

Division One Specifications

Cover Sheet and Instructions

APPROVED DOCUMENT – This document is approved by the Office of the President and Office of the General Counsel for use by the Facility and is available on electronic media.

PURPOSE OF DOCUMENT:	Serves as written descriptions of the materials and processes for construction and describe the technical requirements for construction. Division 1, General Requirements, is provided as a standard set for Facilities to use as a base document.		
CROSS-REFERENCE TO FACILITIES MANUAL:	Long Form Contract.		
CONTENTS:	Specifications, Division 1, General Requirements (standard set of sections 01325 and 01630)		
FOR USE WITH:	CM/Contractor Agreement		
COMPLETED BY:	<input checked="" type="checkbox"/> Filling in	<input checked="" type="checkbox"/> Adding Text	<input type="checkbox"/> No Data Required
ITS USE IS:	<input checked="" type="checkbox"/> Required	<input type="checkbox"/> Optional	

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NOTE: With the exception of Section 01325 “Schedules” and Section 01630 “Product Options and Substitutions”, all Division 1 Specifications are the same as in the Long Form Contract.

Completion Instructions:

None

Modifications and Additions:

None

Comments:

None

Specifications - Section 01325 - Schedules

Cover Sheet and Instructions

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PURPOSE OF DOCUMENT:	Serves as written descriptions of the requirements related to scheduling of the Work.		
CROSS-REFERENCE TO FACILITIES MANUAL:	None		
CONTENTS:	Specifications, Section 01325		
FOR USE WITH:	CM/Contractor Agreement		
COMPLETED BY:	<input checked="" type="checkbox"/> Filling in	<input checked="" type="checkbox"/> Adding Text	<input type="checkbox"/> No Data Required
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Completion Instructions:

- Notes, suggested text, instructions and other information is formatted using the following methods:
 - Hidden text within brackets. Read the material within the brackets and take the appropriate action (usually inserting text or selecting from a choice of texts.) When printing this document, the default print property will not print the hidden text.
 - Coded instruction within brackets. **{This is an example of the format.}** The instructions and shading will disappear when the required information is typed.
 - Suggested text is shaded in gray without brackets (see Modification and Additions below.)

Modifications and Additions:

None

Comments:

None

SECTION 01325 - SCHEDULES**PART 1 - GENERAL****1.1 DEFINITIONS****A. PRELIMINARY CONTRACT SCHEDULE**

1. The schedule submitted and developed by CM/Contractor's prior to bidding any Bid Packages during Phase 1 which represents all Work for the Project. It is intended that the Preliminary Contract Schedule once received, reviewed and approved by University, would become the Contract Schedule. The Preliminary Contract Schedule shall reflect the requirements and information provided in the Project Schedule Exhibit.

B. CONTRACT SCHEDULE

1. The schedule submitted by CM/Contractor representing the sole work plan for accomplishing the Work. Once the submitted Preliminary Contract Schedule is reviewed and accepted by University, it shall be the base line schedule document that forms the basis of all measurements of Contract Time in the Contract Documents. The Contract Schedule may not be modified other than as called for in this section. The Contract Schedule shall be incorporated with all Bid Packages.

C. UPDATED CONTRACT SCHEDULE

1. A periodically submitted schedule reflecting the progress of the Work for all Work Activities including 1) the portion of the Work Activities comprising the As-Built Schedule and 2) that portion of the Work Activities which are incomplete or not yet commenced.

D. RECOVERY SCHEDULE

1. If requested by the University, a schedule produced by the CM/Contractor upon receipt by University of an updated Contract Schedule forecasting the CM/Contractor will not finish the Work within the tolerances of the Contract Time.

E. AS-BUILT SCHEDULE

1. The portion of the updated Contract Schedule maintained by the CM/Contractor that records the actual work activities, their durations, and their dependencies to all other work activities.

F. FLOAT/NEGATIVE FLOAT

1. Float for any Work Activity, will be calculated as the difference in Days between the Latest Finish and its Earliest Finish. Any such calculated float, which results in a "negative" number, is considered Negative Float.

G. CONSTRAINED WORK ACTIVITY

1. Shall be any earliest start or finish; or latest start or finish date of a Work Activity or Milestone date that is set and is not calculated in the CPM forward or backward pass calculation. No work activities or milestones on the Contract Schedule, or any other submitted schedule shall utilize Constrained Work Activities, unless expressly approved in writing by University. The only exception is that the schedule start date may be set to reflect the Phase 1 Notice to Proceed date.

