sound, P.A., and intercom system, including outlets (Menard to supply equipment & wire).
17. Conduits and special wiring system for electronic cash register/computer system, including pulling all computer cables. See specifications.
18. Installation and complete wiring of fan and light display power system. Fan and light display shall be supplied by Menards
19. Complete wiring system and hook-up for forklift battery chargers. Battery chargers shall be supplied by Menards See schedule.
20. Complete wiring system and hook-up for cardboard compactor and garbage compactor. Compactor shall be supplied by Menards See schedule.
21. Complete wiring system and installation for all plug-mold. Plug-mold shall be supplied by Menards. See schedule.
22. Complete wiring system and installation for all, City approved, exit lights and emergency lighting. Exit and emergency light fixtures shall be supplied by Menards See schedule.
  - a. Contractor shall be responsible for verifying and determining the quantities and locations of exit lights and emergency lights that will be required by local building officials. No extra payments will be made by Menards for additional exit and/or emergency lights.
23. Complete wiring system and installation for electric hand dryers in restrooms. Hand dryers shall be supplied by Menards See schedule.
24. Complete wiring system and hook-up for automatic doors. Verify quantities on the drawings. Auto doors supplied by Menards.
25. Provide empty conduit and outlet for time clock at location shown on drawings. Pull time clock CAT5e cable to locations. Menards shall supply time clock CAT5e cable and provide final time clock installation.
26. Provide all necessary power and isolated grounds for the visual display units at each sales counter and front office counter. Provide conduits for clean power, general purpose power, phone lines and computer CAT5e cable and install systems. Pull CAT5e computer cable to each location and terminate. Computer CAT5e

cable supplied by Menards. Pull telephone wire and terminate.  
All CAT5e wire supplied by Menards.

27. Complete wiring system and installation of all parking lot lighting and yard lighting as shown on the drawings. Menards shall supply fixtures. See schedule.
28. Provide power and empty conduits to yard gate canopy as shown on the drawings. Provide pull cords in all empty conduits.
  - a. Install two traffic gates (115V, 60 cycle, 8 amp single-phase, 1/3 H.P. each) with heaters. Install two receivers for radio controlled gates (24V). Gates and receivers shall be supplied by Menards. Supply and install two commercial grade manual buttons in guard shack for parking gates. Contractor to verify quantities on the drawings.
29. Lighting control time clock supplied by Menard, Inc.. All wiring for power, relays, switches and contactors installed and supplied by contractor (unless otherwise specified). See plans for details.
30. Provide wiring and installation of overhead door operators; verify number and locations on plans.
31. Provide power for sprinkler system air compressor. Check with sprinkler contractor for power requirements.
32. Provide 120V outlets at each sprinkler system drum drips. Provide and install heat tape and insulation as required.
33. Complete wiring for fire pump and service if required.
34. Provide complete installation and wiring of generator and transfer switches. Generator and transfer switches supplied by Menards.
35. Wire for all signs – verify location, power requirements and scope of work per plans.
36. Complete wire for fire pump, controller and jockey pump.
37. Complete installation of fire and security alarm system and program. Components and wire supplied by Menard, Inc.

D. The following electrical schedule indicates fixtures and equipment to be supplied by Menards unless otherwise noted. Contractors shall verify all quantities, voltages and amperages as they are subject to change.

1. Entrance service (supplied by Menards)
  - a. 1600 amp, 480/277 volt, 3 phase.  
A=w/j
2. Main distribution (supplied by Menards)
  - a. HVAC 480 volt, 3 phase – quantities on drawings.
  - b. 1 transformer, 208/120 secondary, verify size and quantity on drawings.
  - c. Cardboard compactor, 480 volt, 30 amp, 3 phase, 1 each (compactor supplied by Menards).
  - d. Lighting panels 277 volt, varies.

- e. Battery chargers 480 volt, verify quantities on drawings, 30 amp each, 3 phase. Battery chargers supplied by Menards
3. HVAC
- a. 25 ton, 480 volt, 70 amp, verify quantity on drawings verify amperage with supplier.
  - b. Unit heaters, 120 volt, 30 amps, verify quantity on drawings.
  - c. Bathroom exhaust fan, 120 volt, 20 amps, verify quantity on drawing.
  - d. Electrical room exhaust fan, 120 volt, 20 amps, verify quantity on drawing.
4. Lighting
- a. Store, warehouse, 200 watt Induction lights, 277 volt, .73 amps, verify quantities on drawing.
  - b. Soffit, 150 watt, 277 volt, .55 amps, verify quantities on drawings.
  - c. Detached gate canopy, 200 watt Induction light, 277 volt, .73 amps, verify quantity on drawing.
  - d. Attached gate canopy 150 Watt, 277 Volt, .55 amps
  - e. Wal-paks, 350 watt pulse start, 277 volt, 1.27 amps, varies, see E5.
  - f. Fence, 350 watt, 277 volt, 1.27 amps, varies, see E1.
  - g. Parking lot, 350 watt, 277 volt, 1.27 amps, varies, see E1.
  - h. Quartz, 300 watt, 120 volt, 2.5 amps, 2 each.
  - i. Dock lights, 150 watt, 120 volt, 1.25 amps, 3 each.
  - j. 4' fluorescent, 120 volt, 1.5 amps, verify quantities on drawings.
  - k. 4' fluorescent, 120 volt, 1.5 amp, 4 tube, drop-in, verify quantities on drawings.
  - l. 4' fluorescent, 120 volt, 1.5 amps, single tube, verify quantities on drawings.
  - m. 4' fluorescent, 120 volt, 1.5 amp, 2 tube, shop light, verify quantities on drawings.
  - n. Incandescent, 120 volt, 1 amp, verify quantities on drawings.
  - o. Board rack, 277 volt, 150 watt, MH soffit lights, .55 amps, verify quantities on drawings.
5. Signs
- a. Menard letters, 277 volts, verify quantity on drawings.
  - b. "Welcome To", 277 volt, verify quantity on drawings.
  - c. Gate canopy, 277 volt, verify quantity on drawings.
  - d. Product signs (neon), 277 volt. Verify quantities and amperage with sign contractor.
  - e. Pylon, verify voltage, verify number of conduits and amperage.
  - f. In and out signs, 277 volt, verify quantity on drawings.

- g. LED product, 277 volt, verify quantities on drawings. Verify quantities and amperage on plans and with sign contractor.
- 6. NCR
  - a. Processors, 120 volt, 8 amps, verify quantities on drawings.
  - b. Work stations, 120 volt, 7 amps, verify quantities on drawings.
  - c. Printer, 120 volt, 8 amps, verify quantities on drawings.
  - d. Modem/power packs, 120 volt, 4 amps, verify quantities on drawings.
  - p. Registers, 120 volt, 4 amps, verify quantities on drawings.
- 7. Lighting Display
  - a. Fan beams, 120 volt, verify quantities on drawings.
  - b. Light clouds, 120 volt, verify quantities on drawings.
  - c. Wall clouds, 120 volt, verify quantities on drawings.
  - d. Displays, 120 volt, verify quantities on drawings.
- 8. Miscellaneous
  - a. Water heater, 240 volt, 30 amps, verify quantities on drawings.
  - b. 4' base board heaters, 240 volt, 20 amp, verify quantities on plans.
  - c. Saw, 120 volt, 10 amps, verify quantities on drawings.
  - q. Wall heater, 240 volt, 9 amps, verify quantity on drawings.
  - e. Entrance gates, 120 volt, 8 amps, verify quantity.
  - f. Hand dryers, 120 volt, 13 amps, verify quantity.
  - g. Plug-mold, 120 volt, verify quantities on drawings.
  - h. Outlets - miscellaneous equipment, 20 amp circuits, verify quantity on drawings. Contractor to verify.
  - i. Snack bar vending machine, 120 volts, verify quantity on drawings.
  - j. Exit lights, 277 volt, .5 amps, as required by code.
  - k. Emergency lights, 277 volt, as required by code.
  - l. Outlets - security, sound, fire alarms, telephone, 120 volt, 20 amps, verify quantities on plans.
  - m. Overhead door operators, 120 volt, 12 amps, verify quantities on drawings.
  - n. Sprinkler system compressor varies per sprinkler contractor.
  - o. Sprinkler system drum drip outlets, 120 volts, 5 amps, vary per sprinkler contractor.
  - p. Exhaust fans as designated on plans - installed by electrical contractor.
  - q. Fire pump if required, verify with sprinkler contractor and general contractor.
  - r. Conduit and pull strings for security to gate canopy and all gates.

- s. Bifold door motors. 3 Phase, verify rotation.
- t. Power for cameras. Verify plans.

## SECTION 16700

### SOUND SYSTEM

#### 1. General

- A. Furnish all labor for a complete sound system shown on the drawings and specified herein. Menard, Inc. to supply components and wire.
- B. Unless otherwise noted herein, the contractor is to provide all labor; supervision required to install the music and paging system and makes all features function as specified here. There shall be adequate sound in all areas.
- C. All wiring shall be run in such a manner that it will not interfere aesthetically with building construction or fixturing. Where able to run wiring concealed. The color of exposed wiring shall match the wall or ceiling it is attached to. Contractor is responsible for placement of speakers per the plans. Use white wire and white wire nuts/connectors.
- D. Contractor to provide whatever wiring necessary for connecting to the equipment in this contract and run to the telephone equipment located in the electrical room for the telephone contractor to hook-up for paging and music-on-hold features. Coordinate connection with telephones system installer and DMX supplier and installer.
- E. Paging shall be by telephone access. There shall be music and paging in all areas. Contractor to provide a relay (mixing modul) on the amplifier that cuts out the music during paging operations.
- F. It is understood that the contractor has examined the site and made provisions in their bid for any conditions which affect his bid and/or any other items not specifically addressed in these specifications or the plans.
- G. Contractor shall warrant to Menards that all materials, equipment and work furnished for the sound system will be new and of good workmanlike quality, free from faults and defects and in conformance with the specifications and plans. Contractor shall remedy and correct any problems which arise, at any time up to and including two years after acceptance and final payment for the entire project.
- H. Contractor shall provide on-site training necessary to acquaint Menard personnel with the system and use of its features.
- I. Menard, Inc. will supply the following materials, all other materials supplied by contractor, contractor to install:

Store Audio System				
<u>Qty</u>	<u>Mfg.</u>	<u>Model</u>	<u>Description</u>	
1	AEI	5020123	3.5 mm connector	
1	AEI	5070970	3.5 mm to stereo RCA / 6'	
3	Atlas	AT100RM	70V level control	
2	Quam	ERD-U	Back box	
2	Quam	C10X/BU/WS/AEI	Speakers with grilles, 70V	
1	Quam	C10X/BU/WS/VC	Speaker with grill & 70V	
transformer/volume			control	
1	MAP	EWR-12-22	wall mount rack	
1	Magnum	9111026	1 space vented blank panel	
1	Furman	8X	Solid front steel door with	
lock				
1	Magnum	9120203	2 space shelf	
84	TOA	CS 154	Speaker horn	
1	TOA	A724	Mixer Amplifier	
1	TOA	P912MKII	Power Amplifier	
2	TOA	MB25B	Rack mount kit for	
P912MKII, A724				
1	AEI		Assembly, custom & Misc.	
hardware				

- J. Menards has a separate contract for 3M Direct Broadcast Satellite Music. A dish and receiver shall be installed and connected to the sound equipment. Coordinate connection with 3M dealer.
- K. Menard, Inc. will be supplying 7,000' of 18/2 stranded, white speaker wire. If additional cable is required, contractor is responsible to supply at no additional cost to Menard, Inc.



