CHAPTER 110

DESIGN AND CONSTRUCTION PROCEDURES

MANAGEMENT AND COORDINATION

A. Coordination with Landscape Restoration Design and University

1. The Landscape Restoration of the Lower Rainier Vista, Montlake Triangle, Upper Burke Gilman Trail, and associated grading, landscape and hardscape is being designed by others concurrently with the scope of work under this contract. The Design-Builder must coordinate with the on-going design development of the Landscape Restoration.

2. Coordination During the Proposal Preparation Period

   a. No direct contact with the Landscape Restoration Team is permitted in any fashion except as prescribed elsewhere in this document.

   b. All contact shall be coordinated through the University.

3. Coordination after Notice-To-Proceed for Design-Build

   a. The Pedestrian Landbridge design must be coordinated with the Landscape Restoration design team through the University to satisfy the design cohesion and functional goals of the University.

      i. The Design-Builder shall meet with the Landscape Restoration designer prior to any agency or board review. Work shall be coordinated between the Design-Builder and the Landscape Restoration designer to satisfy the University’s functional and aesthetic criteria for the project.

      ii. At a minimum of two points during each design phase – Preliminary Design, Design Development, Construction Documentation, and any necessary Value Engineering process – the Design-Builder shall meet with the Landscape Restoration designer to review the design, receive comments, and define a plan of action for the resolution of the design comments. This coordination may be accomplished by the Landscape Restoration team attending the design-builders regularly scheduled design review meetings.

      iii. All coordination efforts between the Design-Builder and the Landscape Restoration designer shall be attended by the University’s designated project manager.

B. Access to and Use of Site:

1. The Design-Builder will be given access to the site for the purposes of construction in a Notice to Proceed (NTP) with Construction from the University.

2. Physical occupancy of the site prior to the receipt of a NTP Construction, for any reason other than observation and measurement during design, is prohibited, unless authorized specifically by the University.

3. Construction Staging and Project Offices will be allowed only at locations designated by the University. These locations are:

   a. Portions of University parking lot C-12.

   b. Lower Rainier Vista between Stevens Way and NE Pacific Place.

   c. The Montlake Triangle, see Chapter C for requirements relating to work above the existing Triangle Garage.

   d. Other locations as agreed by the University.
4. Construction equipment, vehicles, and deliveries are not allowed on Stevens Way.

C. Coordination with Occupants:
   1. Adjacent Buildings: Adjacent University buildings will be occupied during the construction period.
   2. In Existing Buildings: University intends to continue to occupy adjacent buildings, including Triangle Garage, during the construction period.

D. Changes In The Work:
   1. See Conditions of the Contract for procedures.

E. Progress Schedule: As specified in the Conditions of the Contract.
   1. Submit updated schedule whenever adjustments that change the Contract times or milestones are approved.

F. Progress Documentation for University Information:
   1. During Preliminary Design, Design Development, and Construction Documents Periods: Graphic displays sufficiently detailed to allow the University to identify the status of the design of the project.
   2. During Construction and Closeout: Photographs and graphic displays sufficiently detailed to allow the University to identify the status of the construction of the project.

G. Progress Documentation for University's Project Record:
   1. During Construction: Weekly digital photographic record of each major portion of the work, taken from consistent locations, distances, and angles.
   2. During Closeout: Detailed digital photographic record of all completed structures and installations.
   3. Photographs and Videos: Include the date taken, a short title of the view, and the compass orientation in each view; data must be in the actual photograph or frame, rather than added after printing (hand-printed lettering on an erasable marker board is acceptable).

QUALITY REQUIREMENTS

A. Design Criteria: During Design Development, the design and performance criteria must be refined, finalized, and documented.
   1. The University will appoint a representative of the Capital Projects Office to coordinate any modifications to the functional or aesthetic requirements as required by the design process.
   2. Design Documentation: Record all design and performance criteria that will be of use during use and operation of the project, including all items specified for maintenance manuals, below.
      a. Design Criteria Documentation Included in Construction Documents: Organized logically (from the point of view of operations staff) and placed in a prominent location in drawing sets.
      b. If required, shop drawings may be used to accomplish design documentation.
      c. University will maintain the project program document, modified to reflect changes made during refinement of the design.
      d. Drawings: Prepared using AutoCAD using University’s specified drawing and layering conventions.
      e. Shop Drawings: Prepared using same CAD software.
      g. Mock-Ups: Where necessary to clarify design intent and obtain approvals, construct full-
scale mock-ups.

h. Models: Where necessary to clarify design intent and obtain approvals, construct to-scale models of the work.

i  During the design and permitting stage:

   1. (1) one physical model at $\frac{1}{2^\prime} = 1\cdot0^\prime$ or a computer 3-D model and still images of the model of the Landbridge with abutments and/or retaining walls, Lower Burke Gilman Trail, and NE Pacific Place to indicate massing and form including rough grades for the adjacent Lower Rainier Vista and Triangle Garage.

