

UNIVERSITY OF MINNESOTA
TWIN CITIES

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Minneapolis, Minnesota 55455
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*New file, unless we
have one
"Asbestos"*

January 23, 1987

TO: Vice President Stanley Kegler

FROM: Clint Hewitt *Clint*

As promised in my memorandum of January 2, 1987, attached is an outline of the University's Asbestos Abatement Program. Gordon Girtz and Keith Carlson, of the Department of Environmental Health and Safety, worked with me on this report and are the experts on this subject.

If you need additional copies or have questions about this report I will be happy to coordinate the responses.

CNH:jr

cc: Vice President David Lilly
Vice President Frank Wilderson
Mr. Gordon Girtz
Mr. Keith Carlson

UNIVERSITY OF MINNESOTA

ASBESTOS ABATEMENT PROGRAM

MINNEAPOLIS, MINNESOTA

OFFICE OF PHYSICAL PLANNING
ENVIRONMENTAL HEALTH AND SAFETY

UNIVERSITY OF MINNESOTA ASBESTOS ABATEMENT PROGRAM

I. INTRODUCTION

The University of Minnesota has organized, in compliance with State and Federal regulations and guidelines, a comprehensive, goal specific, long term asbestos abatement program.

In 1983, a preliminary "walk-through" survey of all buildings on the St. Paul-Minneapolis campus for asbestos containing materials revealed the presence of asbestos in approximately 180 buildings. Cost of removal for asbestos in these buildings, in 1986, was estimated to be \$80,000,000.00. The majority of these products exist as pipecovering or sprayed-on acoustical and fire-proofing material. Over time, or as a result of repair and maintenance work in these areas, the condition of the asbestos containing materials degrades to the point of exposing the friable asbestos materials to the air. This results in potential exposure to the asbestos fibers to building occupants.

The inhalation exposure to asbestos fibers can cause asbestosis, mesothelioma and lung cancer. These conditions may not manifest themselves until long after asbestos exposure resulting in potential liability for building owners.

On June 20, 1986, the Federal Register published Part 1910 of Title 29 of the Code of Federal Regulations regarding asbestos. These amended regulations regarding asbestos proved more stringent, requiring building owners, regulatory organizations and asbestos removal groups to become more cognizant of asbestos exposure and consequent health and legal issues. These regulations, in addition to reducing the permissible asbestos exposure from 2.0 fibers/cc to 0.2 fibers/cc (8-hr Time Weighted Average), emphasized proper removal techniques, environmental monitoring, education, record-keeping, respirator fit-testing and medical monitoring of employees exposed to asbestos.

Environmental Protection Agency (EPA) standards dictate that all asbestos containing materials be removed prior to a buildings' demolition. EPA has also mandated that specific asbestos abatement policies be in place, by October 1987, for primary and secondary schools. This abatement policy has also been suggested for post-secondary institutions.

II. PROGRAM OBJECTIVES

The University of Minnesota's comprehensive asbestos abatement program is designed to minimize exposure to all persons occupying University facilities. This will result in a reduction in potential adverse health effects from asbestos exposure.

A. Short-term

Building remodeling, building demolition, unanticipated leaks in steam pipes and recently discovered damaged pipecovering or sprayed-on material in occupied areas are all conditions calling for immediate attention. These situations are part of the short-term maintenance program of asbestos containing materials.

B. Long-term

The University of Minnesota's objective is to abate all asbestos containing materials in buildings at all University facilities. This abatement will occur in a safe, systematic, efficient and cost effective manner.

C. University Asbestos Policy

The DEHS is responsible for monitoring and inspecting all asbestos related activities. This responsibility includes hazard assessment of damaged pipecovering and sprayed-on material, survey of proposed asbestos removal, air monitoring, bulk sample analysis, recordkeeping and all health and safety recommendations relating to asbestos activities.

During renovation or demolition in University facilities, asbestos containing material encountered during the course of construction will be assessed by DEHS, and removed, in accordance with State, Federal, and DEHS specifications and guidelines, wherever possible. This policy will alleviate potential exposure to building occupants, minimize legal implications and will provide the most cost effective method of abatement until adequate funding can be obtained to implement the systematic abatement of asbestos in all University buildings.

III. CURRENT STATUS OF ASBESTOS ABATEMENT

Asbestos abatement activities at the the University of Minnesota have been limited to repair or removal during emergency or remodeling activities. Total removal of asbestos in any University building prior to total demolition, is standard procedure as mandated by EPA regulations. A formally funded total asbestos abatement at the the University of Minnesota has not been established, however. Funds are being requested from the Legislature to support a continuing program.

A. Asbestos Survey

The DEHS is currently coordinating and supervising a comprehensive asbestos survey, of all buildings on all University campuses. This survey (see Appendix I) will involve extensive examination of all building documents and blueprints, bulk sampling of suspected asbestos containing material and analysis of samples.

This survey will 1) provide information for a lawsuit, brought by the University and the State, against certain asbestos manufacturers, 2) provide a necessary tool to better anticipate future capital expenditures for asbestos abatement at the University, and 3) provide information for a more accurate assessment of potential health and safety concerns regarding asbestos exposure in University buildings.

The results of this ongoing survey are currently being analyzed and tabulated in a computer program. This will facilitate efficient storage and allow rapid access and retrieval of information.

B. Air Monitoring for Asbestos

The Industrial Hygiene Division of DEHS has quantified and documented airborne asbestos concentration levels in numerous locations (see example Appendix II) throughout the University over the past 10 years. Results of these analyses revealed no area within the University where air concentrations of asbestos-like fibers exceeded permissible limits. These measurements indicate no over-exposure for any University employee or building occupant.

IV. PROGRAM IMPLEMENTATION

A. Emergency Repair of Asbestos Containing Materials

The majority of the emergency repair work (e.g. steam leaks in asbestos covered pipes and newly discovered damaged pipecovering) at the University of Minnesota is performed by qualified in-house Asbestos Workers. This work consists of repairing the damaged pipecover or replacing an irreparable section of the pipecover. This work is accomplished by preparing the work site with protective barriers, sealing off air handling systems, installing negative air machines and posting the appropriate signage. The workers then wet the section of irreparable pipecovering, remove the pipecovering and place it within a sealed plastic bag. If the pipecover is repairable, a fiberglass-gauze wrapping material is placed around the pipe. This repaired section is then sealed with a latex sealant material to ensure total containment of asbestos fibers.

Preceding any work by in-house Asbestos Workers and during these repair activities, the Department of Environmental Health and Safety (DEHS) performs the following functions to assure worker health safety and ensure compliance with mandated health and safety regulations during asbestos removal.

- a. Air monitoring during asbestos removal
- b. Respiratory fit-testing of workers
- c. Medical monitoring
- d. Employee education
- e. Monitor and regulate work activities
- f. Establish acceptable final air clearance levels
- h. Maintain records of work activities
- i. Notify building occupants prior to removal
- j. Education of building occupants in removal areas relative to the asbestos activities

B. All Other Asbestos Repair and Removal Work

Asbestos removal work involving remodeling or demolition is almost exclusively performed by qualified outside asbestos removal contractors. The DEHS is responsible for administering and negotiating asbestos removal contracts with "outside contractors" (see copy of master specification for asbestos abatement in Appendix III) and providing quality assurance, guidance and supervision. Unlike other construction projects, monitoring of asbestos removal activities can only be performed by personnel with health and safety expertise. DEHS's responsibilities and activities include:

- a. Assist in writing work specifications
- b. Assist with pre-bid "walk-through" site visit
- c. Evaluate bids and provided expertise in selection of a contractor
- d. Enforce contract specifications
- e. Tour work areas with contractors and agree on pre-abatement conditions of the work area including barriers and decontamination enclosure systems
- f. Inspect work areas during abatement to ensure work quality
- g. Meet with contractor daily to review work progress and solve problems or adjust procedures
- h. Provide bulk analysis of suspected asbestos products
- i. Provide area air monitoring and assure compliance with State, Federal and DEHS regulations
- j. Maintain authority to stop any work activities if the work is not being performed in accordance with applicable specifications or regulations
- k. Request, review, maintain and approve contractor submittals for payment of services
- l. Review air monitoring results to ensure acceptable air concentration limits and approve final clearance results
- m. Review work area prior to demolition of barriers and enclosure systems
- n. Inspect work areas following removal of barriers and enclosures
- o. Maintain asbestos work records and disposal manifests
- p. Notify building occupants prior to removal
- q. Education of building occupants in removal areas relative to the asbestos activities

V. PROGRAM COMMITMENT

Through Administrative support and continued financial commitment, the University of Minnesota can remain a progressive leader in the area of asbestos abatement.

The comprehensive asbestos abatement program at the University of Minnesota will minimize or alleviate legal, financial and health concerns created by the presence and potential exposure to asbestos containing products in buildings at the University of Minnesota.