## SECTION 16710

### PHONE SYSTEM

#### 1. GENERAL

- A. Furnish all labor and material to install the phone system as specified herein. Contractor will be required to supply all conduit raceways to locations as specified on plans. Where phone lines are located on walls, the wire must be concealed within the precast, masonry, or stud walls, etc. No exposed conduit or pancake molding is acceptable. Pull wire from electrical room (verify location on plans) to the required designations. Leave a 4' whip of cable at each designation and a 15' whip for each line in the electrical room. Menard, Inc. to supply 12,000' CAT5 phone system cable. If additional cable is required, contractor to supply at no additional cost to Menard, Inc. Cable required will be CAT5, 4 pair, twisted, PVC jacket, white.
- B. All cabling must be home run from store designations to the electrical room. Looping of cables will not be acceptable. Do not step on, run over or kink cables in any way. Use loose tie wraps – Do not cinch tight. Label each end of the cable with Brady label machine.
- C. Electrical contractor will terminate the phone end of the phone lines at each designation. The electrical contractor will test all cables, label all connectors, at the phone equipment and in the electrical room. The electrical contractor will provide the phone system surface mount jacks for the counters and flush jacks in the walls. If any cable does not pass their continuity testing, the contractor will be required to re-pull new wire as required prior to the phone contractor leaving the jobsite.
- D. The phone system will be defined as follows (verify plans for specific project requirements , number of cables, and locations)

<u>NUMBER OF CABLES</u>	<u>LOCATION ON PLANS</u>
1	Receiving
1	Cabinets and appliances
1	Wallcoverings
1	Floorcoverings
1	Plumbing
1	Electrical
1	Customer service desk (for
future use)	
2	Millwork (1for front desk
& 1 for rear desk	
1	Security office
1	Elevator control room
1	Pay phone

### BUILDING MATERIALS/CONTRACTOR SALES AREA

	1	Contractors fax location
	1	Payroll desk
	1	Store managers desk
desk	1	Assistant store manager's
	1	Deliveries desk
	1	Building materials desk
manager desk	1	Building materials
payable desk	1	Switch board/accounts
each end)	2	Contractor sales desk (1 at

#### **FRONT OFFICE**

	1	Front office fax
	1	Office manager's desk
payable desk	2	Switch board/accounts
	2	Front office computer location (under counter on back wall)

#### **ELECTRICAL ROOM**

1  
1  
1

Fire alarm panel  
Burglar alarm panel  
HVAC panel

#### **SPECTRALINK BASE STATIONS**

6

Electrical area, cabinets &  
appliance area,  
insulation/lumber area,  
fencing/plywood area,  
garden center & outside  
receiving

If additional phone lines are required by code (ie: fire, elevator, etc.) contractor required to supply as needed at no additional cost to Menard, Inc.

## SECTION 16740

### FIRE ALARM SYSTEM

#### 1. General:

- A. See the fire security plans, security system key, zone description key and the zone definitions. All fire devices will be hooked to the commercial UL listed fire panel, unless otherwise noted by the Fire Marshall. All conduits will match in color to its background. At no time will there be any exposed wire. All central station program information will be provided to the installer by calling Menards Store Facilities department at (715) 876-2730 no less than 10 business days prior to going "on line" with the monitoring station office hours are Monday – Friday 8:00am – 3:00pm Central Time. All fire devices will be wired with "Red" fire rated wire. A fire touch pad will be located with the burglary touch pad at the entrance of the building. A second touch pad will be located inside the sprinkler room. Menard, Inc. will be supplying 8,000' of 18/2; 6,000' of 18/4 & 15,000' of 12/2 red fire wire. If additional cable is required, contractor to supply at no additional cost to Menard, Inc.

Supply and install all ridged conduit and an octo-box in sprinkler room, contractor to supply and install all flexible conduits from each sprinkler device to the octo-box taking care that no conduits lie on or are tied to sprinkler or water pipes. All wiring in sprinkler room below 7' will be in conduit. Multi zone monitor modules with back plane & back boxes will be located in the building sprinkler room (3) & warehouse sprinkler room (1).

The contractor to supply a glass, oak framed, map of the store indicating the fire zones, and device locations prior to the stores opening, install next to key pad.

- B. As soon as the sprinkler system is ready to be activated, the sprinkler system needs to be monitored. Switches are supplied and installed by the sprinkler system contractor. The sprinkler system will be connected to the UL listed fire alarm control panel, and all devices to be zoned separately. Contractor will be responsible to meet all scheduled fire department inspections that are required to obtain initial approval and occupancy permit. The Fire Marshall prior to installation must approve the fire alarm plans. Fire alarm plans are to be submitted by Contractors licensed installer (as required by Local/State jurisdiction) to the appropriate individuals or department for approval immediately upon award of the building contract. Any changes or AHJ requests must be discussed with Menards Store Planning/Construction Manager prior to final acceptance of Fire Marshall.
- C. The low air pressure switches tamper switches and low temperature sensor switches to transmit supervisor signals.

- D. There will be a minimum of five risers each with the tamper, and flow switches and a minimum of 1 riser for the dry system with low air pressure, to be wired to the alarm panel in the electrical room for the store. The outside warehouse will have a dry system and requires all flow, low air, tampers and low temperature sensors to be connected to the panel in the electrical room (additional risers also to be wired if required).
- E. Fire pump, if this applies, connect switches to: pump running, pump power failure and pump phase reversal.
- F. The store building and unheated overhangs will have flow, low air pressure and tamper switches for the dry systems.
- G. Install a low temperature sensor in both sprinkler rooms.
- H. The contractor is to connect to factory installed duct smoke detectors in eleven roof top units. The electrician to supply power to the smoke detectors in the HVAC units. Contractor will wire each unit to fire panel, zoned separately, and connect them to test stations in electrical room. If not factor
- I. ADA audio visual horn strobes and strobes only throughout stores
  - \* Install BK-PC2WH Ceiling Mount Horn Strobe
  - \* Install BK-SCWH ceiling mount strobe
  
  - \* Install BK-RTS151 Key Remote Test Station
  - \* Install FL-BG12LX Addressable Pull Stations
  - \* Install FL-SD355 Smoke Detectors
  - \* Install FL-H355 Thermal Detectors
  - \* Install BK-PC2RHK Weatherproof Horn Strobe
- J. Clearly label all devices with permanent labels (magic marker is not an acceptable method) indicating what the device is and what zone it is.

1. Options

- A. Number of fire alarm devices varies per fire department. Quote unit price for more or less.
- B. If alarm activated push bars/ panic hardware are required, contractor will be required to hire local locksmith to provide appropriate lock cylinder for each device.

2. Fire Protection

(All fire protection devices will be in the following format):

MENARDS – Fire Zone/Address list for P5 Store Fire-Lite  
MS9200UDLS

ADDRESS	ZONE	DESCRIPTION	ADDRESS	ZONE
1	1	Elevator 1 <sup>st</sup> Flr Smoke Riser 1, Waterflow	50	209
2	2	Elevator 2 <sup>nd</sup> Flr Smoke Riser 2, Waterflow	51	210
3	3	Elev Upper Shaft Smoke Riser 3, Waterflow	52	211
4	4	Elev Lower Pit Smoke Riser 4, Waterflow	53	212
5	5	Elev Equip Rm Smoke Riser 5, Waterflow	54	213
6	6	Elev Upper Shaft Heat Riser 6, Waterflow	55	214
7	7	Elev Lower Pit Heat Low Air Riser 5  (Dry Sys)	56	215
8	8	Elev Equip Rm Heat Tamper, Riser 1	57	216
9	9	Electrical Room Smoke Tamper, Riser 2	58	217
10	10	Sprinkler Room Smoke Tamper, Riser 3	59	218
11 – 14	For Additional Detectors if installed Tamper, Riser 4		60	219
			61	220
15	174	Elev Primary Recall Tamper, Riser 6	62	221
16	175	Elev Secondary Recall Fire Pump, AC  Failure	63	222
17	176	Elev Cab Notification Fire Pump, Running	64	223
18	177	Elev Shunt Trip Fire Pump, Phase Rev	65	224
19	178	Elev Shunt Monitor Low Temperature  Sensor	66	225
** If Additional Modules are needed for Elevator Sprinkler Room and			67-79	For Tamperers in

Use 14 – 1, starting with Address 14, Zone 173  
Tampers in store

Any additional

20	179	RTU 1	80	239
	Board Shed,			
	Waterflow			
21	180	RTU 2	81	240
	Board Shed, Low Air			
22	181	RTU 3	82	241
	Board Shed, Tamper			
23	182	RTU 4	83	242
	Board Shed, Low			
	Temp			
24	183	RTU 5	84-89	For Additional
Board Shed Devices				
25	184	RTU 6		
26	185	RTU 7	90	249
	Main Bldg, Strobe			
	(CMF)			
27	186	RTU 8	91	250
	Main Bldg, Bell			
	(CRF)			
28	187	RTU 9	92	251
	Brd Shed, Strobe			
	(CMF)			
29	188	RTU 10	93	252
	Brd Shed, Bell (CRF)			
30	189	RTU 11	93-99	For Additional
CRF's & CMF's				
31 – 34 For Additional Modules if installed				
35	194	Pull Station, Door 4		
36	195	Pull Station, Door 5	* The Address is the code Detector programmed	
on the Module or				
with the two dials.				
37	196	Pull Station, Door 9		
38	197	Pull Station, Door 10		
39	198	Pull Station, Door 13	* The Zone is the code the device at the Central	
which identifies				
40	199	Pull Station, Door 14		
Station (Contact ID)				
41	200	Pull Station, Door 16		

42                    201                    Pull Station, Door 18  
Det etc.) Address and  
43                    202                    Pull Station, Door 19  
99)  
44                    203                    Pull Station, Door 22  
159 will give you the  
45                    204                    Pull Station, Door 23  
46-49    For Additional Pull Stations if installed

- \* Detectors (Smoke, Heat  
Zone #'s are the same (1-
- \* Modules Address # plus  
Zone #

## Fire & Burglary Equipment Supplied by Menard, Inc.

Burglary Alarm Equipment			
Part Number	Product Description	Equipment Use	
A-V128B-PAK1	128 Zone Alarm Panel w/6160 keypad		
AX-AL400UL	12/24 Volt 4 Amp Power Supply		
CW-D02	Motion Detector Long Range Lens		
AS-HUSK20	Hold Up Button, Key Resettable Switch		
GI-29PAWGB	Brown Wide Gap Contact	Safe contacts	
GI-400W	White Surface Mount Contact	Roof Hatch/Guard	
IM-1270	12V 7AH Battery	Shack	
GI-N4473WH	White 3/4" Recessed Contact w/magnet	Prehung Doors	
A-4208U	8 Zone Universal Expander		
8080TWGB	Brown 3/4" Recessed Wide Gap Contact	Auto Sliding Doors	
GI-20036	Floor Mount Overhead Door Contact	Overhead	
PIR DS936	Bosch Low Profile Panoramic	doors/Compactor	
DS778	Bosch Long Range PIR detector	Money room motion	
	Bosch Blue Line Gen 2 tritech motions	Long range motion	
ISC-VLD2-WP12G	40x40	Standard motion	
IGSMV	Honeywell back-up dialer/internet	Electrical room	
GI-8080TMCB	Brown 3/4" Wide Gap Contact	Single/double doors	
BW-BW103	24" x 30" x 6" Expansion Cabinet	expander cabinet	
CI-8450-3	Heavy duty pull apart and contract	Fire/snow gates	
DEV40XEE	Powered crash bar with sound or delay	Egress doors	
Firelite Fire Alarm Equipment			
Part Number	Product Description	Quantity	
FL-MS9200UDL	198 Zone Addressable Fire Panel w/dialer	1	
FL-ANN80	80 Character LCD Annunciator	2	Office/Sprinkler Rm
FL-SBB3	Annunciator Back Box	2	
FL-MMF300-10	Ten Input Monitor Module	4	
FL-CRF300	Control Relay Module	4	
BK-WBB	Weatherproof Box for Outdoor Strobe	1	Ext. Sprinkler room
FL-FCPS24FS8	Bell Power Supply	8	
FL-CMF300	Control Monitor Module	1	
FL-SD355	Photoelectric Smoke Detector	8	Spklr/Elev/Elec/Rtns
FL-H355	Addressable Heat Detector	3	Cntr
BK-SR	Red Wall Mount Strobe	8	Elevator
FL-BG12LX	Dual Action Pull Station	14	Bathrooms & front
FL-MMF301	Monitor Module	15	offices
BK-PC2WH	White Ceiling Mount Horn-strobe	48	Building perimeter
BK-PC2RHK	Red Ceiling Mount Horn-strobe (WP)	15	Main Building
BK-P2RK	Exterior Horn/Strobe (Wall Mount)	1	Garden Ctr/Warehouse
IM-1270	12V 7AH Battery	16	Ext. Sprinkler room
BK-RTS151KEY	Remote Test Station	11	
WI-TA2HL	Mechanical Hi-Low Temp Sensor	2	Roof top units
FL-ELR47K	EOL Resitor	47	Sprinkler rooms
FL-BG12LOB	Dual Action Pull Station/box (WP)	3	
BB2F	1-2 Module cabinet	3	Warehouse
			Ten Input monitor
			module



BK-P2R	Wall mount horn strobe	1	hallway
BK-SCWH	White Ceiling mount strobe		
DK-120SR	Hardwire control panel surge protection		
24VSLCLoop	Hardwire surge SLC Loop with Box 241		
FL-MK101CR	Relay SPDT in metal enclosure		
IS-PIPZ4VDC	24VDL 1 amp plug in power supply		
06-PAM1	10amp SPDT polarized relay		

## SECTION 16750

### SECURITY ALARM SYSTEM

#### 1. General:

- A. The contractor is to provide all labor, supervision, required to install and program the security system and make all features function as specified here. Material and equipment will be supplied by Menard, Inc.
- B. All work and equipment shall be according to state and local codes. Contractor shall be responsible for obtaining and paying for all licenses, official fees, and permits required for the security system.
- C. Job scheduling and coordination shall be reviewed weekly with Menards project manager.
- D. Equipment shall be installed in such a manner that it will not interfere aesthetically with building construction or fixturing. Conceal any wire inside the masonry wall or inside the door jambs. Caulk all openings where wire is installed.