3. Changes to Existing Traffic and Transit Services

a. Changes in Traffic Flow

ii  Measures required to implement a full closure of NE Pacific Place during nighttime hours (9:00 P.M. to 6:00 A.M.)

   1. Obtain approval from King County Metro to alter nighttime service that now uses NE Pacific Place. Depending on the closure times, King County Metro may need to alert riders, alter routes, and/or change equipment from electric trolley to diesel buses.

   2. Obtain approval from the Seattle Department of Transportation (SDOT) to close the street, which may require a street-use permit.

   3. Secure police-officer control for the Montlake Boulevard/Pacific Street intersection. The Seattle Police Department would determine if one or two officers are needed.

   4. Include proposed detour routes, signage and coning in the contractor’s required Traffic Management Plan (TMP) and Maintenance of Traffic (MOT) plans. Coning on Pacific Street would be needed to channelized an eastbound left-turn lane. This lane would be converted from one of the two general-purpose right-turn lanes.

   5. Use police-officer control of the Montlake Boulevard/Pacific Street intersection with the following phasing:

      a. Northbound + southbound thru movements

      b. Eastbound left turn + westbound left turn (dump trucks exiting the Sound Transit portal are allowed to turn left at night only).

      c. Northbound left turn and eastbound right turn only plus the pedestrian crossing of Montlake Boulevard.

iii  Measures required to close southwest-bound NE Pacific Place:

   1. Obtain approval from the Seattle Department of Transportation (SDOT) to close the street, which may require a street-use permit.

   2. Include proposed detour routes, signage and coning in the contractor’s required Traffic Management Plan (TMP) and Maintenance of Traffic (MOT) plans.

   3. Work with SDOT and King County Metro to extend the general-purpose vehicle access into the southbound curb lane on Montlake Boulevard approaching NE Pacific Street. Most of this lane is now restricted to transit only, and general-purpose traffic is
allowed to enter the lane at the far south end. During construction only, an extension of the general-purpose lane should be considered.

iv Reserved

v Reserved

vi Any reduction in the pedestrian capacity or barrier-free access capabilities within the Project area shall require a temporary mitigation plan. This includes movement of, and/or impact on the Burke Gilman Trail, bus stops, sidewalk ramps, and the mid-block crossings on NE Pacific Pl. at Rainier Vista.

b.

i Any reduction in the number of lanes within the Project area shall require an operational analysis of the impacts to vicinity streets, including along proposed detour routes. The operational analysis must show the increase in delay at affected intersections as well as the impact to queue lengths. The analysis shall include the morning and evening peak hour periods, and/or the peak hours within impact periods. The analysis shall be performed using the Synchro/SimTraffic traffic operations model. Simulations shall be averaged from a total of five model runs.

ii Existing turn prohibitions at the intersection of Montlake Blvd. NE/NE Pacific St. will require that northeast-bound traffic be retained on NE Pacific Pl. during daytime hours (two-way traffic will need to be retained between the Triangle Garage driveway and NE Pacific St.). However, nighttime closures may be possible. If nighttime closures are proposed, then the Design-Builder shall perform an operations analysis to show how the Montlake Blvd. NE/NE Pacific St. intersection could accommodate the eastbound-to-northbound left turn movement (either through temporary signal control or police control), and how that additional movement would affect nighttime traffic operations. That analysis shall also consider nighttime construction movements from the Sound Transit Light Rail project that access the signal via the east leg of the intersection. If nighttime closures to NE Pacific Pl. would affect access or egress from the Triangle Garage, then analysis of that impact, including a study of nighttime parking needs for the University Medical Center, shall also be performed.

iii Lane changes or closures that affect transit routes or operations must be approved by King County Metro.

iv Any reduction in the pedestrian capacity or barrier-free access capabilities within the Project area shall require a temporary mitigation plan. This includes movement of, and/or impact on the Burke Gilman Trail, bus stops, sidewalk ramps, and the mid-block crossings on NE Pacific Pl. at Rainier Vista.