H. WORK ACTIVITY

1. Any individual task of work shown on a submitted schedule which requires time and resources (manpower, equipment, materials, etc.) to be completed in a continuous operation.

I. MILESTONE

1. An element on the schedule that reflects the planned point in time for the start or finish of one or more Work Activities.

J. LOOK AHEAD SCHEDULE

1. A schedule based on the updated Contract Schedule which shows the current portion of the schedule. The current portion of the schedule is typically 3 weeks both before and beyond the date the schedule is presented, or as reasonably requested by the University's Representative.

K. CHANGE ORDER SCHEDULE

1. A schedule submitted anytime there is a request by the CM/Contractor for the adjustment in the Contract Time. Change Order Schedule shall be based on the applicable portion of the Contract Schedule, which is claimed to be impacted, necessitating an extension of the Contract Time. All modifications to the Contract Schedule Work Activities, and their associated information (including duration, logic, manpower, etc) shall be clearly identified, but the Contract Schedule information shall be left for clear comparison. Change Order Schedule shall have starting and ending Work Activities or Milestones from the Contract Schedule which are unchanged, (same logic constraints, duration, and resources) and shall clearly identify them.

L. CRITICAL WORK ACTIVITY

1. Work Activity which, if delayed, will delay the scheduled completion of the Work (i.e. Work Activities which comprise the path of least total float). All other Work Activities are defined as non-critical and considered to have float.

M. CONTRACT TIME

1. For the purposes of this specification only, it will be understood that Contract Time represents both the Contract Time allowed for Phase 1 as may be modified by Change Order, and the Option Time allowed for Phase 2 as may be modified by Change Order. If the University exercises its Option, Contract Time will have the same meaning as defined in the Agreement.

1.2 REQUIREMENTS

A. GENERAL REQUIREMENTS

1. The CM/Contractor's personnel which prepares the schedules called for by this section shall be qualified and experienced in Critical Path Method (CPM) scheduling with the specified products of this section; and capable of fulfilling the requirements of this section. The CM/Contractor shall hire a qualified consultant to prepare and maintain the Contract Schedule, or if qualified, the CM/Contractor may perform these services with his own organization. CM/Contractor shall provide documentation of scheduling experience for the University's Representatives approval.
2. The Contract Schedule shall be used by the University in review of request by the CM/Contractor for modification of the Contract Time in accordance with the Contract Documents. Responsibility for developing the Contract Schedule and monitoring of actual progress in relation to the Contract Time rest solely with the CM/Contractor. Failure of the CM/Contractor to schedule any element of the Work, or any inaccuracy in the Contract Schedule, regardless if the University has reviewed and approved such schedule, will not relieve CM/Contractor from its obligation to complete the Work within the Contract Time. The CM/Contractor warrants that the Contract Schedule is the CM/Contractor's committed work plan to complete the Work within the Contract Time, and that the CM/Contractor assumes full responsibility for the execution of the Work. The University's review of and response to schedule submissions shall not be construed as relieving the CM/Contractor of its complete and exclusive control over the means, methods, sequences and techniques for execution of the Work.
3. Any submitted schedule showing negative float will be rejected by the University.
4. All cost for preparing, printing, mailing of any schedules called for by this section, or the Contract Documents shall be part of the Contract Sum.
5. All requirements of the Contract Schedule shall also apply to the Preliminary Contract Schedule, the Recovery Schedule, updated Contract Schedule, and Fragnet Schedule.
6. Acceptance of the Contract Schedule will be a condition precedent to making any progress payment for Work performed. All Work Activities shall be of sufficient detail to provide identification of all components utilized in executing, monitoring and evaluating progress of the Work.
7. Work Activity descriptions shall briefly cover the scope of work indicated. Work Activities shall be discrete items of Work that must be accomplished under the Contract and constitute definable, recognizable entities within the Project. All Work Activities shall have defined duration. All durations shall be in multiples of working days.
8. All Work Activities shall have appropriate durations allowing measurement of their progress. In general, if a reasonable estimate of progress against a proposed Work Activity cannot be reasonably measured, a Work Activity shall be broken into multiple Work Activities such that monitoring of actual progress versus planned progress can be ascertained. All Work Activities shall be of sufficient detail to provide identification of all components utilized in executing, monitoring and evaluating progress of the Work.