The contractor shall provide all operators brochures and on site training necessary to acquaint Menard team members with the system and use of its features. The contractor will provide in a glass, oak framed, map of the store indicating the burglary zones and device locations prior to the stores opening. Verify with store management for mounting locations and mount the framed map.

- E. All keys shall be given to the store manager.
- F. Contractor shall warrant to Menards that all materials, equipment, and work furnished for the security system will be new and of good workmanlike quality, free from faults and defects and in conformance with the specifications and plans. Contractor shall remedy and correct any problems, which arise, at any time up to and including two years after acceptance and final payment of the entire project. Contractor shall also be responsible for false alarm charges that may be assessed by local authorities due to defective equipment, or work.
- G. The central station will be "F.E. Moran, Inc", phone number (866) 472-6450 (Verify with Menard, Inc. project manager)

Contact Menards Store Facilities department at (715) 876-2730 no less than 10 business days prior to putting the system on line office hours are Monday – Friday 8:00am – 3:00pm Central Time. Contractor will program the alarm panel to communicate with F.E Moran. The panel will send the full amount of activity that is possible to the central station. The contractor will provide a zone listing with all alpha descriptions to Menards Store Facilities department. Menards Store Facilities department

will provide the installer with all codes needed for installation, service and the panel call back number.

H. The Burglary alarm system will be defined as follows:

*	Interior burglary	Zone Type #4
*	Perimeter burglary	Zone Type #3
*	Trouble by day/alarm by night	Zone Type #5
*	24 hour trouble	Zone Type #6
*	24 hour alarm	Zone Type #6
*	Entry/exit	Zone Type #1

J. Twenty-four hour repair service will be provided during and after the warranty period. There shall be no extra cost during the warranty period for service pertaining to defective parts and labor. Contractor shall repair within six hours of the service call, or will provide some type of alternative protection.

## SECTION 16760

### BURGLAR ALARM SYSTEM

1. See the floor layout plan, security system key, zone description key and the zone definitions. The burglary alarm panel will be an Ademco Vista 128 burglar control panel (Vista 128BP) with an Ademco alpha key pad (6160). At no time will there be any exposed wire below 24'. This includes all wire running to the panel. All wiring for the burglary alarm system to be run using 22 gauge stranded wire, color to match background. All wiring will be home ran to the electrical room next to the alarm panel. All 8 zone hardwire input modules (4208-U) will be placed in an expansion cabinet. No other place will be accepted to contain zone expanders. Any openings made in walls will need to be caulked over and painted. Menard, Inc. will be supplying 30,000' of 22/4 white security wire. If additional wire is required, contractor to supply as needed at no additional cost to Menard, Inc.

2. Ademco Vista 128 Burglary Security System Key

(The following items coincide with the blue print)

- A. Automatic slider doors (1 zone):

Between the stationary breakaway doors and slider doors will be armed using a ¾" recessed wide gap GRI 8080 TWGB brown contact. See plan and specifications for details. (This will be one zone). **Note: Verify door manufacturer as the door contacts may not be needed. Doors may be programmed internally eliminating the need for physical contacts.**

- B. Glass single manual door (1 zone): Mount a GRI 8080TMCB recessed wide gap brown contact. (This will be one zone). Use friction mount magnet in hollow cove top and use silicone to keep it from sliding.

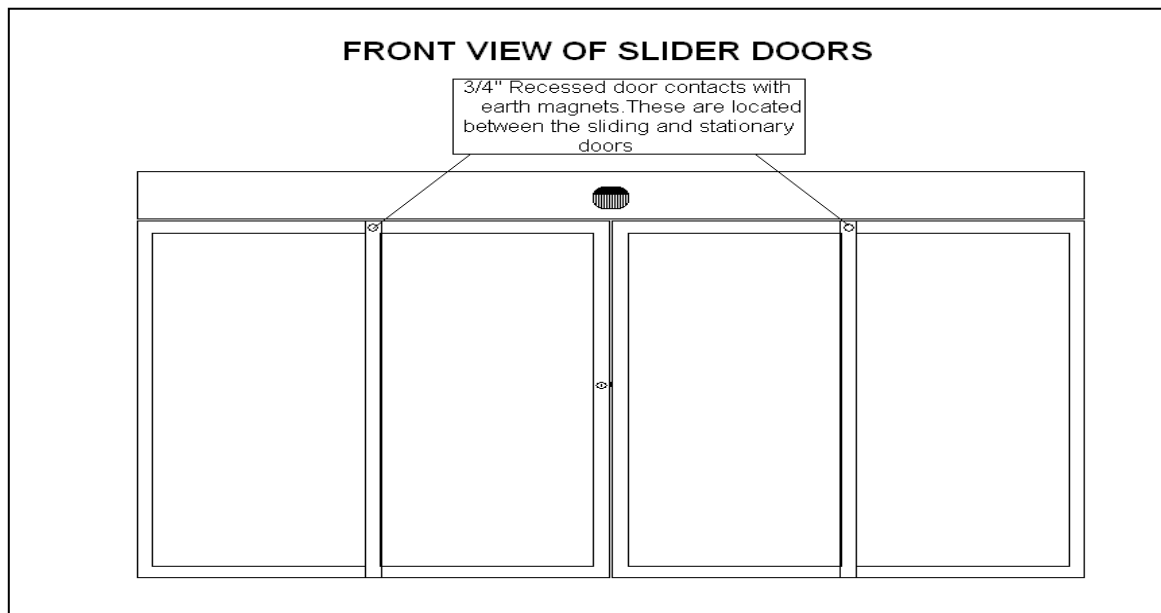
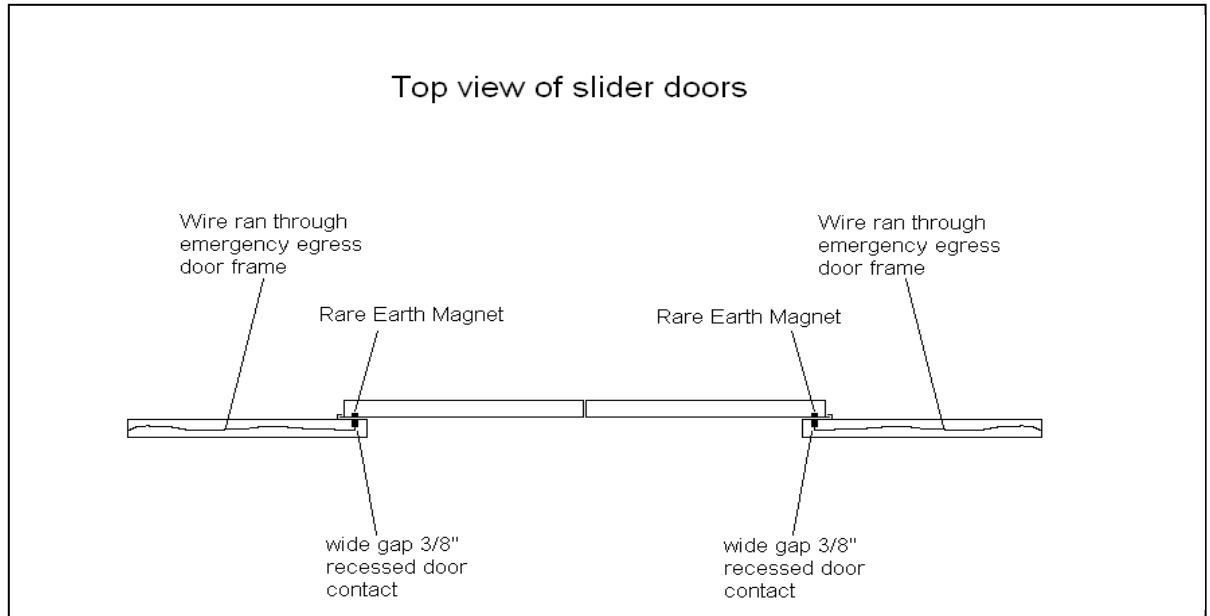
- C. Double manual glass doors (1 zone): Mount GRI 8080TMCB recessed wide gap brown contacts on each manual door. (This will be one zone). Use friction mount magnet in hollow cove top and use silicone to keep it from sliding.

- D. Solid single manual door (prehung doors) (1 zone): Place a recessed contact on top of the door frame. Use a GRI N 4473 white door contact. All wiring must be hidden behind the wall.

- E. Overhead garage, compactor & cart doors (1 zone): Place a garage door contact on the top of the overhead door. Armored cable to be tight to the wall and caulked with no loops, and no splices shown. Use a GI 200-36 overhead door contact.

- F. Patio door (guard shack) (1 zone): Place a recessed contact inside the slider door frame. Use a GI 400W white door contact. All wiring must be hidden behind the wall.
- G. Roof hatch contact (1 zone): Mount a GI 400W white contact to protect the roof hatch. All wiring must be secured to the truss frames and in armored cable.
- H. Hold up button: Place a hold up button under the office manager's desk and returns counter. Use AS- Husk 20; hold up with a key reset.
- I. Safe door contacts (2 zones): Place a safe door contact on both safe doors on the inside of the doors. This will require drilling into the side of the safe wall. Run all wiring on the top of each safe door. Wiring must be secured to the safe as so it does not come loose and break due to day-to-day wear and tear. Use GRI 29PA-WGB, brown contacts. Attach with adhesive backing, and also tamper resistant screws. All wiring to be in armored cable.
- J. Key lock box (es): Lock box (es) to be supplied by Menards, a lock box (es) that is approved by the city fire department is required. Electrical contractor to hook up tamper switch in lock box.
- K. Long range motion detector: Place a long-range motion detector over the center of the door. Verify plans for mounting instructions. Use Bosch Long Range PIK Detector – DS778 motion detector. All wiring must be hidden.
- L. Motion detector: Use Bosch Blue Line Gen 2 tritech motions 40x40-ISC-VLD2-WP12G. Verify plans for mounting instructions. Adjust the device to its surroundings. Also it should be able to sustain the movement of some signs and birds within its range. All wiring must be hidden.
- M. Panoramic Motion Detector: Install Bosch low profile panoramic PIR-DS936 motion detector in the money room per plan.
- N. Back-up wireless dialer: Install and program the Honeywell back-up dialer/Internet-IGSMV. Install supplied wire extension and antenna on roof.
- O. Yard access & fire gates: Electrical Contractor to supply and install metal shielded wire to Menard, Inc. supplied gate contacts.
- P. Crash Bars: As needed install and program powered crash bar with sounder and delay – DE-V40XEE. Verify plans if required.