c. Pedestrian and Bicycle Access During Construction

i The Design-Builder shall maintain existing pedestrian access on all sidewalks and at all intersections unless appropriately detoured. The Design-Builder shall also maintain safe access and passage for all pedestrian and bicycle facilities and shall incorporate ADA accessibility in all cases. Pedestrian sidewalks and paths that are currently ADA accessible shall be maintained and continue to conform to ADA requirements. Occupational safety regulations that apply to the Project limits shall also be considered the minimum standard for personal safety to pedestrians.

ii If work will be performed over any pedestrian and bicycle routes, temporary lighted covered walkways shall be provided to protect pedestrians and bicyclists from overhead hazards.

iii The Design-Builder shall not park motor vehicles or construction equipment on a pedestrian or bicycle sidewalk or path, or use a pedestrian sidewalk or bicycle path for
loading operations, stockpiling of materials, or allowing demolished or spoil materials to be deposited on the surface of a pedestrian sidewalk or path, unless present on accepted MOT plans.

iv Any surface of a pedestrian or bicycle sidewalk or path affected by the work shall be returned to its pre-construction condition, or better, upon re-opening to traffic. The trail surface shall be swept or washed free of mud, gravel, grease, excavated spoil and stockpiled materials.

v The Design-Builder shall install and maintain a pedestrian visual obscuration barrier alongside those areas which might, or are observed, to cause a slowdown in pedestrian traffic leading to a potentially unsafe condition. The Design-Builder shall install and maintain a pedestrian visual obscuration barrier alongside those areas which might, or are observed, to cause event attendees to deviate from pedestrian paths or walkways leading to a potentially unsafe condition.

vi Pedestrian and bicycle routes may only be closed if they were approved as part of the MOT Plan. Notice to pedestrians, a minimum of 14 Calendar Days in advance, shall be made before any facilities are closed. Advance notice shall consist of signs located along the affected route.

vii Design-Builder shall notify the City of Seattle 14 Calendar Days prior to closure of bicycle trails.

viii Any pedestrian or bicycle detours shall not require pedestrians to walk or bike more than 0.25 mile longer than the pre-construction distance.

ix All detours and work sites shall be signed in accordance with the Standards specified in this Section.

d. Approval and Notification for Transit Service Changes

i The Design-Builder shall be responsible for obtaining King County Metro’s approval for any change that would affect transit service or operations, including the location of layover space on Pacific Place or changes that would affect overhead power for electric trolleys.

ii Based on preliminary meetings with King County Metro, several issues have prevented Metro from developing an acceptable option to reroute the buses from NE Pacific Place, the Design-Builder will be responsible for coordinating this effort and gaining formal approval for an acceptable mitigation strategy from King County Metro. If an acceptable plan cannot be accomplished, the default option will be to maintain electric trolley bus service on NE Pacific Pl throughout construction.

iii Notification requirements in advance of making changes that affect transit service or operations shall be per King County Metro.

iv Any costs associated with providing temporary trolley power, substituting diesel buses, or altering transit routes shall be borne by the University.

4. Additional Design and Analysis Requirements

a. The University has evaluated the existing Triangle Garage ventilation system’s capacity and provided an engineer’s analysis of the vent intake area and implications for sealing the Rainier Vista driveway tunnel opening.

i For the purposes of preparing the proposal, the Design Builder shall assume that 50% of the existing driveway opening in the north wall of the garage is required for ventilation.

   (1) The Design Builder shall allow for a horizontal connection from the existing garage through the south bridge abutment wall.
(2) Chain link fencing not desired. Design-builder to perform air measurements to determine if louver system can be utilized.

(3) The louvered area shall be coordinated with the Landscape Restoration design for the pedestrian scale walls along Pacific Place.

(4) At design-builders option, the actual air flow can be measured as outlined in the report to confirm sealing off the area is viable option.

B. Substantiation Requirements:

1. See Chapter 111 for definitions and basic requirements; see other chapters for specific items of substantiation required.
2. See Chapter 00570 Contract Definitions for time periods relating to submission times.