9. Work Activities shall have duration of 14 working days or less. University's Representative may approve use of longer Work Activity durations on non-construction activities, including the procurement and fabrication of materials and equipment, and review period for submittals.
10. Work Activities shall include all Design Work, Phase 1 and Construction Work deliverables, including all submittals called for in the Scope of Work; and shall include the submittal and approval of permit applications (as necessary), samples of materials, shop drawings, working drawings, testing and inspections, safety and security plans, worksite control plans, utility company point-of connection installations and applications. In addition, Work Activities shall be included for procurement of materials and equipment potentially impacting the critical path, fabrication of special materials and equipment and their installation and testing, and delivery of University-furnished items. Work Activities of the University, that may become Critical Work Activities of the Work shall be reflected, as well as Work Activities by utilities and other similarly involved third parties associated with the Work. The Contract Schedule shall include Work Activities or Milestones, but not be limited to the following: all design and pre-construction activities; specific Milestones for the start and completion for each stage of the Design Work; specific Milestones for when State and State agency information and reviews are required; submittal dates; production Milestones; early purchasing; key deliverables in Scope of Work; start of tenant programming (as applicable); Milestone for each Contract Phase; mobilization of personnel and equipment when required; sequence of operations; commissioning Work Activities; procurement of materials and equipment; and all contract close Work Activities such as Punch List and Operation Manuals.
11. The Critical Work Activities shall be identified, including critical paths for Contract interim and final completion Milestone dates.
12. All Work Activities shall be coded as called for in the Execution section. All Work Activities shall be coded at a minimum to reflect which Contract Phase they are associated with. Any Work Activity that may be involved in multiple Phases shall be broken into separate Work Activities to reflect each Phase such work occurs in, allowing Work Activities to be grouped by Contract Phase.
13. CM/Contractor shall not sequester float through strategies including extending Work Activity duration estimates to consume available float, using preferential logic, using extensive or insufficient crew/resource loading, use of float suppression techniques, special lead/lag logic constraints (unless specifically requested in writing to University's Representative and approved). Use of float time disclosed or implied by the use of alternate float suppression techniques shall not be for the exclusive use or benefit of either University or CM/Contractor. It is acknowledged that University-caused or CM/Contractor-caused time savings to Work Activities on or near the critical path will increase float. Such increase in float shall not be for the exclusive use or benefit of either University or CM/Contractor.
14. For all schedule submittals other than Look Ahead Schedules (paper copy only), CM/Contractor shall submit both paper copy as instructed by University's Representative; and provide a electronic file copy on 3.5 inch, 1.44MB floppy disk clearly labeled as to submittal description and date; and containing an exact copy of paper submittal. All file information shall be written to disk via utilizing the Primavera Project Planner back-up utility tools.

PART 2 - PRODUCTS

2.1 SCHEDULING SOFTWARE

- A. All Preliminary Contract Schedule, the Recovery Schedule, update Contract Schedule, and Fragnet Schedule shall be prepared utilizing Primavera SureTrak Version (latest version for Windows), or Primavera Project Planner (latest version for Windows), or equal (no known equal) which is 100% compatible with Primavera.

PART 3 - EXECUTION

3.1 SUBMITTALS

A. PROPOSED CONTRACT SCHEDULE

1. The initial Preliminary Contract Schedule shall be submitted within 30 days after of the Phase 1 Notice to Proceed; and shall be based on durations provided in the Bid Documents and Project Schedule Exhibit.
 - a. The final submittal of the Preliminary Contract Schedule shall be submitted in time to allow University review and approval 45 days prior to required date for the University it exercise its Option for Phase 2 and 30 days prior to the desired date to release the first Bid Package for bidding.
 - b. At any time the University's Representative determines that the CM/Contractor is not currently following an acceptable Contract Schedule, the CM/Contractor shall submit within 10 days of notification by the University's Representative a updated Contract Schedule.

B. MONTHLY STATUS REPORT/UPDATED CONTRACT SCHEDULE

1. CM/Contractor shall submit an updated Contract Schedule with a draft Monthly Status Report on the 25th day of each month, along with Variance Report and Status Narrative (described below).
2. CM/Contractor shall review the draft Monthly Status Report with the University's Representative upon submittal, the purpose of this joint review is to reach agreement on the job status shown in the draft Monthly Status Report.
3. Variance Report shall be submitted based on the updated Contract Schedule. The report shall include a description of all Work Activities completed during the preceding month, a description of progress made, and planned Work Activities listed as started but not completed on the updated Contract Schedule, and shall report all Work Activities that have been delayed 5 or more working days. The format of this report shall include:
 - a. Work Activity code and description
 - b. Scheduled early start/finish dates
 - c. Current anticipated early start/finish dates
 - d. Working days remaining to complete unfinished Work Activities
 - e. Percentage complete of started Work Activities