PIPING: LINEAR FEET CUBIC VOLUME OF INSULATION

Date: _____
 Building Name: _____
 Building Number: _____
 Surveyor: _____

Cubic Volume of Insulation: $3.164 * Z [((X+Y)/2)^2 - (X/2)^2]$

blue print number	floor number	type of piping	type of insulation	asbestos concentration	lgst diameter of pipe (in) variable X / taken from		thickness of insul. (in) variable Y / taken from		length of pipe (ft) variable Z / taken from		cubic volume of insulation (ft^3)
										total:	total:

CUBIC VOLUME OF SPRAYED-ON MATERIAL (CEILING AND BEAMS)

DATE _____
 BUILDING NAME _____
 BUILDING NUMBER _____
 SURVEYOR _____

CUBIC VOLUME OF INSULATION = (SURFACE AREA) (THICKNESS OF INSULATIONS)

BLUE PRINT NUMBER	ROOM NUMBER	LOCATION OF MATERIAL	BEAM SIZE (FT)	TYPE OF INSULATION	NUMBER OF BEAMS	SURFACE AREA (FT ²)	THICKNESS OF INSULATION (IN)	CUBIC VOLUME (FT ³)
						total:	total:	

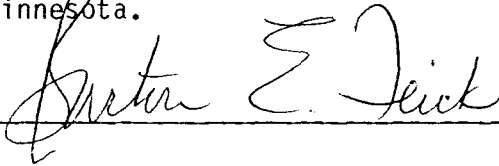
ASBESTOS AIR ANALYSIS RESULTS	
DATE OF SURVEY	23-Dec-86
BUILDING	Amundson Penthouse
ROOM NUMBER	outside enclosure
LOCATION IN ROOM	near entrance
MONITORING PERFORMED BY	G.G.
SAMPLING PUMP USED	
DATE LAST CALIBRATED	
FILTER SIZE (25 OR 37 mm)	37
SAMPLE TYPE (area, A : personnel,F)	A
FLOW RATE (CM ³ /MIN)	4000
MINUTES PUMP ON	480
FIBERS/ 100 FIELDS	4.00
TIME SAMPLING STARTED	
TIME SAMPLING STOPPED	
TOTAL TIME ELAPSED (MIN)	480
TOTAL VOLUME SAMPLED (CM ³)	1920000
FIELDS/FILTER	257000
FIBERS PER FIELD	0.04
FIBERS/ CM ³ AIR SAMPLED	0.0054
8 HOUR TIME WEIGHTED AVERAGE	
COMMENTS	

MASTER SPECIFICATION FOR
ASBESTOS ABATEMENT
UNIVERSITY OF MINNESOTA

DECEMBER 15, 1986

UNIVERSITY OF MINNESOTA
OFFICE OF PHYSICAL PLANNING
ENGINEERING AND ARCHITECTURE
100 SHOPS BUILDING
319 - 15th AVENUE S.E.
MINNEAPOLIS, MINNESOTA 55455

I hereby certify that this specification was prepared by me or under my direct supervision and that I am a duly Registered Architect under the laws of the State of Minnesota.



Reg. No. 3820

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BIDDING REQUIREMENTS CONTRACT DOCUMENTS AND CONDITIONS OF THE CONTRACT

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1. BIDDING DOCUMENTS

A. Bidding documents include the Request for Quotation, Instructions to Bidders, Proposal Form, the proposed Contract Documents, and all Addenda issued prior to receipt of bids.

B. Addenda are supplements issued prior to the receipt of bids which modify, clarify, interpret or correct the Bidding Documents. Addenda become a part of the Contract Documents when the Contract is executed.

2. EXAMINATION OF BIDDING DOCUMENTS

A. Before submitting a bid, each Bidder shall carefully examine the Bidding Documents. Each Bidder shall fully inform himself prior to bidding as to all existing conditions and limitations under which the Work is to be performed. Each bidder shall include in his bid a sum to cover the cost of all items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to any Bidder because of lack of such examination or knowledge. The submission of a bid shall be conclusive evidence by the Bidder that he has made such examination.

3. INTERPRETATION OF BIDDING DOCUMENTS PRIOR TO BIDDING

A. If any person or firm planning to submit a bid is in doubt as to the true meaning of any part of the Bidding Documents, or if he finds omissions or discrepancies in any part thereof, he shall request an interpretation or correction before the date bids are due.

B. Address all communications regarding this Work to the Director, Engineering and Architecture Division, Room 100 Shops Building, University of Minnesota, 319 - 15th Avenue S.E., Minneapolis, Minnesota 55455. Specific questions regarding the Work shall be directed to Burton E. Flick, (phone 625-3827), the authorized representative of the Director for this Work, unless another representative is specifically designated in the Request for Quotation.

C. Any interpretation or correction of the Bidding Documents will be issued only by Addenda mailed or delivered to each person or firm on record as having received Bidding Documents. Interpretations or corrections given by any other method will not be binding and Bidders shall not rely on such information.

4. PREPARING AND DELIVERING THE BID

A. Bid shall be prepared on forms furnished by the University. All blank spaces shall be filled in and the forms properly executed. Do not change the wording of the Bid Form and do not include any interlineations, alterations or erasures on the completed Form. Acknowledge receipt of all Addenda received. State bid amount in both writing and figures. Any discrepancy between the written and numerical bid amount will be cause for rejection of the bid. Unauthorized conditions, limitations or escalator clauses attached to the bid will be cause for rejection of the bid.

B. If the Bidder is a Partnership, the bid shall be signed by one of the partners and the name and address of all partners shall be entered upon or attached to the bid. If the Bidder is a Corporation, the bid shall be signed by one of its officers, with the corporate seal affixed to the Bid Form.

C. No oral, telephonic or telegraphic bids or modifications of a bid will be considered, except telegraphic modifications that do not disclose the amount of the bid will be considered if received before the hour of the bid opening. If a bid is modified by telegram, it shall be followed by written confirmation signed in longhand, postmarked prior to the date and hour of bid opening and delivered to the Associate Director of Purchasing and Materials Management within 48 hours after the scheduled date and hour of bid opening. Telegraphic modifications not so confirmed will not be considered.

D. Place the completed bid in the envelope furnished by the University bearing the title of the Work, the name and address of the Bidder and the date and hour of the bid opening. Deliver to the Associate Director of Purchasing and Materials Management as described on the Request for Quotation or Advertisement for Bids. Bids received after the date and hour set for receiving them will not be considered and will be returned to the Bidder unopened.

5. BID SECURITY

A. No bid security will be required.

6. PROOF OF COMPETENCY

A. Each Bidder shall furnish evidence satisfactory to the University that he and his proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of the work as indicated in the Contract Documents in a satisfactory manner.

B. Each Bidder shall:

1) Be an established firm with a history of at least three years satisfactory experience in asbestos removal, or, if firm is less than 3 years old, all principals shall have at least three years satisfactory managerial experience with other asbestos removal firms.

2) Have successfully completed jobs of scope and type similar to those specified, at least one of which shall have had a contract amount for asbestos removal in excess of \$25,000; and

3) Maintain a permanent office with personnel in attendance during normal working hours to receive written or telephone orders and other communications from the University.

C. Submit documents to substantiate compliance with the above requirements.

D. The University will review submitted documents and, at its discretion, independently verify their accuracy and obtain such other information as required to determine each bidder's competency. Due to the critical nature of the work, the University reserves the right to disqualify any or all bidders based on evaluation of submitted documents and other information indicating bidder's competence.

7. WITHDRAWAL OF BIDS

A. Any Bidder may withdraw his bid, either personally or by signed written request on firm's letterhead, at any time prior to the scheduled time for opening of bids.

B. No Bidder may withdraw his bid after it has been opened for the period of time stated on the Bid Form. All bids shall be subject to acceptance by the University during this period.

8. ACCEPTANCE OF BIDS

A. It is the intent of the University to accept the bid of, and award a Contract to, the responsible Bidder submitting the lowest bid, all factors considered, provided the bid has been submitted in accordance with the bidding requirements, is judged to be reasonable, does not exceed the funds available and the Bidder is capable of undertaking the Work in an acceptable manner. The University, however, is not obligated to accept any bid or to award a Contract.

B. The University reserves the right to reject any and all bids, accept any bid it deems to be in its best interest, waive any informalities in bids submitted and waive minor discrepancies in bidding procedures.

END OF SECTION

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

SECTION 00701 - GENERAL CONDITIONS

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.1 Definitions

- 1.1.1 The Contract Documents: The Contract Documents consist of the Agreement, the Performance Bond (where required), the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, all Addenda issued prior to execution of the Contract, and all modifications thereto. A Modification is (1) a written order or amendment to the Contract signed by both parties, (2) a Change Order, (3) a written interpretation issued by the University or (4) a written order for a minor change in the Work issued by the University.
- 1.1.2 The Contract: The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1, except the changes to the Contract Sum or Contract Time may be made only by Change Order.
- 1.1.3 The Work: The term Work includes all labor and services necessary to produce and fully complete the construction required by the Contract Documents, and all materials and equipment incorporated in such construction.
- 1.1.4 The Project: The term Project is the total construction contemplated of which the Work performed under the Contract Documents may be the whole or a part.