C. Substantiation Submittal Procedures:

1. Time Frames: As specified. If there is a conflict between the degree of detail or completion specified and the progress of the design or construction, obtain a clarification before submitting.
2. Recipient: University's project manager, at the address indicated in the RFP. For SDOT or Metro related work, design-builder to coordinate directly with that agency and copy the University's representative on all correspondence and approved submittals.
3. Number of Copies: 2 copies for University's use and records; University will return not more than one additional copy.
4. For time periods that constitute Milestones, all substantiation submittals required during that period must be complete and accepted before the Milestone can be considered achieved.
5. Submit complete sets of documents containing all substantiation at end of the following periods:
   a. Preliminary Design period.
   b. Design Development period.
   c. Construction Documents period (may be submitted in multiple partial Construction Documents, at the Design-Builder’s option).
   d. Construction period.
6. Resubmissions: Clearly identified as such, with all changes made since the original submittal clearly marked.

D. University's Review of Substantiation: Unless otherwise indicated, University will make formal acceptance of substantiation submittals.

E. Substantiation Schedule: Prepare and maintain a complete schedule of substantiation items, showing:

1. Contents, for each item:
   a. Anticipated and actual item, with Chapter and paragraph number and drawing identification, if any.
   b. Anticipated submittal date, or time period(s) during which submittal is required.
   c. Actual submittal date.
   d. Action taken or other status.
   e. Identification of future re-submission requirement, if any.
2. If desired, schedule may be incorporated into overall progress schedule, provided substantiation data can be reported separately from other progress information.
3. Submission: To University, within 30 days after Notice to Proceed (NTP) with Design.

4. Form: Computer database format for University’s use in tracking submittals; database structured so University’s added information will not be overwritten or deleted by incorporation of updated data from Design-Builder.

5. Updates: To University, monthly in hard copy.

F. Field Testing and Inspection: Perform all testing, observation, and inspection required by code and as specified.

1. Qualifications of Testing/Inspection Agencies:
   a. Qualified and equipped to perform applicable tests/inspection.
   b. Regularly engaged in testing and inspection activities on a commercial basis.
   c. Independent of Design-Builder and his contractors’ organizations.
   d. Employed by Design-Builder directly.
   e. Authorized to operate in the State in which the project is located.
   f. Acceptable to University.
   g. Acceptable to SDOT
   h. Substantiation: Submittal of qualifications, based on ASTM E 329 and ASTM E 548.

2. Reports: Written report of each test/inspection; including complete details of conditions, methods, and results, signed by responsible individual. Reports shall be addressed and delivered to the Design-Builder, with simultaneous copies sent to the architect-of-record, the responsible engineer-of-record, and to the University’s representative.

G. Construction Observation: The design-build engineer-of-record, and when appropriate, the responsible architect-of-record, or their authorized representatives, shall observe the construction to assure the project is being constructed in accordance with the Construction Documents prepared by the design consultants and approved by the University.

1. Observations shall be conducted not less than weekly during construction.

2. Written reports, photographs, or other records of construction observation shall be utilized to document the design-builders consultants’ observations.

3. Not less than monthly, a comprehensive report of the design consultants’ observations shall be provided.

4. Reports shall be addressed and delivered to the Design-Builder, with simultaneous copies sent to the University’s representative.

5. The design-build engineer-of-record shall also certify construction progress and compliance with the University approved Construction Documents on the Design-Builder’s periodic and final payment applications.

H. Reference Standards: Where products or workmanship is specified by reference to a document not included in the Contract Documents, comply with the requirements of the document, except where more stringent requirements are specified.

1. Date of Issue: As indicated in each instance except where a specific date is established by code.

2. Copies on Site: Keep copies of referenced standards that prescribe installation or workmanship standards on site until completion.

DESIGN REVIEW PROCESS
A. The Design-Build team shall develop the Project plans and submit them as follows for review, comment, and correction. After each round of submittals and review, the Design-Build team shall revise the Project plans to address any comments or recommendations received.

1. Local Review Boards: The following independent entities have jurisdiction over the project. The Design-Build team is required to submit drawings and other documentation as required to:
   a. University of Washington Architectural Commission
   b. University of Washington Landscape Advisory Committee (ULAC)
   c. City / University Community Advisory Committee (CUCAC)
   d. City of Seattle, Department of Planning and Development (DPD)
   e. City of Seattle, Seattle Design Commission

2. The Design Builder is encouraged to submit the roadway and trail design to SDOT for informal review prior to completing all of the documentation for the preliminary design submittal. The design shall be developed to a sufficient level of detail to ensure that conflicts between components have been resolved and that the bridge plans and details, roadway and trail plans and details, and special drainage facilities are constructible and maintainable.