- f. **Total float for each Work Activity**
4. Status Narrative Report shall identify the Work actually completed and reflects the progress of all Work Activities within 10 working days of the critical path. The Status Narrative Report shall indicate forecasted progress in relation to interim and/or final completion Milestone dates as specified in the Contract Documents, in terms of calendar days behind or ahead. Specific requirements of the Status Narrative Report are as follows:
- a. **Actual completion dates for Work Activities completed during the report period**
- b. **Actual start dates for Work Activities started during the report period**
- c. **Estimated start dates for Work Activities scheduled to start during the month following the report period.**
- d. **Changes in the duration(s) of any Work Activities and/or logic changes to Work Activities, or Work Activities done in a different sequence from the Contract Schedule.**
- e. **Identification of the current critical path(s) to the interim and/or final completion milestones.**
- f. **Work Activities proposed to be added to the Contract Schedule.**
- g. **Identification of any University approved Fragnet Schedule the CM/Contractor proposes to incorporate into the Contract Schedule.**
- h. **Shall identify any variances or changes in the direct labor hour allocation, the cause, and the Work Activities affected, and shall provide an explanation of proposed corrective action to meet the planned allocation called for in the Contract Schedule.**
2. Within 5 days of meeting with University's Representative to review draft Monthly Status Report, CM/Contractor shall submit Monthly Status Report reflecting any agreed modifications. Any revisions agreed to by University's Representative resulting in changes to the propose work plan of the CM/Contractor to the Contract Schedule, shall make the revised updated Contract Schedule a Preliminary Contract Schedule, and upon review and approval shall become the Contract Schedule.

C. RECOVERY SCHEDULE

1. If at any time it is determined by the University's Representative that the progress of the Work, based on the Contract Schedule, reflects progress that would complete any interim and/or final Contract Milestone dates later than called for in the Contract Documents, the University may require the CM/Contractor shall prepare and submit a Recovery Schedule within 14 days from notification from the University's Representative, or such shorter time period as may be reasonably requested by University's Representative. The Recovery Schedule shall address a new work plan to accomplish the Work within the Contract Time, and shall include and identify additional concurrent operations, logic and sequence changes, additional manpower, additional shifts, or overtime work.

D. FRAGNET SCHEDULE

1. At any time that the CM/Contractor requests an extension of the Contract Time, in addition to other requirements in the Contract Documents, the CM/Contractor shall submit a Fragnet Schedule.
2. All other requirements of Contract Schedule shall apply to a Fragnet Schedule.

E. LOOK AHEAD SCHEDULES

1. Shall be submitted at each progress meeting of the Work as outlined in the Scope of Work or as reasonably requested by the University's Representative.
2. Look Ahead Schedules shall be a time scaled bar chart based on the updated Contract Schedule showing the comparison planned work and actual work, and indicating the percentage complete for all Work Activities schedule **within 4 weeks (or as requested by University's Representative) of both before and after the date of report/meeting.**

F. AS-BUILT SCHEDULE

1. The As-Built schedule shall be submitted with the Monthly Status Report; and shall reflect the information the CM/Contractor and University's Representative have agreed has occurred as actual as-built sequence of the Work.

G. SCHEDULE UPDATING

1. CM/Contractor shall update and review the updated Contract Schedule on a weekly basis.

3.2 SCHEDULE FORMAT/DATA

A. WORK ACTIVITY CODING

1. The following activity codes and structure sequence shall be applied at a minimum for all Work Activities and Milestones; additional codes may be added/utilized by the CM/Contractor for its requirements:

- a. Contract Phase
- b. Work/Bid Package
- c. Design Package
- d. Specification Group
- e. Responsibility/Subcontractor
{Include University, University's Representative, and third parties}
- f. Project Area
- g. Floor Area Change Order number

2. Project Phase

3. Cost Breakdown item

B. RESOURCE LOADING

1. All Work Activities involving labor or major equipment shall be resource loaded indicating what is required to accomplish the Work Activity. Labor shall be defined to show crew type and size, so that total manpower is identified. Resource Loading information shall be updated after each Bid Package for University's review and approval.