1.2 Execution, Correlation, Intent and Interpretation

- 1.2.1 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.
- 1.2.2 The Contract documents are complementary, and what is required by any one shall be as binding as if required by all. The Contractor shall use, and be bound by, the requirements of all the Contract Documents.
- 1.2.3 The organization of the Specifications into Divisions, Sections and Articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade, unless it is specified that a Subcontract include specific phases or elements to complete a certain part of the Work for reasons of coordination or responsibility. Where the specification has been divided into Sections, it is for convenience of use. The University shall not be obligated to enter into any jurisdictional or other dispute resulting from the organization or arrangement of parts of the Work in the Contract Documents, nor to serve as an arbitrator to establish subcontract limits.
- 1.2.4 Written Interpretations necessary for the proper execution of the Work, in the form of drawings or otherwise, will be issued with reasonable promptness by the University. In general, requests for interpretation of design intent shall be directed to the Engineer. Interpretations shall be consistent with and reasonably inferable from the Contract Documents.
- 1.2.5 Where a reference in the Contract Documents to an American Society for Testing and Materials (ASTM) standard, American National Standards Institute (ANSI) standard, Federal Specifications (FS) or other recognized standard does not include the date of the standard, the edition current as of the date of the Contract Documents shall apply.
- 1.2.6 Figured dimensions shall be followed in preference to measurement by scale. In the event of discrepancy between dimensions, or between drawings, or between drawings and specifications, the intent shall be interpreted by the Engineer. Where a dimension may be missing, follow the direction and dimension provided by the University. All dimensions are subject to verification by the Contractor at the site by measurement of existing or incorporated work relating to such dimensions.
- 1.2.7 Imperative or directive drawing notes or specifications apply to and refer to the Contractor. Omission of phrases such as "the Contractor shall" or "as indicated on the drawings" is intentional. Where a number is specified (as for gauge, weight, temperature or an amount of time) and the specified number cannot be obtained, provide the next better number available as approved by the Engineer.

1.3 Copies Furnished

- 1.3.1 A reasonable number of copies of the Contract Documents will be furnished, free of charge, for the execution of the work. These copies are, and shall remain, the property of the University and may not be used on any other Project.

ARTICLE 2 - THE OWNER

2.1 Definition

- 2.1.1 The Owner is the Regents of the University of Minnesota, a State of Minnesota Constitutional and Education Corporation, herein referred to as the University.
- 2.1.2 The University will act through its Director of Physical Plant Operations, except for certain fiscal functions which are delegated to the University Purchasing Department. Unless otherwise indicated, all formal written notice shall be delivered to the Director, Physical Plant Operations, Room 200 Shops Building, 319-15th Avenue S.E., Minneapolis, Minnesota 55455.

2.2 Information and Services Provided by the University

- 2.2.1 Except as may otherwise be required by the Contract Documents, the University will (1) furnish all surveys describing the physical characteristics, legal limits and utility locations for the site of the Project, (2) secure and pay for easements for permanent structures or permanent changes in existing facilities, (3) furnish information or services under its control with reasonable promptness to avoid delay in the orderly progress of the Work, and (4) issue instructions and perform other administrative functions as described in Article 3.
- 2.2.2 The foregoing are in addition to other duties and responsibilities of the University enumerated in the Contract Documents and especially those in respect to Payment and Insurance in Articles 9 and 11 respectively.

2.3 University's Right to Stop the Work

- 2.3.1 If the Contractor fails to correct defective Work or persistently fails to supply materials or equipment in accordance with the Contract Documents, does not allow others sufficient time to perform their work or otherwise is in substantial violation of the Contract, the University may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

2.4 University's Right to Carry Out the Work

- 2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision of the Contract, the University may, after seven days' written notice to the Contractor and without prejudice to any other remedy it may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor, the cost of correcting such deficiencies, including the cost of the Engineer's additional service made necessary by such default, neglect or failure. The Engineer shall approve both such action and the amount charged to the Contractor. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the University.

ARTICLE 3 - THE ENGINEER

3.1 Definition

- 3.1.1 The Engineer is the Director of Physical Plant Operations for the University. The term Engineer means the Engineer or his authorized representatives.
- 3.1.2 A Consultant is any person or firm who has provided specialized design services for the Project, in consultation or collaboration with the University and whose design services are represented in the Contract Documents. The Consultant, or his representative, shall have the authority to make decisions on his design to the extent authorized by the Engineer.

3.2 Administration of the Contract

- 3.2.1 The Engineer will provide the general administration of the Construction Contract, functioning through a general, routine review and examination of the work to (1) judge the Contractor's performance of the Work; (2) assist in avoiding defects, deficiencies and omissions in the Work; (3) assist in interpreting the Contract Documents; (4) make determinations on questionable or ambiguous matters relating to the Work; (5) determine amounts due the Contractor for periodic payments; and (6) make other judgements and determinations as may be necessary for the satisfactory completion of the Work to fulfill the intent of the Contract Documents.
- 3.2.2 The Engineer shall at all times be given safe and convenient access to the Work wherever it is in preparation or in progress.
- 3.2.3 All interpretations and decisions of the Engineer shall be consistent with the intent of the Contract Documents. He shall act to insure faithful performance by both the University and the Contractor as required by the Contract Documents.
- 3.2.4 The Engineer shall have authority to reject Work which does not conform to the Contract Documents. Rejected Work shall be immediately removed from production or the site. Whenever it is considered necessary or advisable to insure the proper implementation of the intent of the Contract Documents, the Engineer shall have authority to require special inspection or testing of the Work in accordance with Paragraph 7.8 whether or not such Work be then fabricated, installed or completed.

ARTICLE 4 - THE CONTRACTOR

4.1 Definition

- 4.1.1 The Contractor is the person or firm identified in the Agreement. The term Contractor means the Contractor or his authorized representative.

4.2 Review of Contract Documents

- 4.2.1 The Contractor shall carefully study and compare the Contract Documents and shall promptly report to the University any error, inconsistency or omission he may discover. The Contractor shall obtain necessary drawings, specifications, or instructions when required to satisfactorily complete any of the Work which is questionable.

4.3 Supervision and Construction Procedures

- 4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences, programs, and safety and for coordinating all portions of the Work under the Contract.

4.4 Warranty

- 4.4.1 The Contractor warrants that all materials and equipment furnished as a permanent part of the Work will be new, unless otherwise specified, and that all work will be of first quality, free from faults and in conformance with the Contract Documents. All incompetent or careless work and all work not conforming to the minimum standard of the Contract Documents may be considered defective. If required by the Engineer, furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.5 Taxes

- 4.5.1 The Contractor shall pay all sales, excise, consumer, use and other similar taxes required by law.

4.6 Permits, Fees and Notices

- 4.6.1 The University will issue all permits for work on University property without cost to the Contractor.
- 4.6.2 Where Contract Work occurs on or affects property not belonging to the University, such as streets, sidewalks or utilities on municipal rights-of-way, the Contractor shall obtain and pay for any permits, licenses or inspection fees required thereby.

4.6.3 The University will pay all Sewer Availability Charges (SAC charges) assessed by the Metropolitan Waste Control Commission.

4.6.4 The Contractor shall give all notices and comply with all codes, laws, ordinances, rules and regulations of any public authority having jurisdiction which bears on the performance of the Work.

4.7 Superintendent

4.7.1 The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the Work. The Superintendent shall be satisfactory to the University and shall not be changed except with the consent of the University, unless the Superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The Superintendent shall represent the Contractor and all communications given to the Superintendent shall be as binding as if given to the Contractor. When requested by the Contractor, important communications will be confirmed in writing.

4.8 Drawings and Specifications at The Site

4.8.1 The Contractor shall maintain at the site one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other Modifications, in good order and marked to record all changes made during construction. These shall be available to the University during construction and delivered to the University upon completion of the Work.

4.9 Responsibility for Those Performing the Work

4.9.1 The Contractor shall be responsible to the University for the acts and omissions of all his employees and all Subcontractors, their agents and employees, and all other persons performing any of the Work under a Contract with the Contractor.

4.10 Indemnification

4.10.1 To the full extent permitted by Chapter 333, Laws of Minnesota for 1983, the Contractor shall indemnify and hold harmless the University and its agents and employees from and against all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the performance, or lack of performance, of the Work, provided that any such claim, damage, loss or expense

(1) is attributable to bodily injury (including personal injury), sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and

(2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

4.10.2 In any and all claims against the University or the Consultant or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 4.10 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

4.10.3 The obligations of the Contractor under this Paragraph 4.10 shall not extend to the liability of the University or its agents or employees arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the University, its agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

4.11 Cleaning Up

- 4.11.1 The Contractor shall at all times keep the premises free from excessive accumulation of waste material, rubbish or debris caused by his employees or work. The job site shall be cleaned up by noon on Friday of each week and by noon of each day preceding a holiday. Any rubbish or debris not so removed by noon of these days may be cleaned up by the University at the Contractor's expense.
- 4.11.2 If separate contracts are awarded, as described in Article 6, and cleaning up is delayed because of a dispute between Contractors, the University may clean up and assess the cost thereof to the separate Contractors as the Engineer deems equitable.