**NOTE: ALL SECURITY ZONES ARE REQUIRED TO BE SEPERATED FROM ALL FIRE ZONES. THIS WILL MEAN THAT ALL THE BURGLARY ZONE EXPANERS WILL BE LOCATED IN 24" x 30" EXPANSION CABINET (BW-BW103BPG) AND ALL THE FIRE ZONE EXPANDERS WILL BE LOCATED IN A RED EXPANSION CABINET (PART # 60-856-95).**



**NOTE: Verify door manufacturer whether the door contacts are required doors may be pre-programmed internally eliminating the need for physical contacts. See Attached Sample schematic.**

## SECTION 16770

### SINGLEMODE FIBER OPTIC CABLE SPECIFICATIONS

#### 1. Standards

- A. All fiber optic cables must be 6 strand singlemode with a core diameter of 9 micron and a cladding diameter of 125 micron. Cable must meet or exceed the following standards:

EIA/TIA TSB-36  
EIA/TIA TSB-72

- B. Fiber will be terminated with UPC (Ultra Polish Connector) SC connectors and connected to the fiber panel or fiber box.
- C. Fiber will have 1 meter breakouts with 2.0mm jackets and furcation tube.
- D. Mechanical splices are NOT acceptable. Only fusion splices of pigtails or hot melt connectors will be accepted.

#### 2. Cabling

- A. Cable will be ANSI NFPA-70 compliant, 6 strand singlemode supplied by contractor.
- B. Fiber will be terminated with SC connectors and connected to the fiber panel or fiber box. Mechanical connectors are NOT to be used.
- C. Fiber patch panels and fiber box will be supplied by Menard, Inc. Follow plans for placement of patch panels and fiber boxes.
  - 1. Primary network rack patch panel in Electrical room to be AFL Telecommunications FM001351.
  - 2. Secondary network rack patch panel in kitchen mezzanine to be AFL Telecommunications FM001351.
  - 3. Tertiary network rack patch panel in hardware mezzanine to be AFL Telecommunications FM001351.
  - 4. Fiber box in the guard shack to be AFL Telecommunications OPN-1224.
- D. Tight buffered fiber with ONFR, FT-4 riser ratings (eg. General Premise Cable AP0061PNR) is to be used between Net Rack #1, Net Rack #2, and Net Rack #3.
- E. Loose tube, dual jacket OSP fiber (eg. General Cable AQ0064H1A-DWB) is to be used between the electrical room and the guard shack.

- F. Excess fiber is to be coiled inside the pull box mounted above the network racks.
- G. Fiber will be installed inside 2" conduit using long sweeping 90 degree bends. All conduit outside will be below the frost line.
- H. Conduits will be sealed with FireStop Moldable Putty to prevent entry of rodents.
- I. All fiber must be enclosed in conduit or pull boxes.
- J. Conduit stubs must terminate into a pull box. Air gaps must NOT exist.
- K. The maximum distance between any two pull boxes shall not exceed 200 feet on overhead conduit. If three or more 90 degree bends are required, a pull box shall be located at the third bend.
- L. Cable must be continuous. No splicing of cable.
- M. Maximum pulling tension not to exceed recommended tensile load as specified by fiber manufacturer.
- N. Minimum bend radius is 10x diameter of the cable.
- O. Zip ties are NOT to be used. Velcro straps can be used to bundle cables together.
- P. Installation shall be performed in such a way that fiber is routed and properly secured.
- Q. Each cable will have both ends clearly labeled. Label must be permanent.
- R. Where PVC conduit is used for fiber race way, approved thermal expansion joints must be installed every 100 feet.

3. Certification

- A. All installed cables will be tested end to end. Certification results from testing and scanning will be provided using a Pentascanner, Wave Tek or other equivalent scanner.
- B. Contractor is responsible for correcting or replacing all cables that fail certification at the contractor's expense.
- C. Contractor to provide as built drawings to identify location and ID numbers of installed cables.



## 1.1. ALL FIBER OPTIC CABLE ACCEPTANCE TESTING

### 1.1.1. **General:**

- 1.1.1.1. **Fiber optic cables less than 100 meters:** Power meter testing shall be performed on 100% of the fibers of each cable (less than 100 meters in length) installed by Contractor. Contractor shall perform the following measurement attenuation tests using the Insertion Method. Contractor must first determine a reference measurement to determine the injection power level of the stabilized source. Contractor shall connect the source directly to the optical power level meter using the referenced cable and connection. The reference level shall be checked and documented periodically in dB or dBm through the acceptance tests. The optical source is then connected to the beginning point in the network and the optical power level meter transferred to the remote end by a member of the test crew. The received level at this point will be measured. The measured attenuation shall be obtained by subtracting the reference level from the receive level.
- 1.1.2. **Power Meter Test Results:** Contractor shall furnish attenuation assessments on each fiber less than 100 meters in each cable in both directions, with the following information:
  - 1.1.2.1. Date of test
  - 1.1.2.2. Name of test personnel
  - 1.1.2.3. Fiber cable type and part number
  - 1.1.2.4. Cable number
  - 1.1.2.5. Fiber number
  - 1.1.2.6. TX wavelength
  - 1.1.2.7. TX location
  - 1.1.2.8. RX location
  - 1.1.2.9. TX model number and serial number
  - 1.1.2.10. RX model number and serial number
  - 1.1.2.11. Overall distance in meters
  - 1.1.2.12. Attenuation dB or dBm
- 1.1.3. **Fiber optic cables greater than 100 meters:** Contractor shall test (in one direction) each fiber strand in each cable (installed by Contractor), utilizing an OTDR for both distance (in meters) and attenuation (dB/km) at 850 nm, 1300 nm, 1310 nm and 1550 nm: The OTDR scope scale shall be such that anomalies of the magnitude of 0.2 dB are readily apparent on the trace: The refractive index will be set and verified in writing and in a certificate of calibration within 60 days prior to the test, as follows:
  - 1.1.3.1.1. Refractive index 1.4776 at 850 nm
  - 1.1.3.1.2. Refractive index 1.4719 at 1300 nm
  - 1.1.3.1.3. Refractive index 1.4675 @ 1310 nm
  - 1.1.3.1.4. Refractive index 1.4681 @ 1550nm
- 1.1.4. **OTDR Test Results:** Contractor shall furnish “tracer recordings” on each fiber strand greater than 100 meters in each and cable in both directions, with the following information:
  - 1.1.4.1. Date of test
  - 1.1.4.2. Name of test personnel
  - 1.1.4.3. Test wavelength
  - 1.1.4.4. Pulse duration(s) and scale range(s)
  - 1.1.4.5. Index of refraction
  - 1.1.4.6. Fiber cable type and part number
  - 1.1.4.7. Cable Number

- 1.1.4.8. Fiber number
  - 1.1.4.9. Fiber tube and/or fiber strand number
  - 1.1.4.10. Direction of test
  - 1.1.4.11. Overall distance in meters
  - 1.1.4.12. Attenuation in dB or dBm
- 1.1.5. **Certificate of Calibration:** All test equipment shall have a certificate of calibration from its manufacturer (or certified test laboratory) within 60 days prior to all test dates.
- 1.1.6. **Pre-Installation Testing Requirements:** When specifically required by the IS Infrastructure, Contractor shall perform a pre-installation attenuation acceptance test on all fiber cables on the factory reels. Once Contractor has measured the attenuation and has concurred with the factory test results, Contractor shall submit to the *IS Infrastructure* both Contractor and factory test results, documenting in writing Contractor's concurrence of the attenuation in all fibers.
- 1.1.7. **Post Installation Tests:** Contractor shall perform the following tests after placement of all inside and outside plant cable.
- 1.1.8. **Fiber Segment OTDR Distance and Attenuation Assessments:** When specifically required by the IS Infrastructure, Contractor shall test each and every fiber strand utilizing an OTDR for distance (in meters) and attenuation (dB/km), prior to splicing. Contractor shall furnish *IS Infrastructure* with "tracer recordings" of such tests.
- 1.1.9. **Link Loss Calculations:** Contractor shall use the length measurements to calculate the loss value for each span or segment, using the pre-installation or factory acceptance test measurement for dB/km.
- Example:

Segment Distance	= 500 m	
Attenuation / unit length	= 3.0 dB/km	
Calculation	= 500 m x 0.0030 dB/m	= 1.5 dB
Splice Loss	= 0.2 dB / splice x 2 splices	= 0.4 dB
Connector Loss	= 0.4 dB / mate x 2 connectors	= 0.8 dB
Segment Link Loss		= 2.7 dB
- 1.1.10. **Loss Factors:** Contractor shall factor in splice loss (0.2 dB) and mated pair loss (0.4 dB) in determining link loss value and shall reflect each individual loss value in the link loss documentation.
- 1.1.11. **Usage:** The assessments made by Contractor and furnished to *IS Infrastructure* shall be used for the recalculation of link losses that Contractor shall be required to adhere to for final testing
- 1.1.12. **Final Acceptance Test:** All installed fibers in all installed links shall be tested at 850 nm, 1300 nm, 1310 nm, and 1550 nm: for power attenuation (dB/km), using a stabilized light source and OTDR. These tests shall be performed in compliance with Fotec-Fiber Optic System Testing Guide, Single Cable Testing (one way loss). There shall be a jumper added, where applicable, at each end of the link-under-test in order that the end connectors may be validated. Test

results shall be reported in terms of "dB-loss" from the transmitting point, through all the patch panel connectors, where applicable, to the receiving end of the link-under-test. Accept/reject criteria, which were developed as part of the acceptance test plan, shall be utilized to determine acceptance of each fiber. 100% of all fibers in each fiber optic link shall be within test specifications

- 1.1.13. **Unsatisfactory Test Results:** If any segment of cable is found to have unsatisfactory test results, that specific cable link shall be replaced with a new link of cable. The replacement cable link shall be tested to demonstrate acceptability.

## SECTION 16780

### INFRASTRUCTURE HIGH & LOW VOLTAGE SPECIFICATION

#### 1. Power Wiring Network – Computer System

##### A. Provide and install distribution panel.

1. Electrician will install a new dedicated panel in new sites and utilize the existing register/processor dedicated panels in existing stores when possible. The new panel will have an isolated, insulated ground buss bar. All third wire grounds from new circuits will be routed back to this bar and terminated. A ground wire will be installed from the buss bar back to the ground reference point of the main supply.

##### B. New I.G. dedicated power to register locations for a new site.

1. From the dedicated Electrical panel, the electrician will provide and install a 3-wire isolated, insulated grounded 120 VAC 20 Amp circuit to the register locations. The new circuits will be routed and terminated to a Hubbel I.G. 5362 duplex receptacle at the register location. The third wire ground will be isolated from the conduit network and will be terminated to a separate isolated ground buss bar at the electrical panel. The circuit breaker will be identified and clearly labeled to indicate area of the store serviced. The dedicated power can service two register units.

##### C. New I.G. dedicated power to sales desk computer locations for a new site.

1. From the new panel(s), the electrician will provide and install a 3-wire isolated, insulated grounded 120 VAC 20 Amp circuit to the sales desk computer terminal locations. The new circuits will be routed and terminated to a Hubbel I.G. 5362 duplex receptacle at the terminal location. The third wire ground will be isolated from the conduit network and will be terminated to a separate isolated, grounded buss bar at the electrical panel. The circuit breaker will be identified and clearly labeled to indicated area of the store serviced. If multiple transformers are used to service the sales desk computer locations, they must all be tied to a common grounding point.

##### D. New I.G. dedicated power to the in-store processor.

1. From the dedicated processor panel, electrician will provide and install a 3-wire isolated, insulated, grounded 120 VAC 20 Amp circuit to each in-store processor location. The new circuits will be routed and terminated to a Hubbel I.G. 5361 receptacle. The third wire ground will be isolated from the conduit network and will be

terminated to a separate, isolated grounded use bar at the electrical panel. The processors will be located on the same phase. The circuit breaker will be identified and clearly labeled to indicate the processor serviced (two circuits on the same phase). A third isolated, insulated circuit with two I.G. 5362 receptacles should be installed to accommodate the modems.

E. Extended existing power at the sales desk computer terminal locations at existing sites.

1. The electrician will extend existing circuit at the sales desk computer location to the new location. The new circuits will be routed and terminated to a three-prong convenience duplex receptacle at the terminal location. The circuit breaker will be identified and clearly labeled to indicate area of the store serviced.