C. COST LOADING

1. Provide unit cost for all resources identified in the Resource Loading; and provide cost for materials for the Work Activity. Any other cost should be added in accordance with the Cost Breakdown on a prorated basis such that when the schedule is grouped and totaled based on the Cost Breakdown that they match in cost per Cost Breakdown category. Cost Loading information shall be updated after each Bid Package for University's review and approval.

D. SCHEDULE CALENDARS

1. All holidays and non-work periods shall be identified in the Contract Schedule's calendar. Two calendars shall be used; a defined work week; and a 24 – hour, 7 – day per week (for such continuous events like concrete curing, etc.).

E. REPORT FORMAT/DISTRIBUTION

1. The University's Representative shall provide format/distribution requirements for printing the Contract Schedule, Preliminary Contract Schedule, the Recovery Schedule, updated Contract Schedule, Fagnet Schedule, and As-Built Schedule; which the University's Representative may revise during the Project, but will not change the information requirements contained herein.

END OF SECTION 01325

Specifications - Section 01630 - Product Options and Substitutions

Cover Sheet and Instructions

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CROSS-REFERENCE TO FACILITIES MANUAL:	None		
CONTENTS:	Specifications, Section 01630		
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Completion Instructions:

None

Modifications and Additions:

None

Comments:

None

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

1.1 General Provisions Regarding Specification Of Products, Material or Equipment By Brand Or Trade Name.

1.1.1 Products, material or equipment specified by both brand or trade name and model number are approved for use, provided that CM/Contractor complies with all Contract requirements. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment can be used without modification, to meet the requirements of the plans and specifications; CM/Contractor shall, at its sole cost, modify such products, material, or equipment so that they comply with all requirements of the plans and specifications.

1.1.2 The first-named product, material or equipment specified by brand or trade name and model number is the basis for the Project design and the use of any item other than the first-named one may require modifications of that design. If CM/Contractor uses any product, material or equipment other than the first-named one, CM/Contractor shall, at its sole cost:

.1 Make all revisions and modifications to the design and construction of the Work necessitated by the use the product, material or equipment.

.2 Be responsible for all costs of any changes resulting from the use of the product, material or equipment including without limitation, costs or changes which affect other parts of the Work, the work of Separate Contractors, or any other property or operations of the University.

1.1.3. When a product, material or equipment specified by brand or trade name is followed by the words "or equal," a substitution may be permitted if the substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and if the substitution complies with all other requirements of the plans and specifications.

1.1.4 A product, material or equipment specified by brand or trade name followed by the words "or equal, no known equal," signifies that University does not have sufficient knowledge to specify a product, material or equipment, other than the one specified by brand or trade name, that is suitable for use on the Project. The use of the words "no known equal" is not intended to discourage substitution requests in accordance with the requirements specified herein.

1.1.5 When catalog numbers and specific brands or trade names not followed by the designation "or equal" are used in conjunction with a product, material or equipment required by the specifications, substitutions will not be allowed and the named product, material or equipment must be used.

1.1.6 Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment is available; CM/Contractor should confirm, prior to submitting its Bid, the availability of any product, material or equipment specified by brand or trade name and model number.

1.2. Special Requirements For Products, Material Or Equipment, Other Than The First-Named Product, Material Or Equipment, Specified By Both Brand Or Trade Name And Model Number.

1.2.1 In addition to complying with all other submittal requirements of the Contract, submit within 70 days after the date of commencement specified in the Notice to Proceed for Phase 1, for review and approval by the University's Representative, CM/Contractor prepared specifications

and drawings, including design and engineering calculations, prepared by an appropriate licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment. If no revisions or modifications are necessary, submit within 70 days after the date of commencement specified in the Notice to Proceed for Phase 1, a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. CM/Contractor shall utilize the first-named product, material or equipment if CM/Contractor fails to make the appropriate required submittal pursuant to this paragraph within the 70-day period.

1.2.2 A product, material or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number may be used if no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. If such revisions or modifications are necessary, the product, material or equipment may be used only if the revisions or modifications are approved in writing by the University's Representative. CM/Contractor has the burden of demonstrating, through the procedures specified herein, that any such revisions or modifications will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, CM/Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility or appearance of the Project or any portion of the Project.

1.3. Special Requirements For Substitutions.

1.3.1 In addition to complying with all other submittal requirements of the Contract, submit written data demonstrating that the proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and otherwise complies with all requirements of the plans and specifications, including:

- .1 Complete technical data including drawings, performance specifications, samples, and test reports of the article proposed for substitution.
- .2 Statement by CM/Contractor that the proposed substitution is in full compliance with the requirements of the Contract Documents and Applicable Code Requirements.
- .3 List of Subcontractors, if any, that may be affected by the substitution.
- .4 CM/Contractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriately licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the substitution. If no revisions or modifications are necessary, submit a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment.