ARTICLE 5 - SUBCONTRACTORS

5.1 Definition

- 5.1.1 A Subcontractor is a person who has a direct contract with the Contractor to perform any of the Work at the Site, or to furnish materials, equipment or systems specifically fabricated for the Work.
- 5.1.2 A Sub-subcontractor is a person or firm who has a direct or indirect contract with a Subcontractor to perform any of the Work at the site or to furnish materials, equipment or systems specifically fabricated for the Work.
- 5.1.3 Nothing contained in the Contract Documents shall create any contractual relation between the University and any Subcontractor or Sub-subcontractor.

5.2 Award of Subcontracts

- 5.2.1 Within ten (10) calendar days after the date of the Notice To Proceed, furnish in writing a list of the names of all Subcontractors proposed for use on the Work. No subcontracts shall be executed until this list has been reviewed by the University and the Contractor has received notice of the acceptance or rejection of those listed.
- 5.2.2 The proposed sub-contractors shall be established reputable firms of recognized standing with a record of satisfactory performance in the type of service to be furnished by them. The right to reject a proposed sub-contractor may be exercised by the University if the proposed sub-contractor has previously failed to perform satisfactorily, or lacks prior experience in the type of work for which he is proposed, or is of questionable integrity or financial status, or cannot demonstrate capability to furnish materials, equipment, labor or skill to perform the work required by the Contract Documents.
- 5.2.3 If the University rejects any proposed Subcontractor on this list, the Contractor shall submit the name of an acceptable alternate Subcontractor. The Contractor shall not contract with, nor use the services of, any Subcontractor who has been rejected by the University.
- 5.2.4 If the University requires a change of any Subcontractor previously accepted, the Contract Sum shall be adjusted by the difference in cost occasioned by such change and an appropriate Change Order will be issued.
- 5.2.5 The Contractor will not be required to contract with any Subcontractor to which he has a reasonable objection.
- 5.2.6 The Contractor shall not change any Subcontractor previously accepted, except for just cause. The substitute Subcontractor shall be acceptable to the University.

5.3 Subcontractual Relations

- 5.3.1 All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and Subcontractor which shall contain provisions that:
- (1) Preserve and protect the rights of the University under the Contract with respect to the Work to be performed under the subcontract so that the subcontracting thereof will not prejudice such rights.

- (2) Require that such Work be performed and guaranteed in accordance with the requirements of the Contract Documents.
- (3) Require that all claims for additional costs, extensions of time, damages for delays or otherwise with respect to subcontracted portions of the work be submitted in writing to the Contractor in sufficient time so that the Contractor may comply in the manner provided in the Contract Documents for like claims by the Contractor to the University,
- (4) Waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance described in Paragraph 11.2, except such rights as they may have to the proceeds of such insurance held by the Trustee for the insurance proceeds, and
- (5) Obligate each Subcontractor specifically to consent to the provisions of this Paragraph 5.3.

5.4 Payments to Subcontractors

- 5.4.1 The Contractor shall pay each Subcontractor, upon receipt of payment from the University, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's Work, less the percentage retained from payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments to his Subcontractors.
- 5.4.2 If the University fails to make payment for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, made at any time after the payment should otherwise have been made, for his Work to the extent completed, less the retained percentage.
- 5.4.3 The Contractor shall pay each Subcontractor a just share of any insurance moneys received by the Contractor under Article 11, and he shall require each Subcontractor to make similar payments to his Subcontractors.
- 5.4.4 The University may, on request at its discretion, furnish to any Subcontractor, if practicable, information regarding percentages of completion certified to the Contractor on account of Work done by such Subcontractor.
- 5.4.5 The University shall have no obligation to pay or to see to the payment of any moneys to any Subcontractor.

ARTICLE 6 - SEPARATE CONTRACTS

6.1 University's Right to Award Separate Contracts

- 6.1.1 The University reserves the right to award other contracts in connection with the Project.

6.2 Mutual Responsibility of Contractors

- 6.2.1 The Contractor shall cooperate with and coordinate his work with all other contractors and the University to facilitate general progress of the Project and to prevent delaying the progress of other contractors. The Contractor shall give reasonable notice and afford other contractors reasonable opportunity for the introduction and storage of their materials and equipment and the installation or execution of their work, and shall properly connect and coordinate his Work with theirs.
- 6.2.2 If any part of the Contractor's work depends upon the work of any other separate contractor, the Contractor shall inspect work already in place, and shall promptly report to the University any discrepancies or defects in such work that render it unsuitable for proper execution and results. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other contractor's work except for latent defects in same which may subsequently develop.
- 6.2.3 Should the Contractor cause delay or damage to the work or property of any separate contractor on the Project, the Contractor shall, upon due notice, settle with such other contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the University on account of any delay or damage alleged to have been so sustained, the University shall notify the Contractor who shall defend such proceedings at the Contractor's expense, and if any judgement or award against the University arises therefrom the Contractor shall pay or satisfy it and shall reimburse the University for all attorney's fees and court costs which the University has incurred.

6.3 Cutting and Patching Under Separate Contracts

- 6.3.1 The Contractor shall be responsible for any cutting, fitting and patching that may be required to complete his work except as otherwise specifically provided in the Contract Documents. The Contractor shall not endanger any work of any other Contractor by cutting, excavating or otherwise altering any work and shall not cut or alter the work of any other Contractor except with the written consent of the University.
- 6.3.2 Any costs caused by defective or ill-timed work shall be borne by the party responsible therefor.

ARTICLE 7 - MISCELLANEOUS PROVISIONS

7.1 Governing Law and Codes

- 7.1.1 The Contract shall be governed by the laws of the State of Minnesota.
- 7.1.2 The University has adopted the Minnesota State Building Code and has appointed a University Building Official, who has full authority and responsibility for enforcing and interpreting the Code and will issue permits, conduct site inspections and take other action consistent with administration of the Code.

7.2 Successors and Assigns

- 7.2.1 The University and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the University.

7.3 Written Notice

- 7.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice. Written notice to the University shall be addressed as directed in Subparagraph 2.1.2.

7.4 Claims for Damages

- 7.4.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or of any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within reasonable time after the first observance of such injury or damage.

7.5 Performance/Guaranty Bond

- 7.5.1 The University shall have the right to require the Contractor to furnish bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder if and as required in the Instructions to Bidders or elsewhere in the Contract Documents.
- 7.5.2 Final acceptance of the Work shall not relieve the Contractor nor his Surety of their obligations under this Contract, including guarantees of materials, equipment, installation or service.

7.6 Rights and Remedies

- 7.6.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

7.7 Royalties and Patents

7.7.1 The Contractor shall pay all royalties and license fees and shall secure for the University the free and undisputed right to the use of any and all patented design, process, method or product used in performance of the Work. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the University harm from loss on account thereof.

7.8 Tests

7.8.1 If the Contract Documents, or the regulations of any public authority having jurisdiction requires any of the Work to be tested, inspected or approved, the Contractor shall make all arrangements therefor and give timely notice to the Engineer of the dates of such tests, inspections or approvals so that he may observe same, if desired. The Contractor shall bear all costs of such inspections, tests or approvals except as otherwise specified in the Contract Documents. Any of the Work requiring testing, inspection or approval which is covered or otherwise made inaccessible without the consent of those requiring or making the inspection or test, shall be uncovered or made accessible by and at the expense of the Contractor.

7.8.2 If, after commencement of the Work, the Engineer determines that any work requires special testing or inspection, the Contractor shall make arrangements therefor as directed. If such special testing or inspection reveals work not in compliance with the Contract Documents or with the regulations of any public authority having jurisdiction, the Contractor shall bear all costs thereof; otherwise the University will bear such costs and an appropriate change order will be issued.

7.9 Use of University Personnel and Property

7.9.1 Unless the Contract Documents call for University property to be supplied to the Contractor, or installed or connected by the Contractor under the Contract, no property, supplies, equipment or personnel of the University shall be used by the Contractor in the performance of the Contract.

7.10 University Use or Occupancy of the Work Site

7.10.1 The University reserves the right to jointly use the Work Site with the Contractor in the performance of his duties and functions. The University reserves the right to:

- (1) enter into the Work Site at all times;
- (2) make installations of materials and equipment at appropriate times as the Work progresses;
- (3) store property in essentially completed areas;
- (4) install furniture and furnishings when spaces are at appropriate stages of completion; and
- (5) use the premises for other similar activities.

The Contractor shall coordinate the Work with the work of the University or other contractors and shall cooperate with them, to minimize undue interferences. Such activities shall not be construed as occupancy.

7.10.2 If any part, unit or the entire Work is Substantially Complete or ready for occupancy, the University may, upon notice to the Contractor, enter into and make use of the Work that is Substantially Complete or otherwise suitable for the University's purposes.

7.10.3 If the Work is not complete at the time stated in the Contract, but the Work is to a state of readiness to permit partial or full use or occupancy by the University, the University reserves the right, upon notice to the Contractor, to enter into and make use of those parts that are suitable for his needs. The Contractor shall cooperate with and coordinate his operations in completing the Work with the University to minimize disturbance of the University's programs and functions.

7.10.4 The University's beneficial use or occupancy shall not be construed as acceptance of the Work or any of its materials and equipment. Such use and occupancy shall be subject to any corrections or deficiencies, damage or omissions noted. Damage occurring after occupancy, not caused by the Contractor, will be the responsibility of the University or other contractors causing the damage.