## 2. Special Considerations

A. On occasion, normal techniques of routing cable are not available and special provisions must be made. In most cases, the situation will arise in island fixture locations on a slab without any existing conduit or either data (low percentage conduit only) and/or power (existing outlet power). One of the following methods may be used (the desired method will be designated on the electrical drawings):

1. Pancake Molding: Electrician will install a double pancake molding secured to the concrete flooring running from the nearest column or wall to the cash/wrap. It is suggested that this be used only in employee traffic areas. Pancake mold shall be provided by Menard.
2. Telepower Poles: Electrician will install a telepower pole from the fixture to the ceiling tiles. Both data and power can be routed down this pole. Telepower pole shall be provided by Menards.
3. Floor Channeling: Electrician will remove floor tiles or cut back carpeting, soft cut and channel the floor, install single or double ¾" EMT conduit from the nearest column wall or existing floor box to the fixture, repatch the floor and retile.

## 3. Input Voltage

A. The following input voltages can be used with any of the System 5 computer equipment units at either 50 or 60 Hertz (49.0 to 50.5 Hz; 59.0 to 60.6 Hz).

Nominal

Vac

120

Range

(104-127)

4. AC Power Connections and Grounding Requirements

- A. Each circuit must be three conductors, which includes separate wires for the lines neutral, and insulated ground to the building load center. In addition, the following electrical requirements apply:
1. All interconnected equipment should be installed using a common safety grounding point.
  2. Conduit must not be the only method of grounding. The additional grounding conductor must be an insulated wire.
  3. Distribution panels that feed the System 5 equipment must be free of all heavy switching loads.
  4. The processor units and checkout registers installed on 3 phase panels should be installed in such a way as to have equal amperes load on all phases. Although equal loads may not always be possible, no phase shall have more than 15% deviation of the other phases.
  5. If multiple transformers are used, they must all have a common grounding point.
  6. All equipment that is logically interconnected to form a “system” should be installed so there is less than  $\frac{3}{4}$  AMP current flows on the grounding conductor. This measurement is to be taken at the distribution panel feeding the “system” and/or equipment.
  7. If the current flow on the grounding conductor exceeds 3.5 MA, then a warning level must be affixed at the measured grounding point to advise service personnel to disconnect the power to the “system” before servicing the grounding connection.

5. Power Connections

- A. The site power connection required for terminals is a standard service wall outlet with insulated ground (3-wire). For U.S.A. installations, use a Hubbel IG-5362 outlet (or equivalent). The size of the conductors should be 33 mm<sup>2</sup> (23 AWG).

Wiring requirements often permit the unit to operate within existing store wiring configurations. It must be noted, however, that the contractor has the responsibility for providing an adequate circuit, should it be discovered their existing wiring is not acceptable.

1. The processor units, registers and VDU's are shipped with a power cord (5 ft. in length) to connect them to the power source.
2. Connect peripherals (example: scanners on registers and line printers on VDU's) to the same branch circuit as the associated register or VDU.

6. Grounding Points

- A. Either of these locations are acceptable grounding points:
  - 1. Building service ground point.
  - 2. Cold water pipe (must be copper and must be grounded to earth ground or building service ground point).
- B. Insulation grounding wire must be isolated from conduits and neutrals. Conduit ground must not be used in place of the safety ground wires because of possible high resistance connections at conduit joints.
- C. Equipment grounds are required for safety, as well as for proper equipment operation, and must comply with all applicable electrical codes. It must also provide an insulated ground wire to the building's electrical service ground point. All AC power supplied to the units of the System 5 computer system must be grounded to a common ground. Under no circumstances must this safety ground be used as a return or a neutral conductor for any equipment.

7. Conduit Breaker Rating

- A. The recommended rating of the site circuit breaker is 20A at 120V nominal.
- B. No more than two register units per circuit breaker. Double sided check outs will have two register units.

8. Data Communication Wiring Restrictions for Electrician

- A. The following cable routing restrictions are necessary to make sure that the communications link functions properly.
  - 1. a. All cables must be 4 pair, 24AWG unshielded twisted pair. Cable must meet or exceed the following standards:
    - EIA/TIA 568B
    - EIA/TIA 569A
    - AIA/TIA TSB-36
    - IEEE 802.3
  - b. Menard, Inc. will be supplying 4,000' white RG6 coax and 16,000' CAT5 wire. If additional cable is required, contractor to supply at no additional cost to Menard, Inc.

2. There should be at least 305 mm (1 ft.) of space between the communication link cable and any fluorescent, neon or incandescent light bulb.
3. The following chart shows the minimum space requirements between the communication link cable and any electrical equipment power cables.

Maximum Rated Power Circuit	Unshielded Power Cables	Shielded Cables
1 kV (in.)	305mm (1.0 ft.)	25.4mm (1.0 in.)
2 kV (in.)	457mm (1.5 ft.)	50.8mm (2.0 in.)
5 kV (in.)	609mm (2.0 ft.)	152.4mm (6.0 in.)
5 kV (12.0 in.)	1524mm (5.0 ft.)	304.8mm

4. In special installations where the requirements in restrictions 1 and 2 have to be deviated from, enclose the communication cables in grounded conduit.
5. If the communication cable is to be routed through an elevator shaft or air plenum, enclose the communication cable in grounded conduit or a Teflon shielded CAT5 cable.
6. Do not install communication cables and power cables in the same conduit. Power cables are defined as those carrying 50 or 60 Hertz with amplitudes greater than 24 Vac. It is acceptable to install communication cables in a conduit that already carries telephone or low level power cables (less than 1W at 24 Vac).
  - a. Verify which phone system is being installed.
  - b. Wiring Checklist:
    1. System 5 computer system AC Power must be in separate channel in the power pole or conduit.
    2. Data wiring LAN (CAT5 cable) for System 5 computer System must be in separate channel or conduit.
    3. Menards is using a phone system which exceeds 24 Vac and it therefore must be installed in separate channel or conduit.
    4. If a separate intercom system is used, it cannot be in the System 5 computer System data or power conduit.
7. Do not route communication cables outside a building unless they are properly protected from lightning or other equivalent transient noise signals.
8. Apply strain relief (for example, Pancake Molding) to any part of the link as required to give a reliable electrical network. Protect



- the LAN cable from damage from moving equipment, people walking, or placing of heavy objects on the cable.
9. LAN link may be up to 90 meters (292 ft.) in length.
  10. The LAN cable must not be crushed or bent sharply. Mounting brackets or clamps should be used to support the cable when not run in conduit. Mounting brackets must be screw mounted. They should not nail mount to prevent hammer damage to cable.
  11. Electrician will sequentially label each LAN cable on both ends as indicated on plans.
  12. Work station jacks should be wired to T568B color code as labeled on jack.
  12. No splices may be made anywhere in the LAN cable.
  13. When making corners with conduit, the corner shall not be any sharper than a 3" radius. Do not use right angle fittings.
  13. When the LAN cable leaves conduit, a nylon or plastic lip should be put on the ends, so the cable is not damaged if it rubs against the edge of the conduit.
  14. Horizontal and riser cabling:
    - a) All components must be EIA/TIA 568B compliant. Including, but not limited to, cable, patch panel, patch cables, and station outlets.
    - b) Horizontal and riser cable will be solid copper.
    - c) Color of horizontal cable is to be white only.
    - d) Length not to exceed 90 meters (292 feet).
    - e) Must be continuous. No cross connects.
    - f) Maximum pulling tension not to exceed 25 lbs.
    - g) Minimum bend radius is 4x diameter of the cable.
    - h) Raceway or conduit will be used where cable would otherwise be exposed. Must conform to EIA/TIA 569A standards. **THERE SHALL BE NO EXPOSED CABLING!**
    - i) Conduit will be sealed with Firestop Moldable Putty to prevent entry of rodents.
    - j) Cable management unit must be installed in each 19 inch rack – will be part of rack.
    - k) Installation shall be performed in such a way that cable is routed and properly secured.
    - l) Patch panels and station outlets must be EIA/TIA 568B compliant, 110 type 8 position 8 conductor, RJ-45 (by contractor) jacks with provisions for labeling.
    - m) Patch panel should be an ortronics or equivalent – by Menards.
    - n) Cable will be fully terminated at the station end onto 8 position (RJ-45 by contractor) outlets and at patch panel.
    - o) Workstation jacks should be wired to T568B color code as labeled on jack.
    - p) Patch panel 110 block to be wired as shown in Diagram 1.
    - q) Each end of every cable will be clearly labeled. Label must be permanent and unique.

- r) For termination:
  - 1. Outside jacket should be stripped only as far as needed to terminate individual pairs.
  - 2. Jacket should be centered on 110 block to minimize exposed wire.
  - 3. Untwisted should not exceed 0.5 inches.
- 15. Patch and workstation cables.
  - a) Will be purchased from reputable dealer and conform to EIA/TIA 568B standards. Any cable not purchased pre-terminated must be certified to EIA/TIA 568B.
  - b) Cables will be wired as follows (see diagram 2 for pin out):
    - 1. Straight through patch cables will be wired as shown on Table 1.
    - 2. Crossover patch cables will be wired as shown in Table 2 and will be red in color.
  - c) Made of standard wire for maximum flex life.
  - d) Not to exceed 10 meters total combined length.
    - 1. Patch cables should be 1.5 meters (5 feet) in length.
    - 2. Workstation cables should be 3 meters (10 feet) in length.
  - e) Should meet or exceed performance characteristic of horizontal cabling (see Table 3).
  - f) Exception: Connections to wireless station adapters from the workstation can be up to 10 meters (33 feet) in length to allow higher placement of wireless devices.
- 16. Certification.
  - a) All installed cables will be tested end to end. Certification results from testing and scanning will be provided using a Pentascanner, WaveTek or other equivalent scanner.
  - b) Vendor is responsible for correcting or replacing all cables that fail certification. Replacement is at the vendor's expense.
  - c) A report will be printed detailing test results for future reference.
    - 1) For new installations, no existing wiring, the report will be placed in labeled binder. Label will have location name on cover and binder edge.
    - 2) For existing installation where new lines are being added, only the test results for the new lines need to be submitted. No need to place in labeled binder.
    - 3) Report will start with a summary of connections.
      - a) Summary will include all variable listed:
        - i) Circuit ID (number on patch panel).  
(NR-PP)
        - ii) Type of test (i.e. CAT5).
        - iii) Cable length in meters.
        - iv) Date tested.
        - v) Result (pass).

- b) Report will continue with detailed results from each connection tested.
- d) Vendor will provide as-built drawings to identify location and ID numbers of installed cables.

Table 3: Performance Characteristics: Horizontal Cable

<b>Parameter/Cable Type</b>	<b>Cat5e (100Mhz)</b>	<b>Cat6 (250Mhz)</b>
Maximum Horizontal Cable Length	90 meters	90 meters
Insertion Loss (Attenuation)	24dB	35.9dB
NEXT (Near-end crosstalk)	30.1dB	33.1dB
PSNEXT (power sum near-end crosstalk)	27.1dB	30.1dB
ELFEXT (equal-level far-end crosstalk)	17.4dB	15.3dB
PSELFEXT (power sum equal-level far-end Crosstalk)	14.4dB	12.3dB
Return Loss	10dB	8dB

NOTE: All values shall not exceed values listed

NOTE: Verify with Menard Inc. project manager to determine if there is an updated 'New Store Network Infrastructure Checklist'

New Store Network Infrastructure Checklist		
Net Rack 1 (NR-1)		
Cabinet/Conduit		
Task	Notes	Complete
Confirm the cabinet is hung with hinge on the same side as the conduit running up to the junction boxes as per plan.		
Confirm the cabling path is sealed in conduit from end to end and any extra holes added to junction boxes and/or cabinets must be sealed.		
Confirm use of cable trough and junction boxes		
Confirm 2 separate power circuits have been installed in the correct location in the cabinet		
Confirm the use of service loops in the junction boxes		
Confirm conduit and junction boxes only contain data (Cat5e/fiber) lines, no phone or coax lines.		
Cat5e		
Task	Notes	Complete
Confirm the Cat5e is using the correct stubs into the cabinet.		
Confirm Cat5e is routed on the hinge side of the cabinet		
Confirm Cat5e is separate from fiber		
Confirm jacks 1-23, 1-24, 1-47 & 1-48 are present for the T1 lines		
Confirm jack 1-21 is present for the PBX box		
Confirm jack 1-11 is present for the Alarm Panel		
Fiber/Fiber Pathing		
Task	Notes	Complete
Confirm Fiber is using the correct stub into the cabinet		
Confirm Fiber is routed on the hinge side of the cabinet		
Confirm the Fiber service loop is using the 12" Velcro management ring mounted in the junction box		
Confirm the Fiber is separate from Cat5e		
Confirm single mode tight buffer (yellow) Fiber is used for the indoor links (NR-2 and NR-3) and armored jacketed single mode fiber is used for outdoor links (NR-4)		
Confirm the fiber splices are fusion/hot melt NOT mechanical		