1.3.2 At the request of and within the timeframes specified by the University's Representative:

- .1 Submit samples as deemed necessary by the University's Representative to evaluate the proposed substitution.
- .2 Submit proposed substitution to tests deemed necessary by the University's Representative to evaluate the proposed substitution. Such tests shall be made by an independent Testing Laboratory and at the sole expense of CM/Contractor, after review and approval of the test procedures by University's Representative. If re-testing is deemed necessary by the University's Representative to evaluate the proposed

substitution, such re-testing shall be made by an independent Testing Laboratory at the sole expense of the CM/Contractor.

.3 Provide any additional information deemed necessary by the University's Representative to evaluate the proposed substitution.

1.3.3 If University's Representative, in reviewing a proposed substitution, requires revisions or corrections to be made to previously accepted shop drawings and supplemental supporting data to be resubmitted, CM/Contractor shall do so within the time period specified by the University's Representative. A proposed substitution may be rejected if CM/Contractor fails to submit such revisions, corrections, or supplemental supporting data within the specified time period.

1.3.4 Except for products, material or equipment designated in the Bidding Documents for evaluation of substitutions prior to award, requests for substitution, including the data required by Paragraph 1.3.1, must be submitted to the University's Representative not later than 35 days after the date of commencement specified in the Notice to Proceed for Phase 1. No requests for substitutions of products, material or equipment subject to the 35-day deadline shall be considered unless the request and supporting data is submitted on or before the deadline, except those deemed, in University's Representative's sole opinion, to be necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.

1.3.5 If a product, material or equipment is designated in the Bidding Documents for evaluation of substitutions prior to award, then a request for substitution of the product, material or equipment, including the data required by Paragraph 1.3.1, must be submitted by the deadline specified in the Bidding Documents. Because of time constraints, only one submittal will be allowed for each such substitution request. Requests for substitutions of products, material or equipment designated for evaluation prior to award may not be made after the deadline specified in the Bidding Documents, and such requests shall not be considered unless the request and supporting data is submitted on or before the deadline specified in the Bidding Documents. Notwithstanding the forgoing, the University may consider, after award of the Contract, requests for substitution of a product, material or equipment designated for evaluation prior to award where, in University's Representative's sole opinion, a substitution is necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.

1.3.6 In reviewing the supporting data submitted for substitutions, University's Representative will use, for purposes of comparison, all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Specifications. If more than 2 submissions of supporting data are required, the cost of reviewing the additional supporting data shall be at CM/Contractor's expense.

1.3.7 CM/Contractor has the burden of demonstrating, through the procedures specified herein, that its proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and complies with all other requirements of the plans and specifications. If revisions or modifications to the design or construction of the work are necessitated by the use of the substitution, CM/Contractor also has the burden of demonstrating, through the procedures specified herein, that the use of the substitution will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project.

1.3.8 The University's Representative may refuse to approve any requested substitution where, in the reasonable opinion of the University's Representative, CM/Contractor has failed to

demonstrate, through the procedures specified herein, that the proposed substitution is equal to, or superior to, the first-named product, material or equipment, in quality, utility and appearance and that the proposed substitution complies with all other requirements of the plans and specifications.

1.3.9 University's Representative may reject any substitution not proposed in the manner and within the time limits prescribed herein.

1.3.10 Substitutions are not allowed unless approved in writing by the University's Representative. Any such approval shall not relieve CM/Contractor from the requirements of the Contract Documents.

1.3.11 The 35-day and 70-day submittal periods do not excuse CM/Contractor from completing the Work within the Contract Time or excuse CM/Contractor from paying liquidated damages if Final Completion is delayed.

1.3.12 If revisions or modifications to the design or construction of the Work are necessitated by the use of a substitution, the substitution may be used only if the revisions and modifications are approved in writing by the University's Representative. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, CM/Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility and appearance of the Project or any portion of the Project.