7.11 Substitution of Products

- 7.11.1 Wherever materials, products, articles, equipment, systems or similar items are identified by reference to proprietary terms, model numbers, catalog numbers, trade names, manufacturers' names or similar reference, it is intended to establish the minimum standard or measure of quality that has been determined as requisite or intended for the Work. During bidding competition is encouraged from contractors, sub-contractors, suppliers, manufacturers and producers whose products, systems, reputation, performance and service warrant acceptance for the conditions, intent of design, requirements and other considerations of the Work. Where not specifically stated, the phrase "or acceptable equal as determined by the Engineer" shall be implied throughout.
- 7.11.2 The determination of acceptable equal products may be based on construction, design, function, type, size, capacity, performance, strength, durability, efficiency, sound level, finish, aesthetic quality, service, match to existing work, the University's standards for repair, replacement and maintenance or other characteristics and criteria. Acceptance or rejection of proposed substitute products, equipment or systems may be based on any of the factors and criteria. The final decision on acceptance or rejection of proposed substitute products, equipment or systems shall be vested in the Engineer.

ARTICLE 8 - TIME

8.1 Definition

- 8.1.1 The Contract Time is the period of time allotted in the Contract Documents for completion of the Work.
- 8.1.2 The date of the commencement of the Contract Time is the date of the University's Notice to Proceed.
- 8.1.3 The date of Substantial Completion of the Work, or designated portion thereof, is the date determined by the University when construction is sufficiently complete, in accordance with the Contract Documents, so the University may occupy the Work or designated portion thereof for the use for which it is intended.
- 8.1.4 The term day as used in the Contract Documents shall mean calendar day.

8.2 Progress and Completion

- 8.2.1 All time limits or dates stated in the Contract Documents are essential conditions of the Contract. In executing the Contract, the Contractor agrees the Contract Time is reasonable for the Work.
- 8.2.2 The Contractor shall begin the Work when stated in the Notice to Proceed. No work at the site shall be commenced until proper evidence of the required insurance has been submitted to and approved by the University. The Contractor shall carry the Work forward expeditiously with adequate forces to maintain progress in accordance with the Progress Schedule and to complete the Work within the Contract Time.
- 8.2.3 Except for constraints which may be specified, the Work shall not be suspended or shut down, but shall progress continuously and expeditiously, unless otherwise approved by the Engineer. The Contractor shall assemble materials in advance of the need or as appropriate to the progress of the Work and shall prefabricate assemblies where practicable to expedite the Work and insure timely completion thereof.
- 8.2.4 Completion dates specified or otherwise included in the Contract shall mean the date of Substantial Completion as defined in Paragraph 8.1, unless specifically stated otherwise. If the Contractor shall neglect, fail or refuse to substantially complete the Work within the time allowed, including time extensions granted by Change Order, he shall be subject to payment of actual damages suffered by the University resulting from such default and late completion.

8.3 Delays and Extensions of Time

- 8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the University, or by its agent or employee, or by any separate contractor employed by the University, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by any other cause which the University determines may justify a delay, the Contract Time may be extended by Change Order for such reasonable time as the University may determine.

- 8.3.2 Except for Changes in the Work, all claims for extensions of time shall be made in writing to the University no more than ten days after the beginning of the occurrence of the delay; otherwise they shall be waived. In the case of a continuing cause of delay only one claim is necessary. Each claim shall include substantiating evidence that the cause of the delay was beyond the Contractor's control and that a valid delay in the Work did occur as a result of this cause.
- 8.3.3 This paragraph 8.3 does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.1 Contract Sum

- 9.1.1 The Contract Sum is stated in the Agreement and is the total amount payable by the University to the Contractor for the performance of the Work under the Contract Documents.

9.2 Schedule of Values

- 9.2.1 Unless otherwise specified, the Contractor shall submit a Schedule of Values (cost breakdown) at least 14 days prior to the first Request for Payment, in such form and detail as directed by the University. Each item in the Schedule of Values shall include its proportionate share of overhead and profit. If requested, submit evidence to substantiate correctness of each or all items. The sum of all items shall equal the Contract Sum.

9.3 Progress Payments

- 9.3.1 The Contractor may make periodic requests for payment, but no more often than monthly, for work satisfactorily completed and materials suitably stored and protected at the Project site, supported by such data substantiating the Contractor's right to payment as the University may require. Requests shall be submitted in five copies on forms provided by the University. Each request shall be itemized to follow the Schedule of Values.
- 9.3.2 Payment will be made only for Work that has been satisfactorily executed or accomplished, and for materials or equipment stored on the job site and adequately protected from the elements, pilferage, vandalism or other damage and covered by bills of sale or other suitable evidence to establish the University's title to such materials and equipment.
- 9.3.3 The Contractor warrants and guarantees that title to all Work, materials and equipment covered by a Request for Payment, whether incorporated in the Project or not, will pass to the University upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances; and that no work, materials, or equipment covered by a Request for Payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the Seller or otherwise imposed by the Contractor or such other person.
- 9.3.4 Unless otherwise specified in the Contract Documents, progress payments will be made for ninety-five percent (95%) of the value of the Work satisfactorily executed, or for materials and equipment furnished, installed or suitably stored in an approved manner, including all additions or deductions to the Contract Sum approved by Change Order, and less any previous payments made to Contractor or payments made for his account.
- 9.3.5 By submitting a Request for Payment, the Contractor attests to the accuracy of the amounts requested, represents that the Work has been satisfactorily executed in compliance with the Contract Documents and he is entitled to the amount requested. By submitting a second or subsequent request, the Contractor attests that he has paid all just claims for labor, materials, equipment, subcontracts or other expense represented by all previous Requests for Payment.
- 9.3.6 No progress payment, nor partial or full use or occupancy of the Project, shall be construed as acceptance of any Work not in accordance with the Contract Documents.

9.4 Payments Withheld

9.4.1 The University may decline to approve a Request for Payment in whole or in part, to the extent necessary to reasonably protect its interest. The University may also decline to approve any Request for Payment or, because of subsequently discovered evidence or subsequent inspections, it may nullify the whole or any part of any Request for Payment previously issued, to such extent as may be necessary in its opinion to protect the University from loss because of:

- (1) defective work not remedied,
- (2) third party claims filed for reasonable evidence indicating probable filing of such claims,
- (3) failure of the Contractor to make payments properly to Subcontractors for labor, materials or equipment,
- (4) reasonable doubt that the Work can be completed for the unpaid balance of the Contract Sum,
- (5) damage to another contractor,
- (6) reasonable indication that the Work will not be completed within the Contract Time,
- (7) unsatisfactory prosecution of the Work by the Contractor,

9.5 Substantial Completion and Final Completion

9.5.1 When the Contractor determines that the Work or a designated portion thereof is substantially complete, he shall prepare for submission to the Engineer a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the the Contract Documents. When the Engineer, on the basis of an inspection, verifies that the work is substantially complete, he will establish the date of substantial completion, furnish the Contractor a list of any additional items to be completed or corrected, and arrange with the Contractor for the orderly transfer of responsibility for maintenance, heat, utilities, insurance and similar items. In no case shall Substantial Completion or occupancy relieve the Contractor from obligations under the Contract.

9.5.2 If, after Substantial Completion of the Work, Final Completion is materially delayed for cause beyond control of the Contractor, and the Engineer so affirms, the University may reduce the retainage to a sum not less than three times the value of the remaining uncorrected or incomplete parts of the Work. A request for such reduction in retainage must be accompanied by a Consent of Surety (if any) to such reduction.

9.6 Final Payment

9.6.1 Upon receipt of written notice from the Contractor that the Work is complete, and there is no other unfinished Work, the Engineer will make final inspection on the items previously noted to be completed or remedied. Final payment will not be made until the University has been fully and properly instructed in use and operation of all of the Work, equipment and systems under the contract, all manuals, bonds, guarantees and similar items have been provided, and the terms of the Contract Documents have been fulfilled in all respects.

9.6.2 Final payment, including any retained amount of the Contract Sum, will not become due until the Contractor provides all submittals the University may require to substantiate the Contractor's right to payment, such as:

- (1) affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied,
- (2) consent of Surety (if any) to final payment, and
- (3) other data establishing payment or satisfaction of all obligations, such as receipts, releases, and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the University.

9.6.3 Prior to final payment, the Contractor shall file with the University an executed Form 134, "Affidavit for Obtaining Final Settlement of Contract with the State of Minnesota", showing he has complied with M.S.A. 290.92 requiring withholding of income tax on wages at the source.

9.6.4 The making of final payment shall constitute a waiver of all claims by the University except those arising from

- (1) unsettled liens;
- (2) faulty, defective, missing, substandard or improperly installed work previously noted or appearing or found after Substantial Completion;
- (3) failure of any of the Work to comply with the requirements of the Contract Documents; or
- (4) terms of any standard or special guarantees required by the Contract Documents.

9.6.5 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and still unsettled.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.1 Safety Precautions and Progress

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

10.2 Safety of Persons and Property

10.2.1 The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

- (1) all employees on the Work and all other persons who may be affected thereby;
- (2) the public, including University staff and employees;
- (3) all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his subcontractors or sub-subcontractors;
- (4) materials, equipment or work of other contractors; and
- (5) other property at the site not designated for removal, relocation or replacement under this Contract.