3. Seattle Design Commission: The Design-Build team shall present the Project Plans to the Seattle Design Commission (SDC) a minimum of three times, or as required to obtain approval. These meetings are scheduled on the first and third Thursdays of each month. A list of design issues to be reviewed can be determined by contacting the Director of the SDC.
   a. The first presentation will describe the approach being taken for the Project and the Design-Build team’s plan for implementation. The SDC will provide comments, clarification requests, and/or recommendations from this presentation in the form of meeting minutes. SDOT will review the SDC meeting minutes and issue a letter to UW and the Design-Build team with further comments and/or recommendations regarding the Project’s implementation plan.
   b. The second presentation will be performed at the 60% design level and the third presentation at the 90% design level. The second and third presentations to SDC will consist of responses to comments and recommendations received from SDC and SDOT from the previous presentation. The SDC will provide comments, clarification requests, and/or recommendations from each presentation in the form of meeting minutes. SDOT will review the SDC meeting minutes from both presentations and will issue a letter to the UW and the Design-Build team with further comments and/or recommendations regarding the implementation plan.
   c. After receiving a letter from SDOT after the third presentation, the UW will submit a letter to SDOT detailing how the comments and/or recommendations will be addressed and implemented as part of the Project.
   d. SDOT will issue a letter of approval, or a conditional letter of approval of the Design-Build team’s proposed implementation plan.

4. University of Washington
   a. The Design-Build team shall develop the Project plans and submit to the Architectural Commission two times. These meetings are scheduled quarterly in March, June, September and December. Design issues to be reviewed include but are not limited to the following:
      1) The form, dimensions, materials, and finishes of all major components of the work
      2) Landbridge structural design
      3) Exposed surface finishes for the Landbridge, walls, sidewalks, pathways, etc.
4) Guardrail details  
5) Roadway/pathway profiles  
6) Lighting under bridge structure and along NE Pacific Pl.  
7) Potential deviations from the Landscape Restoration design and/or the technical criteria provided in this RFP requiring University input for resolution

b. The Design-Builder shall develop the Project plans and submit to the University Landscape Architecture Commission two times. These meetings are scheduled quarterly in March, June, September and December. Design issues to be reviewed include but are not limited to the following:  
   1) The form, dimensions, materials, and finishes of all major components of the work  
   2) Landbridge structural design  
   3) Exposed surface finishes for the Landbridge, walls, sidewalks, pathways, etc.  
   4) Guardrail details  
   5) Roadway/pathway profiles  
   6) Lighting under bridge structure and along NE Pacific Pl.  
   7) Potential deviations from the Landscape Restoration design and/or the technical criteria provided in this RFP requiring University input for resolution

ENGINEERING REVIEW PROCESS
A. The Design-Builder shall develop the Project’s Engineering Plans and submit them as follows for review and comment. After each round of submittals and review, the Design-Builder shall revise the Project Plans to address any comments or recommendations received.
   1. City of Seattle  
      a. The Design-Builder shall submit the Engineering Plans to SDOT in accordance with the SDOT Right-of-Way Improvements Manual.  
      b. The Design-Builder shall submit the Engineering Plans to Seattle Public Utilities (SPU) in accordance with the City of Seattle Department of Planning and Development requirements.
   2. University of Washington  
      a. The Design-Builder shall submit the Engineering Plans to the University of Washington Campus Engineering in accordance with the Facilities Services Design Guidelines for University maintained installations.
   3. King County  
      a. The Design-Builder shall submit the Engineering Plans to King County Metro Transit for review and approval including all trolley wire designs.

TEMPORARY FACILITIES AND CONTROLS
A. University will provide the following:  
   1. No temporary facilities will be provided by University. Contractor may connect to local existing facilities. Utility use will be metered and charged at the current rate.

B. New permanent facilities may be used during construction.
C. Existing facilities may be used; specifically:
   1. Parking lots. Design-Builder shall pay $15 per day per stall, or the prevailing rate, for use of University parking facilities in lots designated by the University.
   2. No parking at anytime will be allowed in the Triangle Garage

D. Provide the following for the use of the University:
   1. Desk space in field office on site, furnished, heated, and cooled.

E. Vehicular Access and Parking: Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
   2. Vehicle parking allowed on site during construction.

F. Security: Protect the work, existing facilities, and University's operations from unauthorized entry, vandalism, and theft; by Design-Builder, consisting of:
   1. Fenced construction site consisting of a seven-foot high wire fence and gates.
   2. Security on site during all non working hours after the removal of the temporary construction fence, but before Substantial completion of the project.

G. Erosion and Sediment Control: See Volume G.

H. Dust Control:
   1. Exterior: Minimize raising dust, prevent dispersal of air-borne dust into atmosphere and over adjacent property.