1.3.13. If a substitution request is finally rejected by the University Representative, CM/Contractor shall furnish and install:

- .1 the first-named product, material, or equipment; or
- .2 a product, material, or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number, provided CM/Contractor complies with the submittal requirements (including deadlines) of specification section 01630-1.2

1.4. Special Requirements for Bid Packages

1.4.1 CM/Contractor understands and agrees that a Subcontractor may submit to CM/Contractor a request for product substitution within the specified time after the Notice to Proceed for its Bid Package(s). Subject to approval of University's Representative, CM/Contractor may elect to require Subcontractor to submit product substitution requests prior to Bid Deadline for a Bid Package. If CM/Contractor elects to require any submittal of such product substitution requests prior to the Bid Deadline for a Bid Package, CM/Contractor shall:

- .1 Insert in the Contract Schedule for the Bid Package a time for review of such product substitution request by University's Representative. Such time for review shall not be less than 10 days;
- .2 Insert appropriate language in the Advertisement for Bids for the Bid Package; and
- .3 Establish a deadline for submittal of product substitution requests in the Bidding Documents for the Bid Package.

1.4.2 CM/Contractor shall include the following provisions in each Bid Package and CM/Contractor shall insert in these provisions deadlines that allow sufficient time for transmittal of submittals to University's Representative within the required 35-day and 70-day submittal periods:

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

1.4.2.1 General Provisions Regarding Specification Of Products, Material or Equipment By Brand Or Trade Name.

1.4.2.1.1 Products, material or equipment specified by both brand or trade name and model number are approved for use, provided that Subcontractor complies with all Contract requirements. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment can be used without modification, to meet the requirements of the plans and specifications; Subcontractor shall, at its sole cost, modify such products, material, or equipment so that they comply with all requirements of the plans and specifications.

1.4.2.1.2 The first-named product, material or equipment specified by brand or trade name and model number is the basis for the Project design and the use of any item other than the first-named one may require modifications of that design. If Subcontractor uses any product, material or equipment other than the first-named one, Subcontractor shall, at its sole cost:

.1 Make all revisions and modifications to the design and construction of the Work necessitated by the use the product, material or equipment.

.2 Be responsible for all costs of any changes resulting from the use of the product, material or equipment including without limitation, costs or changes which affect other parts of the Work, the work of Separate Contractors, or any other property or operations of the University.

1.4.2.1.3 When a product, material or equipment specified by brand or trade name is followed by the words "or equal," a substitution may be permitted if the substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and if the substitution complies with all other requirements of the plans and specifications.

1.4.2.1.4 A product, material or equipment specified by brand or trade name followed by the words "or equal, no known equal," signifies that University does not have sufficient knowledge to specify a product, material or equipment, other than the one specified by brand or trade name, that is suitable for use on the Project. The use of the words "no known equal" is not intended to discourage substitution requests in accordance with the requirements specified herein.

1.4.2.1.5 When catalog numbers and specific brands or trade names not followed by the designation "or equal" are used in conjunction with a product, material or equipment required by the specifications, substitutions will not be allowed and the named product, material or equipment must be used.

1.4.2.1.6 Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment is available; Subcontractor should confirm, prior to submitting its Bid, the availability of any product, material or equipment specified by brand or trade name and model number.

1.4.2.2. Special Requirements For Products, Material Or Equipment, Other Than The First-Named Product, Material Or Equipment, Specified By Both Brand Or Trade Name And Model Number.

1.4.2.2.1 In addition to complying with all other submittal requirements of the Contract, submit to CM/Contractor within {65} days after the date of commencement specified in the Notice to Proceed, for review and approval by the University's Representative, Subcontractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriate licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment. If no revisions or modifications are necessary, submit within {65} days after the date of commencement specified in the Notice to Proceed, a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. Subcontractor shall utilize the first-named product, material or equipment if Subcontractor fails to make the appropriate required submittal pursuant to this paragraph within the {65}-day period.

1.4.2.2.2 A product, material or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number may be used if no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. If such revisions or modifications are necessary, the product, material or equipment may be used only if the revisions or modifications are approved in writing by the University's Representative. Subcontractor has the burden of demonstrating, through the procedures specified herein, that any such revisions or modifications will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Subcontractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility or appearance of the Project or any portion of the Project.

1.4.2.3. Special Requirements For Substitutions.

1.4.2.3.1 In addition to complying with all other submittal requirements of the Contract, submit to CM/Contractor written data demonstrating that the proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and otherwise complies with all requirements of the plans and specifications, including:

- .1 Complete technical data including drawings, performance specifications, samples, and test reports of the article proposed for substitution.
- .2 Statement by Subcontractor that the proposed substitution is in full compliance with the requirements of the Contract Documents and Applicable Code Requirements.
- .3 List of Subcontractors, if any, that may be affected by the substitution.
- .4 Subcontractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriately licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the substitution. If no revisions or modifications are necessary, submit a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment.