Net Rack (NR-2)		
Cabinet/Conduit		
Task	Notes	Complete
Confirm the cabinet is hung with hinge on the same side as the conduit running up to the junction boxes as per plan		
Confirm the cabling path is sealed in conduit from end to end and any extra holes added to junction boxes and/or cabinet must be sealed.		
Confirm use of cable trough junction boxes		
Confirm 2 separate power circuits have been installed in the correct location in the cabinet.		
Confirm the use of service loops in the junction boxes		
Confirm conduit and junction boxes only contain data (Cat5e/fiber) lines, no phone or coax lines.		
Confirm the presence of the VSAT Gateway Shelf and 2-24 network jack associated with it		
Confirm the presence of a roof penetration for power and satellite lines		
Cat5e		
Task	Notes	Complete
Confirm the Cat5e is using the correct stubs into the cabinet		
Confirm Cat5e is routed on the hinge side of the cabinet		
Confirm Cat5e is separate from fiber		
Pull Box 1		
Task	Notes	Complete
Confirm these are conduits run to registers 7-12		
Confirm there is a 2" conduit running up to the server area		
Confirm there is a 2" conduit running up to Net Rack 2 (NR-2)		
Pull Box 2		
Task	Notes	Complete
Confirm there are multiple conduits run to building materials and the garden center area		
Confirm there are two 2" conduits running up to Net Rack 2 (NR-2)		
Fiber/Fiber Pathing		
Task	Notes	Complete
Confirm Fiber is using the correct stub into the cabinet		
Confirm Fiber is routed on the hinge side of the cabinet		
Confirm the Fiber service loop is using the 12" Velcro management ring mounted in junction box		
Confirm the Fiber is separate from the Cat5e		
Confirm single mode tight buffer (yellow) Fiber is used for the indoor links (NR-1 and NR-3)		
Confirm the fiber splices are fusion/hot melt-NOT mechanical		

Net Rack 3 ( NR-3)		
Cabinet/Conduit		
Task	Notes	Complete
Confirm the cabinet is hung with hinge on the same side as the conduit running up to the junction boxes as per plan		
Confirm the cabling path is sealed in conduit from end to end and any extra holes added to junction boxes and/or cabinet must be sealed		
Confirm use of cable trough and junction boxes		
Confirm conduit and junction boxes only contain data (Cat5e/fiber) lines, no phone or coax lines		
Confirm the presence of the 3G Gateway Shelf and 3-24 network jack associated with it		
Confirm the presence of a roof penetration for 3G antenna cable		
Cat5e		
Task	Notes	Complete
Confirm the Cat53 is using the correct stubs of the cabinet		
Confirm the Cat5e is routed on the hinge side of the cabinet		
Confirm the Cat5e is separate from fiber		
Fiber/Fiber Pathing		
Confirm Fiber is using the correct stub into the cabinet		
Confirm Fiber is routed on the hinge side of the cabinet		
Confirm the Fiber service loop is using the 12" Velcro management ring mounted in junction box		
Confirm the Fiber is separate from the Cat5e		
Confirm single mode tight buffer (yellow) Fiber is used for the indoor links (NR-1 and NR-3)		
Confirm the fiber splices are fusion/hot melt-NOT mechanical		
Net Rack 4 (NR-4)		
Cabinet/Conduit		
Task	Notes	Complete
Confirm the cabinet is hung with hinge on the same side as the junction box		
Confirm the cabling path is sealed in conduit from end to end and any extra holes added to junction box and/or cabinet must be sealed		
Confirm use of junction box		
Confirm the power circuit has been installed in the correct location in the cabinet		
Confirm the use of service loops in the junction boxes		
Confirm conduit and junction boxes only contain data (Cat5e/fiber) lines, no phone or coax lines		
Confirm conduit for cameras and access point are going to the junction box		
Cat5e		
Task	Notes	Complete
Confirm the Cat5e is using the correct stubs into the cabinet		
Confirm Cat5e is routed on the hinge side of the cabinet		
Fiber/Fiber Pathing		
Task	Notes	Complete
Confirm Fiber is using the correct stub into the cabinet		
Confirm Fiber is routed properly into the cabinet		

Confirm the Fiber service loop is using the 12” Velcro management ring mounted in junction box		
Confirm single mode armored jacketed Fiber is used for the outdoor link (NR-1)		
Confirm the fiber splices are fusion/not melt-NOT mechanical		

CCTV SPECIFICATION

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# **Menards**

## **Technical Specification**

### **PART 1 – GENERAL SPECIFICATIONS**

#### **1.1 SCOPE**

- A. This document describes the products and execution requirements relating to furnishing and installing IP CCTV Cabling at the new or remodeled stores for the Menards. Horizontal cabling comprised of Copper Cabling and support systems are covered under this document.
- B. The Horizontal Security Cabling System shall consist of a single 4-pair Unshielded Twisted Pair (UTP) Copper Cable to each CCTV component (camera, recorder, monitor, etc.) outlet unless otherwise noted for specific locations. The cable shall be installed from the Camera Area Outlet to the Network Room (NR) or to the appropriate location serving that area and terminated as specified in this document.
- C. All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the contractor's IP CCTV Cabling contractor as detailed in this document.
- D. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities of camera outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document. If the bid documents are in conflict, this specification shall take precedence. The successful vendor shall meet or exceed all requirements for the cable system described in this document.

#### **1.2 REGULATORY REFERENCES**

- A. All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association, the local Electrical Code and present manufacturing standards.
- B. All materials shall be UL or ETL Listed and shall be marked as such. If UL/ETL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL/ETL has an applicable system listing and label, the entire system shall be so labeled.

All modular jacks, patch cords, consolidation point, assemblies, and patch cords performance shall be verified (not just tested) by a third party to be category 5e component and channel compliant.

- C. The cabling system described in this is derived from the recommendations made in recognized telecommunications industry standards. The following documents are incorporated by reference:
1. ANSI/TIA/EIA - 568-B.1, Commercial Building Telecommunications Cabling Standard Part 1: General Requirements, April, 2001
  2. ANSI/TIA/EIA - 568-B.2, Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components, April, 2001
  3. ANSI/TIA/EIA - 568-B.3, Commercial Building Telecommunications Cabling Standard Part 3: Optical Fiber Cabling Components, April, 2001
  4. ANSI/TIA/EIA – 569-B, Commercial Building Standard for Telecommunications Pathways and Spaces, October, 2004
  5. ANSI/TIA/EIA – 570-B, Residential Telecommunications Cabling Standard, April, 2004
  6. ANSI/TIA/EIA – 606-A, Administration Standard for Telecommunications Infrastructure of Commercial Buildings, February 2003
  7. ANSI/TIA/EIA – 607-A, Commercial Building Grounding and Bonding Requirements for Telecommunications, October, 2003
  8. ANSI/ TIA/EIA – 758-A, Customer-Owned Outside Plant Telecommunications Cabling Standard, August, 2004
  9. BICSI - TDMM, Building Industries Consulting Services International, Telecommunications Distribution Methods Manual (TDMM) National Fire Protection Agency (NFPA – 70), National Electrical Code (NEC) - 2005
- D. If this document and any of the documents listed above are in conflict, then the more stringent requirement shall apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release when developing the proposal for installation.
- E. This document does not replace any code, either partially or wholly. The contractor must be aware of local codes that may impact this project.

### 1.3 APPROVED CONTRACTOR

- A. The IP CCTV cabling installing contractor must be an approved IP CCTV Cabling contractor. Prior approval must be obtained by Menard Store Security Division prior to any work proceeding. The IP CCTV installing contractor is responsible for workmanship and installation practices in accordance with the Menard IP CCTV standards.
- B. At a minimum, the IP CCTV Cabling Contractor shall have at least 5 years of experience in the installation of IP CCTV Cabling systems with 100 percent of the installation and termination crew trained and certified in the installation of IP CCTV Cabling systems. Copies of training certificates shall be provided to Menard prior to the installation of any cable.
- C. The installing CCTV Cabling Contractor shall be properly licensed and insured to do business in the state where the work is executed and also be responsible for obtaining all permits required for the installation of the IP CCTV cabling system. Proof of the appropriate licenses and insurances shall be included given to Menard Inc. prior to installation commencing.

### 1.4 APPROVED PRODUCTS

- A. Approved 4-pair UTP Cable: Berk-Tek LANmark-350 Enhanced Category 5e Cable - Non-Plenum - White – Part number 10032434
- B. Approved OSP UTP Cable manufacturer: Berk-Tek LANmark-6 OSP (Outside Plant) Standard Category 6 UTP cables – Part Number 10139885
- C. Approved Microphone Cable manufacturer: General Cable, Multi-Conductor, FlexfoilA Shield, with two (2) 24 AWG conductors – Part Number C1228.21.01
- D. Approved Optical Fiber Cable manufacturer: By Menards IT
- E. Approved UTP connector product manufacturer: Ortronics – Part Number OR-TJ5E00 – fog white
- F. Approved Fiber Optic cabinet product manufacturer: By Menards IT
- G. Approved Fiber Optic connectors/splices/couplers: By Menards IT
- H. Approved Rack and Cabinet manufacturer: By Menards IT
- I. Approved Patch Panel manufacturer: Ortronics - OR-PHD5E6U48 for 48 port locations and OR-PHD5E6U24 for 24 port locations.
- J. Approved UTP Patch Cord manufacture: Ortronics – Part Number OR-MC5eXX-XX – (Verify color and length with Menards)
- K. Approved Surface Mount Boxes & Face Plate Assemblies: Ortonics OR-404TJ2 – fog white for surface mount locations or OR-KSFP2 Fog White

Single gang plastic faceplate for wall installation, holds two Keystone jacks or modules

- L. Approved Cable Support Manufacturer: Caddy – Part Number CAT 1224SM painted white to match the ceiling
- M. Approved SMB mounting manufacturer: Cooper B-line – Part number BU-2-4 painted white to match the ceiling.

## 1.5 WORK INCLUDED

- A. The work included under this specification consists of furnishing all labor, equipment, materials, and supplies and performing all operations necessary to complete the installation of this structured cabling system in compliance with the specifications and drawings. The IP CCTV installing contractor will provide and install all of the required material to form a complete system whether specifically addressed in the technical specifications or not.
- B. The work shall include, but not be limited to the following:
  - 1. Furnish and install a complete IP CCTV wiring infrastructure.
  - 2. Install, and terminate all UTP and Optical Fiber cable as indicated in the drawings.
  - 3. Install all wall plates, jacks, patch panels, security assemblies, and patch cords.
  - 4. Install all required cabinets and/or racks as required and as indicated. Provided by Menards
  - 5. Furnish any other material required to form a complete system.
  - 6. Perform link or channel testing (100% of horizontal and/or backbone links/channels) and certification of all components.
  - 7. Furnish test results of all cabling to the owner on disk and paper format, listed by each NR, then by CCTV Camera ID.
  - 8. Adhere and comply with all requirements of Ortronics CI/CIP and Berk-Tek OASIS programs.
  - 9. Provide owner training and documentation. (Testing documentation and As-built drawings)

## 1.6 SUBMITTALS

- A. Under the provisions of this specification, prior to the start of work the IP CCTV installation contractor shall:
  - 1. Submit copies of the certification of the company and names of staff that will be performing the installation and termination of the installation to provide proof of compliance of this spec.
  - 2. Submit proof from manufacturer of contractor's good standing in manufacturer's program.
  - 3. Demonstrate at least 5 years of business in the installation of IP CCTV cabling systems.

4. Submit appropriate cut sheets and samples for all products, hardware and cabling.
- B. Work shall not proceed without the Owner's approval of the submitted items.
- C. The IP CCTV installation contractor shall receive approval from the Owners on all substitutions of material. No substituted materials shall be installed except by written approval from the Owner.