I. Noise Control:
   1. Indoor: Excessively noisy tools and operations will not be allowed at any time of day. Excessively noisy includes jackhammers.
   2. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.

J. Vibration Control
   1. The work occurs on a University campus where vibration sensitive measurements and experiments may be in process
   2. Limit construction methods that result in excessive vibration
   3. Review construction methods that can be reasonably anticipated to result in significant vibration with University for approval prior to performing work
   4. Methods that should be reviewed prior to use and may be prohibited:
      a. Driven piles

K. Construction Waste Management Diversion Strategy
   1. Develop and implement a plan for diverting construction waste from landfills through recycling and salvage

L. Waste Control: Provide waste storage and removal as required to maintain site in clean and orderly condition.
   2. Waste Removal Service: As needed to maintain a clean site; including dumpsters.
   3. Prohibited: Open free-fall chutes; containers without lids.
M. Pollution Control: Comply with federal, State, and local regulations.

N. Project Identification Sign: By Design-Builder to University's design.
   1. No other signs allowed on site without University's permission except those required by law.

O. Removal of Temporary Facilities, Utilities, and Controls: Prior to Substantial Completion; including clean up, restoration of existing facilities used to original condition, restoration of permanent facilities used to specified condition, and repair of damage.

PRODUCT REQUIREMENTS
A. See Chapter 111 for general requirements for product options and substitutions.

EXECUTION
A. Work by University: The University will perform the following work, with its own forces or using other contractors:
   1. Hazardous waste remediation, including cleanup of contaminated soils, if any, for discoveries made during construction.

B. Do not enter, cross, infringe upon, or limit access to adjacent property without first obtaining written permission from the property owner.

C. Health and Safety:
   1. Use of explosives is not permitted.
   2. Construction operations will comply with NFPA 241-2000, including applicable recommendations in Appendix A.
   3. Removal, abatement, handling, and disposal of hazardous materials will comply with 29 CFR 1926 and state and local regulations.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Substantiation:
      b. Design Development: Identification of hazards in existing structures and on site, with preliminary plan for abatement.
      c. Construction Documents: Detailed specifications for hazardous material removal, abatement, and disposal for Design-Builder generated material.

D. Final Cleaning: By Design-Builder.

CLOSEOUT SUBMITTALS
A. Maintenance Manuals: Assemble system design information, operation and maintenance data, and copies of warranties into manuals, organized by functional system (e.g. electrical, lighting, etc.) or material type (e.g. concrete, steel, coatings, etc.) as appropriate using specification numbers where applicable.
   1. Binders: 3-ring, D-ring, with hard cover, project title on spine, Table of Contents in each volume, and stiff dividers with labeled tabs; contents divided into logical binders not more than 3 inches thick.
   2. Directory: Names, addresses, telephone numbers, of all design and construction entities, including subcontractors and suppliers, with names of products supplied.
   3. Software-Operated Systems and Equipment: Detailed program documentation, a general review of the programming approach, description of use on this project, and description of possible user-
modifications.

4. **Drawings**: Bound into manuals, folded to size of binder.

5. **Product Listing**: Manufacturer’s brand name and model numbers for each major product installed, in alphabetical order by generic product name, cross-referenced to specification numbers and Table of Contents of manuals.

6. **Warranties**: Photocopies of originals.

7. **Videotapes of training sessions**.

B. **Project Record Documents**: During construction maintain on site one hardcopy set of all documents forming the contract, including drawings, recording all changes made by addenda, by formal modifications, and in performing the work, for University’s future reference.

1. **Storage**: Separately from documents used for construction, in location where they can be kept clean and safe from fire and damage.

2. **Changes to be Recorded Include**:
   a. Actual measured locations (horizontal and vertical) of foundations and concealed utilities and appurtenances, referenced to visible permanent appurtenances.
   b. Field changes of dimension and detail and details not on original documents.
   c. Actual products used, in specification, with brand name or model number.

3. **Submittal Copy of Record Construction Documents**: Prior to Final Acceptance, for Landbridge and roadway lowering, provide modified electronic versions of the Construction Documents, utilizing the computer software used to create the original documents. Deliver to the University on compact disks.

C. **Spare Parts and Extra Materials**: As specified for specific products; delivered to location on project site designated by University; with receipt from University.

D. **Maintenance Supplies and Tools**: As specified for specific products; delivered to location on project site designated by University; with receipt from University.

**END OF CHAPTER 110**