1.4.2.3.2 At the request of and within the timeframes specified by the University's Representative:

- .1 Submit to CM/Contractor samples as deemed necessary by the University's Representative to evaluate the proposed substitution.

.2 Submit proposed substitution to tests deemed necessary by the University's Representative to evaluate the proposed substitution. Such tests shall be made by an independent Testing Laboratory and at the sole expense of Subcontractor, after review and approval of the test procedures by University's Representative. If re-testing is deemed necessary by the University's Representative to evaluate the proposed substitution, such re-testing shall be made by an independent Testing Laboratory at the sole expense of the Subcontractor.

.3 Provide to CM/Contractor any additional information deemed necessary by the University's Representative to evaluate the proposed substitution.

1.4.2.3.3 If University's Representative, in reviewing a proposed substitution, requires revisions or corrections to be made to previously accepted shop drawings and supplemental supporting data to be resubmitted, Subcontractor shall do so within the time period specified by the University's Representative. A proposed substitution may be rejected if Subcontractor fails to submit such revisions, corrections, or supplemental supporting data to CM/Contractor within the specified time period.

1.4.2.3.4 Except for products, material or equipment designated in the Bidding Documents for evaluation of substitutions prior to award, requests for substitution, including the data required by Paragraph 1.4.2.3.1, must be submitted to CM/Contractor not later than {30} days after the date of commencement specified in the Notice to Proceed. No requests for substitutions of products, material or equipment subject to the {30}-day deadline shall be considered unless the request and supporting data is submitted on or before the deadline, except those deemed, in University's Representative's sole opinion, to be necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.

1.4.2.3.5 If a product, material or equipment is designated in the Bidding Documents for evaluation of substitutions prior to award, then a request for substitution of the product, material or equipment, including the data required by Paragraph 1.4.2.3.1, must be submitted to CM/Contractor by the deadline specified in the Bidding Documents. Because of time constraints, only one submittal will be allowed for each such substitution request. Requests for substitutions of products, material or equipment designated for evaluation prior to award may not be made after the deadline specified in the Bidding Documents, and such requests be shall not be considered unless the request and supporting data is submitted on or before the deadline specified in the Bidding Documents. Notwithstanding the forgoing, the University may consider, after award of the Contract, requests for substitution of a product, material or equipment designated for evaluation prior to award where, in University's Representative's sole opinion, a substitution is necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.

1.4.2.3.6 In reviewing the supporting data submitted for substitutions, University's Representative will use, for purposes of comparison, all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Specifications. If more than 2 submissions of supporting data are required, the cost of reviewing the additional supporting data shall be at Subcontractor's expense.

1.4.2.3.7 Subcontractor has the burden of demonstrating, through the procedures specified herein, that its proposed substitution is equal to or superior to the first-named product,

material or equipment in quality, utility and appearance and complies with all other requirements of the plans and specifications. If revisions or modifications to the design or construction of the work are necessitated by the use of the substitution, Subcontractor also has the burden of demonstrating, through the procedures specified herein, that the use of the substitution will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project.

1.4.2.3.8 The University's Representative may refuse to approve any requested substitution where, in the reasonable opinion of the University's Representative, Subcontractor has failed to demonstrate, through the procedures specified herein, that the proposed substitution is equal to, or superior to, the first-named product, material or equipment, in quality, utility and appearance and that the proposed substitution complies with all other requirements of the plans and specifications.

1.4.2.3.9 University's Representative may reject any substitution not proposed in the manner and within the time limits prescribed herein.

1.4.2.3.10 Substitutions are not allowed unless approved in writing by the University's Representative. Any such approval shall not relieve Subcontractor from the requirements of the Contract Documents.

1.4.2.3.11 If revisions or modifications to the design or construction of the Work are necessitated by the use of a substitution, the substitution may be used only if the revisions and modifications are approved in writing by the University's Representative. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Subcontractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility and appearance of the Project or any portion of the Project.

1.4.2.3.12. If a substitution request is finally rejected by the University Representative, Subcontractor shall furnish and install:

- .1 the first-named product, material, or equipment; or
- .2 a product, material, or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number, provided Subcontractor complies with the submittal requirements (including deadlines) of specification section 01630-1.4

END OF SECTION