## 1.7 QUALITY ASSURANCE

- A. The work included under this specification consists of furnishing all labor, equipment, materials, and supplies and performing all operations necessary to complete the installation of this structured cabling system in compliance with the specifications and drawings. The IP CCTV installing contractor will provide and install all of the required material to form a complete system whether specifically addressed in the technical specifications or not.
- B. The IP CCTV installer shall have at least 5 years of experience installing UTP cable for IP CCTV systems. Provide copies of resumes for IP CCTV installers prior to the start of work.

## 1.8 DELIVERY, STORAGE & HANDLING

- A. Delivery and receipt of products shall be at the site described in the Scope Section.
- B. Cable shall be stored according to manufacturer's recommendations as a minimum. In addition, cable must be stored in a location protected from vandalism and weather. If cable is stored outside, it must be covered with opaque plastic or canvas with provision for ventilation to prevent condensation and for protection from weather. If air temperature at cable storage location will be below 40 degrees F., the cable shall be moved to a heated (50 degrees F. minimum) location. If necessary, cable shall be stored off site at the contractor's expense.

## 1.9 DRAWINGS

- A. It shall be understood that the electrical details and drawings provided with the specification package are diagrammatic. They are included to show the intent of the specifications and to aid the IP CCTV installing contractor. The IP CCTV installing contractor shall cover whatever work is required to comply with the intent of the plans and specifications (including the relocation of cable drops to facilitate a field of view approved for by Menard, Inc.).
- B. The IP CCTV installing contractor shall verify all dimensions at the site and be responsible for their accuracy.
- C. Prior to work commencing, the IP CCTV installing contractor shall call the attention of Menard to any materials or apparatus the IP CCTV installing contractor believes to be inadequate and to any necessary items of work omitted.

## **PART 2 - PRODUCTS**

### **2.1 EQUIVALENT PRODUCTS**

- A. Due to the nature and type of communications all products, including but not limited to faceplates, jacks, patch panels, and patch cords, shall be manufactured by Ortronics. All copper shall be manufactured by Berk-Tek. There will be no substitutions allowed.

### **2.2 CAMERA AREA OUTLETS**

- A. Camera area cables shall each be terminated at their designated camera area location in the connector types described in the subsections below. For cameras on the store floor, an approved mounting device - Cooper B-line Part number BU-2-4 painted white- shall be used to secure the SMB to the camera area. For each camera area outlet, include all required modular jacks. These connector assemblies shall snap into a faceplate.
- B. The IP Camera Outlet Assembly shall accommodate:
  - 1. A minimum of two (2) modular jacks
  - 2. Additional accommodations for specific locations as noted in the plans for optical fiber and/or additional copper cables as necessary
  - 3. A blank filler will be installed when extra ports are not used.
  - 4. A dust cap shall be provided on all unused modular jacks with the circuit number on the identifier strip.
  - 5. Multiple jacks that are identified in close proximity on the drawings MAY NOT be combined in a single assembly.
  - 6. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation. Prior to installation, the IP CCTV installing contractor shall submit the proposed configuration for each outlet assembly for review by the Owner.
  - 7. The modular jack shall incorporate printed label strip on the dust cap module for identifying the outlet. Printed labels shall be permanent and compliant with TIA/EIA 606-A standard specifications. Labels shall be printed using Ortronics label program or using a printer such as a Brady hand held printer. Hand printed labels shall not be accepted.
- C. Faceplates & Surface Mounted Boxes (SMBs): The faceplates and SMBs shall be:
  - 1. Ortronics TracJack style OR-404TJ2 – fog white for surface mount locations or OR-KSFP2 Fog White Single gang plastic faceplate for wall installation, holds two Keystone jacks as appropriate to fit the modular jack used
  - 2. UL listed and CSA certified.
  - 3. Constructed of high impact, ABS plastic UL 94V-0 construction (except where noted otherwise).
  - 4. Supplied in Fog White to match the color.

5. Supplied in single-gang or dual-gang form factor pending site specific installation conditions.
6. Provide easy access for adds, moves, and changes by front removal of jack modules.
7. Possess recessed designation windows to facilitate labeling and identification.
8. Include a clear plastic cover to protect labels in the designation window.
9. Have mounting screws located under recessed designation windows.
10. Comply with the current version of the TIA/EIA 606 work area labeling standard.
11. Allow for the UTP modules to be inverted in place for termination purposes.
12. Manufactured by an ISO 9001 registered company.
13. Include blanks where an open port is not used.

#### D. IP CCTV Jacks

1. IP CCTV jacks shall be 8-position modular jacks and shall be Category 5e or higher performance as defined by the references in this document including ANSI/TIA/EIA-568-B.1. All pair combinations must be considered, with the worst-case measurement being the basis for compliance. Modular jack performance shall be third-party verified by a nationally recognized independent testing laboratory.
2. The modular jack shall be the following:

Part Number	Description
OR-TJ5E00	Category 5e T568A/B TracJack 180 deg exit

3. Dust cover shall be used on each termination.

### 2.3 MODULAR PATCH PANELS

- A. The modular patch panel shall be one of the following for a NetClear<sup>GT</sup> Solution:

Part Number	Description
OR-PPCF5E6U24	Category 5e modular SNAP T568A/B, 24 port, High Density 1RU
OR-PPCF5E6U48	Category 5e modular SNAP T568A/B, 48 port, High Density 2RU

\*Note: All Patch Panels shall be “fully loaded” and include 8-position modular jacks for every port on the patch panels.

### 2.4 RACKS

Menards IT will furnish equipment racks at the NR locations shown on the drawings. The IP CCTV installing contractor will furnish and install additional equipment racking components, vertical cable management, and other miscellaneous equipment as needed to support the Horizontal Security Cabling System, Encoders, patch cords and other CCTV

components in the racks. The IP CCTV installing contractor shall provide waterfall cable management at the top of the rack for patch cords and for horizontal cables entering the rack channels for protection and to maintain proper bend radius and cable support. Wire management shall also be mounted above each patch panel and/or piece of equipment on the rack. Velcro cable ties shall be provided inside the rack channels to support the horizontal cable.

A. Free-Standing Racks

Free-standing rack shall:

1. Per Menard IT Specifications.

B. Wall Mounted Racks

Wall mount rack shall:

1. Per Menard IT Specifications.

2.5 HORIZONTAL DISTRIBUTION CABLE

All horizontal data Camera cable shall terminate on modular copper patch panels in their respective Network Rom as specified on the drawings.

A. 100 OHM ENHANCED CATEGORY 5E UNSHIELDED TWISTED PAIR (UTP) CABLE

1. Physical Characteristics:
  - a) Shall be riser rated and meet applicable requirements of ANSI/ICEA S-80-576. All 4 pairs must be insulated with F.E.P. No 2x2 or 3x1 construction will be allowed.
  - b) The diameter of the insulated conductor shall be .020 in. nominal.
  - c) Shall consist of (4) 24 AWG twisted pairs.
  - d) Shall be suitable for the environment in which they are to be installed.
  - e) The color coding of pairs shall be:

Pair 1	W-BL; BL
Pair 2	W-O; O
Pair 3	W-G; G
Pair 4	W-BR; BR

- f) The overall diameter of the cable shall be 0.165" (plenum) 0.187 inches. (riser)



- g) The ultimate breaking strength measured in accordance with ASTM D 4565 shall be 400 N minimum.
- h) Cable shall withstand a bend radius of 2 inch at -20 degrees Celsius without jacket or insulation cracking.
- i) Cable shall be third party verified to meet ANSI/TIA/EIA – 568-B.1, Category 5e Specifications
- j) Cable shall be third party certified to conform to UL 1666, CMR.

2. Transmission Characteristics:

- a) DC resistance of any conductor shall not exceed 9.4 Ohms per 100m max. at 20°C. Measured in accordance with ASTM D 4566.
- b) The mutual capacitance of any pair at 1 kHz for 100m of cable shall not exceed 4.4 nF .
- c) The capacitance unbalance to ground at 1 kHz of any pair shall not exceed 330 pF per 100m.
- a) Structural return loss swept @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	155	350	400
Min. SRL(dB)	25.5	25.5	25.5	25.5	24.4	22.7	21.5	20.4	18.4	18.1

- b) The maximum insertion @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) for a length of 100m (328ft) shall be less than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	200	300	350	400
<u>Max. Attenuation (dB)</u>	2.0	4.0	6.4	9.2	11.6	16.8	21.7	32.1	40.5	44.4	48.0

- c) The NEXT coupling loss @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) between pairs in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	200	300	350	400
NEXT Loss Worst Pair (dB)	70.3	61.3	55.3	50.8	47.9	43.4	40.3	35.8	33.2	32.2	31.3

- d) The PSNEXT loss @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) between pairs in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	200	300	350	400
PSNEXT Loss Worst Pair (dB)	68.3	59.3	53.3	48.8	45.9	41.4	38.3	33.8	33.8	30.2	29.3

- e) The ELFEXT loss @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) between pairs in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	16	31.25	62.5	100	200	250	350	400
ELFEXT Loss Worst Pair (dB)	66.8	54.7	46.8	42.7	36.9	30.8	26.8	20.7	18.8	15.9	14.7

- f) The PSELFEXT loss @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) between pairs in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	16.0	31.25	62.5	100	200	250	350	400
PS-ELFEXT Loss Worst Pair (dB)	63.8	51.7	43.8	39.7	33.9	27.8	23.8	17.7	15.8	12.9	11.7

- g) The return loss @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) between pairs in a cable for a length of 100m (328ft) shall meet or exceed the following

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	155	350	400
Min. RL (dB)	20.0	23.3	25.0	25.5	24.4	22.7	21.4	20.4	18.4	18.4

- h) The ACR @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	155	200
ACR Worst Pair (dB)	68.3	57.3	48.9	41.6	36.3	26.6	18.6	9.7	3.7

- i) The PS-ACR @ 20 degrees Celsius  $\pm$  3 degrees (68 degrees F  $\pm$  5.5 degrees) in a cable for a length of 100m (328ft) shall be greater than or equal to the following:

Frequency (MHz)	1.0	4.0	10.0	20.0	31.25	62.5	100	155	200
PS-ACR Worst Pair (dB)	66.3	55.3	46.9	39.6	34.3	24.6	16.6	7.7	1.7

1. Design Make:

- a) Berk-Tek LANmark-350 UTP (CMR Riser-PVC)

Color	Box	Reel
White	10032434	10032433
Blue	10032426	10032425
Gray	10032447	10032446
Yellow	10032419	10032418
Green	10032428	10032427
Red	10032491	10032490
Black	10032480	10033697

## 2.6 BACKBONE CABLE

- A. All Backbone cabling will be provided by Menard IT

## 2.7 FIBER OPTIC CONNECTORS

- A. All Fiber Optic Connectors will be provided by Menard IT.

## 2.8 COPPER CABLE PROTECTION UNITS

- A. All copper circuits shall be provided with protection between each building with an entrance cable protector panel. All building-to-building circuits shall be routed through this protector. The protector shall be connected with a #6 AWG copper bonding conductor between the protector ground lug and the TC ground point. Approved manufacturer of protection units is Porta Systems.

## 2.9 PATCH CORDS

The camera contractor shall provide factory terminated and tested UTP and optical fiber patch cords and equipment cords for the complete cabling system. The UTP patch cables shall meet the requirements of ANSI/TIA/EIA-568-B for patch cord testing.

- A. Copper (UTP) patch cords shall:

- 1. All patch cords (at both camera and panel locations) will be supplied by the CCTV Systems Integrator and installed during the installation of the cameras, network switches, and other electronics equipment.

## 2.10 GROUNDING AND BONDING

- A. The facility shall be equipped with a Telecommunications Bonding Backbone (TBB). This backbone shall be used to ground all telecommunications cable shields, equipment, racks, cabinets, raceways, and other associated hardware that has the potential to act as a current carrying conductor. The TBB shall be installed independent of the building's electrical and building ground and shall be designed in accordance with the recommendations contained in the ANSI/TIA/EIA-607 Telecommunications Bonding and Grounding Standard.
- B. NR1 shall be equipped with a telecommunications main grounding bus bar (TMGB). All other equipment room (NR2, NR3, and NR4) shall be provided with a telecommunications ground bus bar (TGB). The TMGB shall be connected to the building electrical entrance grounding facility. The intent of this system is to provide a grounding system that is equal in potential to the building electrical ground system. Therefore, ground loop current potential is minimized between telecommunications equipment and the electrical system to which it is attached.