10.2.2 The Contractor shall comply with all applicable codes, laws, ordinances, rules, regulations and lawful orders of any public authority, including the University's Environmental Health and Safety Division, having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

10.2.3 The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the University.

10.2.4 No explosives or other hazardous materials shall be used in the Work unless specifically approved by the University.

10.2.5 The Contractor shall provide and maintain adequate fire extinguishers or other fire fighting systems or devices in and around the construction area, available to all workers, but shall not use extinguishers that are to be installed in the Work.

10.2.6 The Contractor shall not load or permit any loading which will endanger the safety or in any way damage the Project, the Work, or any existing or adjacent facilities.

10.2.7 All damage or loss to any property referred to in Subparagraph 10.2.1 caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, shall be remedied and paid for by the Contractor, except damage or loss solely attributable to faulty Drawings or Specifications, or to the acts or omissions of the University, its agents and employees or anyone for whose acts the University may be liable, or damage or loss covered by the University's Property Insurance, described in Paragraph 11.2.

10.3 Emergencies

10.3.1 In any emergency at the site affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss and shall immediately notify the University. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Article 12 for Changes In the Work.

ARTICLE 11 - INSURANCE

11.1 Contractor's Liability Insurance

11.1.1 The Contractor shall purchase and maintain such insurance as will protect him from claims which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Such insurance shall, as a minimum, cover:

- (1) claims under workers' compensation, disability benefit and other similar employees benefit acts;
- (2) claims for damages because of Bodily Injury, (including personal injury), occupational sickness or disease, or death of his employees;
- (3) claims for damages because of Bodily Injury, (including personal injury), sickness or disease, or death of any person other than his employees;
- (4) claims for damages insured by usual personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (b) by any other person; and
- (5) claims for damages because of injury to or destruction of tangible property, other than those included in the "Builder's Risk" coverage provided specifically for the project, including loss of use resulting therefrom.

11.1.2 The insurance required by Paragraph 11.1 shall be written for not less than the limits of liability specified in Subparagraph 11.1.7, other requirements of the Contract Documents, or required by law, whichever is greater. The Contractor is solely responsible to purchase and provide adequate and additional insurance for work under the Contract, subject to the specified minimum requirements.

11.1.3 Workers' Compensation and Employer's Liability Insurance shall have "All States" endorsement. The Comprehensive General Liability and Property Damage Liability Insurance shall include coverage for

- (1) Personal Injury Liability (employment exclusion deleted),
- (2) Broad Form Property Damage,
- (3) Premises and Operations,
- (4) Elevators and Escalators (if any under this Contract),
- (5) Explosion, Collapse and Underground,
- (6) Contractual Liability, including obligations under Paragraph 4.10,
- (7) Completed Operations and Products, which shall be maintained a minimum of one year after final completion,
- (8) Independent Contractors (let or sublet work),
- (9) Owner's and Contractor's Protective Liability to protect University (may be part of CGL or separately written),
- (10) Comprehensive Automobile Liability Insurance, including owned, non-owned and hired vehicle coverage.

- 11.1.4 The insurance companies for all policies shall waive the right to assert immunity of the University as a defense to any claims made, and endorsements to policies or the certificate shall acknowledge this waiver.
- 11.1.5 Within 14 days after receipt of the Notice to Proceed or Contract execution, whichever occurs first, and prior to commencing the Work at the Site, the Contractor shall submit to the University three copies of a certificate of insurance evidencing the required coverages. The certificate shall be written on Minnesota CICC Form 701, latest edition.
- 11.1.6 The Contractor shall not allow insurance to lapse, be reduced in limits or coverage or be cancelled during the life of the Contract, including guarantee period. In event of any such change or termination, 60 days prior written notice shall be given the University and all insured parties. Certificates shall acknowledge this requirement.
- 11.1.7 Unless otherwise specified in the Contract Documents, the minimum limits for liability insurance shall be as follows, unless higher limits are required by law:
- | | |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------|
| (1) Workers' Compensation: | As required by law |
| (2) Employer's Liability: | \$100,000 |
| (3) Comprehensive General Liability and Property Damage Liability Insurance | \$1,000,000 CSL (Combined Single Limit) |
| (4) Personal Injury | \$1,000,000 CSL (Combined Single Limit) |
| (5) Comprehensive Automobile Liability Insurance including owned, non-owned and hired vehicle coverage | \$1,000,000 CSL (Combined Single Limit) |
- An Umbrella Excess Liability Insurance policy may be used to supplement or provide the full policy limits specified above.
- 11.1.8 If greater limits are required by this specific contract, that limit or limits will be stated in the Supplementary Conditions and such greater limits shall be umbrella excess of those limits required in subparagraph 11.1.7 above.

11.2 Property Insurance

- 11.2.1 The University maintains a Master Property Insurance policy that insures its "Builder's Risk" exposure as well as its owned property. Unless otherwise provided in the Contract Documents, the Work of this Contract will be insured under the master policy to 100% of the insurable value of the Work, including specified allowances, plus debris removal and architectural/engineering fees for services which may be required as a result of a loss.
- 11.2.2 Upon request, the Contractor may obtain a summary of insurance indicating the coverage, terms and exclusions of the "Builder's Risk" provision of the University's master policy. For the Work under construction the policy will insure against all risks of direct physical loss or damage to the property insured from any external cause except for the exclusions contained in the policy. In general, the policy will provide "Builder's Risk" type coverage and as a minimum will insure against loss from perils of Fire, Extended Coverage, Vandalism and Malicious Mischief, Theft, and Surface Water and up to \$10,000,000 annual aggregate Flood and \$10,000,000 annual aggregate Earthquake, except for the exclusions of the policy.
- 11.2.3 The University's master policy contains a loss deductible clause. For any loss which may occur, the Contractor shall be responsible for payment of the first five thousand dollars (\$5,000) of each and every loss occurrence.
- 11.2.4 For the Work under this Contract, the Contractor and all his subcontractors and lower tier sub-subcontractors, and other agents shall be insured jointly under the "Builder's Risk" coverage of the University's master policy.

- 11.2.5 Any property not covered by the University's Insurance policy, (such as property of independent contractors including machinery tools and equipment, and property of a similar nature not destined to become a part of the Project), shall be the Contractor's responsibility and the Contractor may self-insure or provide other insurance at his option. Any policy of insurance covering the Contractor's and subcontractor's owned or leased machinery, tools and equipment against loss by physical damage shall provide that underwriters waive their rights of subrogation against the University, Contractor, and subcontractors.
- 11.2.6 Any property owned by any of the Insured parties, destined to become a permanent part of the Project, shall be covered while off the premises or in transit to a maximum of \$500,000 per loss occurrence, subject to the same payment for losses in excess of the deductible as specified under 11.2.3 above.
- 11.2.7 The University, the Contractor, other separate Contractors, and the subcontractors and lower tier sub-subcontractors of all contractors automatically, upon entering into construction agreements in connection with this Project, waive all rights, each against others, for damages to this project caused by fire or other perils insured under the University's "Builder's Risk" Insurance, to the extent of the insurance coverage, except such rights as they may have to proceeds of insurance held by Trustees, the University or the insurer.
- 11.2.8 All losses will be adjusted by and payable to the University and the University shall act as Trustee for any proceeds paid by this insurance.

11.3 Steam Boiler and Machinery Insurance

- 11.3.1 Under a separate master policy, the University has insurance to cover loss or damage to hot water boilers, steam boilers, steam pipes, steam turbines or steam engines caused by any condition or occurrence within such boilers, pipes, turbines or engines; as well as explosion of steam boilers, steam pipes, steam turbines or steam engines if owned by, leased by, or operated under the control of the University as the Insured.
- 11.3.2 Prior to the testing, use or start up of any equipment or items as enumerated under subparagraph 11.3.1 which is provided under the Contract, the Contractor, or appropriate subcontractor, shall advise the University in ample time so it may arrange for any required inspections.
- 11.3.3 The waiver of subrogation in subparagraph 11.2.7 shall also apply to the insurance under this paragraph 11.3, the same as if repeated herein.

ARTICLE 12 - CHANGES IN THE WORK

12.1 Change Orders

- 12.1.1 The University, without invalidating the Contract, may order Changes In the Work consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes affecting the Contract Sum or the Contract Time shall be authorized by Change Order.
- 12.1.2 The cost or credit to the University for a change in the Work shall be determined in one of the following ways:
- (1) by an accepted Unit Price proposed in the Contractor's original bid,
 - (2) by a lump sum cost acceptable to the University,
 - (3) by mutually agreeable Unit Prices for the actual cost, or
 - (4) on the actual basic cost of the Change, as determined by payroll records and paid receipts, plus allowance for the Contractor's profit and overhead, subject to a predetermined maximum amount.

12.1.3 For proposed changes in the Work, the Contractor shall submit an itemized breakdown with quantities, unit prices and extended prices for each item. These items shall include:

- (1) actual labor cost listed by trade,
- (2) mandatory fringe benefits and taxes on labor,
- (3) actual costs of materials and equipment,
- (4) actual cost of subcontracted work,
- (5) overhead, profit or commission, and
- (6) sales tax on materials.