- C. All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering or residing in the TR or ER shall be grounded to the respective TGB or TMGB using a minimum #6 AWG stranded copper bonding conductor and compression connectors.
- D. All wires used for telecommunications grounding purposes shall be identified with a green insulation. Non-insulated wires shall be identified at each termination point with a wrap of green tape. All cables and busbars shall be identified and labeled in accordance with the System Documentation Section of this specification.

## 2.11 FIRESTOP

- A. A firestop system is comprised of the item or items penetrating the fire rated structure, the opening in the structure and the materials and assembly of the materials used to seal the penetrated structure. Firestop systems comprise an effective block for fire, smoke, heat, vapor and pressurized water stream.
- B. All penetrations through fire-rated building structures (walls and floors) shall be sealed with an appropriate firestop system. This requirement applies to through penetrations (complete penetration) and membrane penetrations (through one side of a hollow fire rated structure). Any penetrating item i.e., riser slots and sleeves, cables, conduit, cable tray, and raceways, etc. shall be properly firestopped using Wiremold's FlameStopper FS Series.

## PART 3 - EXECUTION

### 3.1 CAMERA AREA OUTLETS

- A. Cables shall be coiled in a 12" radius loop at each surface-mount boxes coil without exceeding the manufacturers bend radius. No less than 60" of UTP slack shall be coiled at any SMB location.
- B. Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-B.1 document, manufacturer's recommendations and best industry practices.
- C. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- D. Bend radius of the twisted-pair cable in the termination area shall not be less than 4 times the outside diameter of the cable.
- E. The cable jacket shall be maintained to within 25mm (one inch) of the termination point.

- F. Jacks, unless otherwise noted in drawings, shall ONLY be used for the IP CCTV system. No jacks shall be used for voice or data.

### 3.2 HORIZONTAL DISTRIBUTION CABLE INSTALLATION

- A. Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
- B. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
- C. Cable raceways shall not be filled greater than the TIA/EIA-569-B maximum fill for the particular raceway type or 40%.
- D. Cables shall be installed in continuous lengths from origin to destination (no splices).
- E. The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- F. Where a J-hook or trapeze system is used to support cable bundles all horizontal cables shall be supported at a maximum of 48 to 60 inch (1.2 to 1.5 meter) intervals.
- G. All IP CCTV Horizontal distribution cables shall be bundled together with other IP CCTV cables only. The sharing of ceiling joist areas is strictly prohibited with other low voltage cables. A 4" separation between IP CCTV Horizontal distribution cables and other low voltage systems must be maintained at all times. At no point shall IP CCTV cable(s) be intermixed with other low-voltage cables unless specific PRIOR approval has been granted by Menard.
- H. Horizontal distribution cables shall be bundled in groups of no more than 50 cables. Cable bundle quantities in excess of 50 cables may cause deformation of the bottom cables within the bundle and degrade cable performance.
- I. Cable shall be installed above fire-sprinkler systems and shall not be attached to the system or any ancillary equipment or hardware. The cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
- J. Cables shall not be attached to ceiling grids, lighting fixture wires, or electrical conduits. Where support for horizontal cable is required, the contractor shall install appropriate carriers to support the cabling.

- K. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the Owner.
- L. Cables shall be identified by a self-adhesive label in accordance with the System Documentation Section of this specification and ANSI/TIA/EIA-606-A. The cable label shall be applied to the cable behind the faceplate/SMB on a section of cable that can be accessed by removing the cover plate.
- M. Unshielded twisted pair cable shall be installed so that there are no bends smaller than four times the cable outside diameter at any point in the run and at the termination field.
- N. Pulling tension on 4-pair UTP cables shall not exceed 25-lbf for a four-pair UTP cable.

### 3.3 HORIZONTAL CROSS CONNECT INSTALLATION

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-B standard, manufacturer's recommendations and best industry practices.
- B. Pair untwist at the termination shall not exceed 13 mm (0.5 inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained as close as possible to the termination point.
- F. Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

### 3.4 BACKBONE CABLE INSTALLATION (TYPE A STORES ONLY)

- A. Backbone cables shall be installed separately from horizontal distribution cables
- B. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.

- C. Where cables are housed in conduits, the backbone and horizontal cables shall be installed in separate conduits
- D. Where backbone cables and distribution cables are installed in a cable tray or wireway, backbone cables shall be installed first and bundled separately from the horizontal distribution cables.
- E. All backbone cables shall be securely fastened to the side wall of the NR on each floor.
- F. Backbone cables shall be outside plant rated. Only gel filled cables shall be used.

### 3.5 COPPER TERMINATION HARDWARE

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B standard, manufacturer's recommendations and best industry practice.
- B. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained to within 25 mm (one inch) of the termination point.
- F. Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

### 3.6 RECORDING RACKS

- A. At locations shown on the plans, security racks shall be securely attached to the concrete floor using a minimum 3/8" hardware or as required by local codes.
- B. Racks shall be placed with a maximum of 10 inch clearance from the back walls of the rack.
- C. All racks shall be grounded to the telecommunications ground bus bar in accordance with Section 2.11 of this document.



- D. Rack mount screws not used for installing patch panels and other hardware shall be bagged and left with the rack upon completion of the installation.

### 3.7 FIRESTOP SYSTEM

- A. All firestop systems shall be installed in accordance with the manufacturer's recommendations and shall be completely installed and available for inspection by the local inspection authorities prior to cable system acceptance.

### 3.8 GROUNDING SYSTEM

- A. The TBB shall be designed and/or approved by a qualified firm, licensed in the state that the work is to be performed. The TBB shall adhere to the recommendations of the TIA/EIA-607-A standard, and shall be installed in accordance with best industry practice.
- B. Installation and termination of the main bonding conductor to the building service entrance ground shall be performed by a licensed electrical contractor.

### 3.9 IDENTIFICATION AND LABELING

- A. The contractor shall strictly follow the Menard labeling system for the IP CCTV cable installation. The labeling system shall clearly identify all components of the system: racks, cables, panels and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.
- B. All label printing will be machine generated by Ortronics labeling program using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on, or in, the space provided on the device.

### 3.10 TESTING AND ACCEPTANCE

- A. General
  - 1. All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA/EIA-568-B;

marginal passes (\*PASS) are not acceptable. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.

2. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards, and best industry practice. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of Menard Store Security for clarification and resolution.

#### B. Copper Channel Testing

1. All twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below. Additional testing is required to verify Category performance. Horizontal cabling shall be tested using a level IIe or better test unit for category 5e compliance.
2. Continuity - Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
3. Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the ANSI/TIA/EIA-568-B Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.

#### 4. Category 5e Performance

Follow the Standards requirements established in:

- ANSI/TIA/EIA-568-B .1

A level IIe or better test unit is required to verify category 5e performance.

The basic tests required are:

- Wire Map
- Length
- Attenuation
- NEXT (Near end crosstalk)
- Return Loss
- ELFEXT Loss
- Propagation Delay
- Delay skew
- PSNEXT (Power sum near-end crosstalk loss)
- PSELFEXT (Power sum equal level far-end crosstalk loss)

#### 5. Category 5e Performance

Shall meet the channel requirements outlined below for a 100-meter, 4-connector channel.

Frequency (MHz)	Maximum Insertion Loss (dB)	Minimum NEXT (dB)	Minimum PSNEXT (dB)	Minimum ELFEXT (dB)	Minimum PSELFEXT (dB)	Minimum Return Loss (dB)
1.0	2.2	66.0	63.0	63.4	60.4	20.0
4.0	4.5	59.6	56.9	51.3	48.4	20.0
10.0	7.1	53.0	50.1	43.4	40.4	20.0
20.0	10.2	48.0	45.0	37.4	34.4	20.0
31.25	12.9	44.7	41.7	33.5	30.5	18.1
62.5	18.6	39.6	36.6	27.5	24.5	15.1
100.0	24.0	36.1	33.1	23.4	20.4	13.0

#### C. Category 5e Aggregate Store Level Performance

1. In addition to the individual test results, aggregated performance and test results shall be provided for each store. The aggregated performance of the store shall meet the following performance levels:

Required Aggregate Test Results		
Test	Average	Std. Dev.
NEXT Headroom (Margin)	8.00 >	< 1.30
Return Loss	<9.75	< 1.75
PS NEXT	<10.25	< 1.50
ACR-N	<10.75	< 1.75
PS ACR-N	<12.00	< 1.75
ACR-F	<16.00	< 4.75
PS-ACR-F	<18.00	< 4.50

### 3.11 SYSTEM DOCUMENTATION

- A. Upon completion of the installation, the IP CCTV cabling contractor shall provide full documentation to Menards for approval. Documentation shall include the items detailed in the sub-sections below.
- B. Documentation shall be submitted within ten (10) working days of the completion of the testing phase. This is inclusive of all test result and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 working days of the completion of the testing phase and prior to store opening.
- C. Menards may request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests shall be a repeat of those defined above. If findings contradict the documentation submitted by the IP CCTV cabling contractor, additional testing can be requested to the extent determined necessary by Menard, including a 100% re-test. This re-test shall be at no additional cost to the Owner.

### 3.12 TEST RESULTS

- A. Test documentation shall be provided on CD within three weeks after the completion of the project and prior to store opening. The CD shall be clearly marked on the outside front cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). The results shall include a record of test frequencies, cable type, conductor pair and cable (or outlet) I.D., measurement direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, an annual calibration cycle is anticipated on all test equipment used for this installation. The test document shall detail the

test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.

- B. The field test equipment shall meet the requirements of ANSI/TIA/EIA-568-B including applicable TSB's and amendments. The appropriate level IIe tester shall be used to verify Category 5e cabling systems.
- C. Printouts generated for each cable by the wire (or fiber) test instrument shall be submitted as part of the documentation package. The IP CCTV cabling contractor must furnish this information in electronic form (CD-ROM).
- D. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.

### 3.13 AS-BUILT DRAWINGS

- A. The drawings are to include cable routes and IP CCTV camera outlet locations. Outlet locations shall be identified by their sequential number as defined elsewhere in this document and in the IP CCTV installation and documentation requirements. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. Menard will provide floor plans in paper and electronic (DWG, AutoCAD rel. 14) formats on which as-built construction information can be added. These documents will be modified accordingly by the IP CCTV cabling contractor to denote as-built information as defined above and returned to the Owner.
- B. The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and electronic (AutoCAD rel. 14) form.

## **PART 4 – WARRANTY AND SERVICES**

### **4.1 WARRANTY**

- A. An Extended Product Warranty shall be provided which warrants functionality of all components used in the system for 2 years from the date the store opens. The Extended Product Warranty shall warrant the installed horizontal and/or backbone copper associated with the IP CCTV system.
- B. The IP CCTV installing contractor shall provide Application Assurance Warranty that shall cover the failure of the wiring system to support the applications that are designed for the link/channel specifications of TIA/EIA 568B. These applications include, but are not limited to, 10BASE-T, 100BASE-T, 1000BASE-T, and 155 Mb/s ATM.
- C. The contractor shall provide a parts and labor warranty on the installation of the IP CCTV cabling where the contractor shall replace any cable at no additional cost to the Menard.
- D. The IP CCTV cabling contractor shall respond and repair any and all warranty requests in less than seven (7) days after being notified of an issue with the IP CCTV cabling system.

### **4.2 CONTINUING MAINTENANCE**

- A. The IP CCTV cabling contractor shall furnish an hourly rate with the proposal submittal, which shall be valid for a period of two years from the date of acceptance. This rate will be used when IP CCTV cabling support is required to affect moves, adds, and changes to the system (MACs).

### **4.3 FINAL ACCEPTANCE & SYSTEM CERTIFICATION**

- A. Completion of the installation, in-progress and final inspections, receipt of the test and as-built documentation, and successful performance of the cabling system for a two-week period after the Grand Opening of a store will constitute acceptance of the system. Menard will deem the work complete (and issue payment) upon successful completion of the installation, formal inspection of all work, **AND** the proven performance of the horizontal cabling system for a period of two-weeks **AFTER** the Grand Opening of

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