To compute the cost of a change, total the basic cost (1 through 4), add overhead, add profit or commission, then add sales tax on materials. For changes involving both extra and credit amounts, compute overhead, profit or commission only on the net difference where extra exceeds credit. Allow reasonable credit for overhead, profit or commission where the net difference results in credit. Unit prices include all costs and are not subject to mark-up for overhead, profit, commission or sales tax.

12.1.4 Material cost shall be the actual cost to the Contractor (or subcontractor) including trade discounts and quantity discounts but not including prompt payment discounts. Where material credits are involved, the credit shall be the material cost less charges incurred for return handling.

12.1.5 The allowance for overhead, profit and/or commission shall not exceed the following:

- (1) Ten percent overhead and ten percent profit to the Contractor or his subcontractor for work provided by his own employees.
- (2) Ten percent commission to the Contractor for work provided by other than his own employees.

Not more than three (3) ten percent mark-ups for overhead, profit or commission will be allowed on any change.

12.2 Latent Conditions

12.2.1 Should concealed or subsurface conditions encountered be at significant variance with the conditions indicated by the Contract Documents, or from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract, the Engineer shall be notified immediately before the conditions are disturbed. Upon the determination that a significant difference exists, such changes shall be made as determined to be necessary and the Contract Sum shall be equitably adjusted by Change Order upon claim by either party made within fourteen days after the first observance of the conditions.

12.3 Claims for Additional Cost

12.3.1 If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Engineer written notice thereof within fourteen days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor and approval to proceed issued prior to the Contractor proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed in accordance with Subparagraph 10.3.1. No such claim shall be valid unless so made. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

12.4 Minor Changes in the Work

12.4.1 The University shall have the authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be confirmed in writing if so requested by the Contractor.

ARTICLE 13 - UNCOVERING AND CORRECTION OF WORK

13.1 Uncovering of Work

13.1.1 If any Work should be installed or covered contrary to the provisions of the Contract Documents or request of the University, it must, if required by the University, be removed or uncovered for observation and replaced or recovered at the Contractor's expense. The Contractor shall give timely notice to the University of the readiness of work for observation.

13.2 Correction of Work

13.2.1 The Contractor shall promptly correct all Work rejected by the University as defective or as failing to conform to the Contract Documents whether observed before or after Completion and whether or not fabricated, installed or completed, unless the University elects to accept the Work as provided for under 13.3. The Contractor shall bear all costs of correcting such rejected Work, including the cost of additional design services thereby made necessary. Work rejected before Final Completion shall be corrected prior to Final Payment.

13.2.2 If, within one year after date of Substantial Completion, or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the University to do so unless the University has previously given the Contractor a written acceptance of such condition. The University shall give such notice promptly after discovery of the condition.

13.3 Acceptance of Defective or Non-Conforming Work

13.3.1 If, in the opinion of the University, it is expedient, or in its best interest, or should the University choose to accept defective or non-conforming Work for convenience, it may do so instead of requiring the removal and correction, in which case a Change Order will be issued to reflect an appropriate reduction in the Contract Sum for the difference in value together with an allowance for damage or loss of quality. If the amount is determined after final payment, it shall be paid by the Contractor. The amount shall be determined by the University.

ARTICLE 14 - TERMINATION OF THE CONTRACT

14.1 Termination by the Contractor

14.1.1 If the Work is stopped for a period of thirty days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, or if the Work should be stopped for a period of thirty days by the Contractor for the University's failure to make payment within 30 days after payment is due, then the Contractor may, upon ten days' written notice to the University, terminate the Contract and recover from the University payment for all Work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit. Such right to termination, however, shall not extend to material shortages as a result of market conditions, diminishing resources or other causes except a formally declared emergency specifically restricting or preventing the use of such materials.

14.2 Termination by the University

14.2.1 If the Contractor is adjudged a bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or if he refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to prosecute and complete the Work according to schedule and within the Contract Time, or if he fails to make prompt payment to Subcontractors or for materials or labor, or disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, then the University may, without prejudice to any right or remedy and after giving the Contractor and his Surety (if any) seven days' written notice, terminate the Contract (except the obligations under the Bond), take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and finish the Work by whatever method it may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished.

- 14.2.2 If the University completes the Work and the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for the University's additional engineering costs and attorney's fees, the excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the University.

ARTICLE 15 - EQUAL EMPLOYMENT OPPORTUNITY

15.1 Non-Discrimination, Equal Employment Opportunity

- 15.1.1 Unless other Equal Employment Opportunity provisions are included in the Contract Documents, the Contractor shall comply with the University of Minnesota Construction Contract Non-Discrimination requirements of this Article 15 throughout the life of the Contract.
- 15.1.2 The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, or sex. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, national origin, or sex. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship.
- 15.1.3 The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the University setting forth the provisions of this non-discrimination clause.
- 15.1.4 The Contractor shall designate an Equal Employment Opportunity Officer, who shall have authority and responsibility for the implementation of equal employment opportunity and affirmative action programs under this Contract. The Contractor shall submit for approval a written copy of its program within fifteen (15) days after receipt of notice from the University.
- 15.1.5 The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, or sex.
- 15.1.6 The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contracts or understanding, a notice to be provided by the University advising the labor union or workers' representatives of the Contractor's commitments under this policy and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 15.1.7 The Contractor shall be required to give evidence of persistent and prolonged efforts to increase the number of minority group employees. The Contractor shall make maximum use of apprentices to develop qualified minority personnel. The Contractor shall seek to fill labor shortages for apprentices and skilled journeymen by upgrading present employees including qualified minority employees.
- 15.1.8 The Contractor shall furnish to the University information and periodic reports necessary to substantiate his compliance with the requirements of this policy during the duration of the Contract. These reports shall include an appraisal of the effectiveness of the Contractor's equal employment opportunity and affirmative action programs, and shall list any factors and conditions which impede, restrict, or account for less than complete success of the program. The Contractor shall permit access to his books, records, and accounts by the University for purposes of investigation to ascertain compliance with these provisions.
- 15.1.9 Non-compliance with any requirements of these provisions shall be a breach of a condition of the Contract and will afford the University any and all rights otherwise described under the terms of the contract as applying to the breach of condition.
- 15.1.10 The Contractor shall include the provisions of this Article 15 in every subcontract, unless exempted by the provisions of this policy, so that provisions will be binding on each subcontractor. The Contractor shall take such action as may be required to enforce such provision.
- 15.1.11 Contracts and subcontracts not exceeding \$10,000 are exempt from the reporting requirements of this Article.
- 15.1.12 Except in the case of sub-subcontracts for the performance of construction work at the site of construction, provisions of this Article 15 shall not be required to be inserted in sub-subcontracts.

ARTICLE 16 - WAGE RATES

16.1 Minimum Wage Rates

- 16.1.1 For any Contract for construction, or repair of University buildings or other major structures which exceeds \$2,500 in total cost, the Contractor and his Subcontractors shall pay to their respective laborers and mechanics employed at the site at least the wage rates as determined by the Minnesota Department of Labor and Industry and issued by the Department in their Wage Rate Determination Schedules.
- 16.1.2 A copy of the Wage Rate Determinations provided by the Minnesota Department of Labor and Industry, applicable to the County in which the Project is located, is herinafter bound in the specifications for reference. The Contractor shall examine this schedule for completeness or accuracy. If any trade which will be used for the Work is omitted, or any wage rate shown is incorrect from prevailing wages of the area, such omission or discrepancy shall be reported to the University, and the Contractor shall request a clarification or supplement from the Department of Labor and Industry.
- 16.1.3 By requiring the Contractor to pay these minimum wage rates, the University does not represent that labor may be employed at the minimum hourly wage listed. The Contractor shall investigate and verify the conditions at the location of the Work, to satisfy himself as to the availability and cost of labor to perform the Work.
- 16.1.4 The Contractor shall post and maintain the Wage Rate Schedule in a conspicuous place accessible to all employees working on the Project.

BIDDING REQUIREMENTS, CONTRACT DOCUMENTS AND CONDITIONS OF THE CONTRACT

SECTION 00800 - SUPPLEMENTARY CONDITIONS

The provisions herein modify, change, delete from or add to the General Conditions in Section 00701. Where any Article, Paragraph, Sub-paragraph or Clause thereof is so modified, the unaltered portions of that Article, Paragraph, Sub-paragraph, or Clause shall remain in effect.

ARTICLE 3 - THE ENGINEER

Add the following to Article 3:

3.3 Coordination Meetings

- 3.3.1 After award of contract, a pre-construction meeting will be scheduled at a time and place designated by the Engineer to review administrative and coordinating procedures required for this Project. The Contractor shall have a responsible representative in attendance.
- 3.3.2 During construction, periodic coordination meetings will be scheduled by the Engineer. The Contractor shall have a responsible representative in attendance. The Engineer will record "minutes" of these meetings and distribute to all affected parties.

ARTICLE 4 - THE CONTRACTOR

Add the following to Paragraph 4.6:

- 4.6.5 All electrical work (including temporary electrical work) accomplished on University property shall be inspected by the University Electrical Inspector. Prior to the installation of any electrical work or wiring, the Contractor shall file a Request for Electrical Inspection with the University Building Official, Room 337 Morrill Hall, 100 Church Street S.E., Minneapolis, Minnesota 55455. Contractor shall retain at the Work Site a signed copy of the Request for Electrical Inspection and shall notify the Electrical Inspector whenever work is ready for the required inspections. A request for final inspection shall be made within 48 hours prior to completion of electrical work. Electrical inspection will be provided without cost to the Contractor as a part of the project building permit described in paragraph 4.6.1.

ARTICLE 7 - MISCELLANEOUS PROVISIONS

Add the following to Paragraph 7.11:

- 7.11.3 All proposed substitutions of materials, products, equipment or systems must be submitted to and approved by the Engineer prior to execution of the Contract. If not so submitted and approved, subsequent substitution will not be permitted unless the specified product becomes unavailable because of an act of Nature, discontinuance of manufacture, or other cause beyond the control of the Contractor.
- 7.11.4 Within ten (10) calendar days of the date of the Notice to Proceed, furnish in writing a complete list of all products, equipment or systems proposed for use in the Work. This list shall be arranged in order of specification Sections and shall include manufacturer's name, trade name, model number, catalog number or other designation to clearly identify the proposed product, equipment or system.

Add the following to Article 7:

7.12 Minnesota Preference Policy

- 7.12.1 Minnesota Laws 1984, Chapter 440, has amended earlier laws commonly known as the Minnesota Preference Law. A copy of this amended law is attached for reference.

ARTICLE 9 - PAYMENTS AND COMPLETION

Delete Paragraphs 9.2 and 9.3. Modify Paragraphs 9.4 through 9.6 inclusive to conform to the following:

Only one payment will be made to the Contractor for each purchase order and that payment will be made only upon final completion and acceptance of the Work. There will be no partial payments or withholding.

ARTICLE 11 - INSURANCE

The minimum limits of Contractor's liability insurance specified in 11.1.7 shall be reduced to \$500,000 CSL (combined single limit) and the Premises and Operations coverage shall specifically include "Asbestos Abatement and Operations relating thereto".

END OF SECTION

AN ACT

relating to commerce; removing preference for Minnesota made materials in state purchasing; clarifying definition of public contract for resident preference; amending Minnesota Statutes 1982, section 16.365; Minnesota Statutes 1983 Supplement, section 16.0721; repealing Minnesota Statutes 1982, section 16.073; Minnesota Statutes 1983 Supplement, section 16.072; and Laws 1983, chapter 336, section 3.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 1983 Supplement, section 16.0721, is amended to read:

16.0721 (PREFERENCE FOR AMERICAN MADE MATERIALS.)

Subdivision 1. (DEFINITIONS.) As used in this section, the following terms have the meanings given them:

(a) "Public agency" includes all state agencies, the University of Minnesota, the state university board, and the state board for community colleges, and any contractor acting pursuant to a contract with a public agency;

(b) "Materials" means any goods, supplies, equipment or any other tangible products or materials, including foods;

(c) "Manufactured" means mined, grown, produced, manufactured, fabricated or assembled;

(d) "Manufactured in the United States" means manufactured in whole or in substantial part within the United States or that the majority of the component parts thereof were manufactured in whole or in substantial part in the United States;

(e) "Purchase" means acquired by purchase or lease.

Subd. 2. (PURCHASE PREFERENCE.) Notwithstanding the provisions of any other law to the contrary, no materials may be purchased by a public agency for use for governmental purposes which are not manufactured in the United States, except as may be provided in this section. When all other factors are substantially equal, preference must be given first to those products which are manufactured to the greatest extent in the United States. To the extent possible, specifications must be written so as to permit the public agency to purchase materials manufactured in the United States.

Subd. 3. (EXEMPTIONS.) Subdivision 2 does not apply if the person having contracting authority in respect to the purchase determines that (1) the materials are not manufactured in the United States in sufficient or reasonably available quantities, (2) the price or bid of the materials unreasonably exceeds the price or bid of available and comparable materials manufactured outside of the United States, (3) the quality of the materials is substantially less than the quality of comparably priced available materials manufactured outside of the United States, or (4) the purchase of the materials manufactured in the United States is otherwise not in the public interest. Subdivision 2 also does not apply if the materials are purchased with a view to commercial resale or with a view to use in the production of goods for commercial sale.

Sec. 2. Minnesota Statutes 1982, section 16.365, is amended to read:

16.365 (RESIDENT PREFERENCE IN PUBLIC CONTRACTS.)

Subdivision 1. When a public contract for construction or repairs and all purchases of and all contracts for supplies, materials, and the purchase and rental of equipment is to be awarded to the lowest responsible bidder a resident bidder shall be allowed a preference as against a non-resident bidder from a state which gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the non-resident bidder. If a state agency does not give the preference to the resident bidder, the finance department shall unallot from that agency's budget an amount equal to the specific bid.

Subd. 2. Resident bidder as used in this section means a person, firm or corporation authorized to engage in business in the state of Minnesota and having a bona fide establishment for the doing of business within the state of Minnesota on the date when any bid for a public contract is first advertised or announced, and includes a foreign corporation duly authorized to engage in business in Minnesota and having a bona fide establishment for the doing of business within the state.

Subd. 3. The provisions of subdivisions 1 and 2 shall not apply to any contract for any project upon which federal funds are available for expenditure.

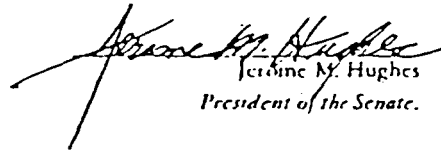
Sec. 3. (REPEALER.)

Minnesota Statutes 1982, section 16.073; Minnesota Statutes 1983 Supplement, section 16.072; and Laws 1983, chapter 336, section 3, are repealed.

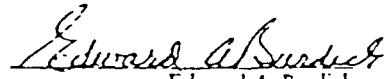
Sec. 4. (EFFECTIVE DATE.)

Sections 1 to 4 are effective the day following final enactment.



Harry A. Sieben, Jr.
Speaker of the House of Representatives.


Jerome M. Hughes
President of the Senate.

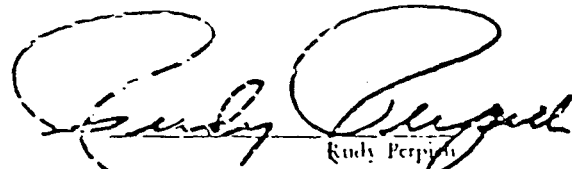
Passed the House of Representatives this 19th day of April in the year of Our Lord one thousand nine hundred and eighty-four.


Edward A. Burdick
Chief Clerk, House of Representatives.

Passed the Senate this 19th day of April in the year of Our Lord one thousand nine hundred and eighty-four.


Patrick E. Flahaven
Secretary of the Senate.

Approved
4/23/44


Rudy Perpich
Governor of the State of Minnesota.

Filed 4/23/84


Joan Anderson Grove
Secretary of State.

STATE OF MINNESOTA/DEPARTMENT OF LABOR AND INDUSTRY
Minn. Stat. 177.41 - 177.44 (1978)
CERTIFIED PREVAILING WAGES FOR COMMERCIAL CONSTRUCTION

THIS NOTICE MUST BE POSTED ON JOBSITE
IN A CONSPICUOUS PLACE

COUNTY 27 HENNEPIN

EFFECTIVE DATE OF DETERMINATION: DECEMBER 1, 1986

TO CONTRACTORS AND EMPLOYEES:

This project is covered by the Minnesota Prevailing Wage Statutes. The wage rates for the labor classifications listed below are the minimum hourly rate to be paid on this project. In some instances, future rates have been predetermined. Those rates and the effective date are also shown. Labor classifications not listed below have had no rate determined due to lack of information.

The prevailing hours of labor are eight (8) hours per day and forty (40) hours per week. All hours worked in excess of the prevailing hours shall be paid at a rate of at least one and one half (1 1/2) times the basic hourly rate paid to the employee.

Violations of the prevailing wage rates should be reported immediately to the Prevailing Wage Division, Department of Labor and Industry, 444 Lafayette Road, St. Paul, Minnesota 55101, phone (612)296-6452.

* Indicates that adjacent county rates were used for this classification determination due to insufficient data received for this county.

CODE NUMBER & CLASSIFICATION	PREVAILING RATE			FUTURE PREVAILING RATE EFFECT DATE	FUTURE PREVAILING RATE		
	BASIC RATE	FB	TOTAL HR RATE		BASIC RATE	FB	TOTAL HR RATE
101 LABORER, COMMON (GENERAL LABOR WORK)	14.25	13.25	17.50	05-01-87	14.45	13.45	17.90
102 LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	14.40	13.25	17.65	05-01-87	14.60	13.45	18.05
103 LABORER, LANDSCAPING (GARDNER, SOD LAYER AND NURSERYMAN)	7.90	11.75	9.65	05-01-87	8.00	11.80	9.80
*201 *AIR COMPRESSOR OPERATOR	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
203 DRAGLINE AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL TYPE CONTROLS	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
211 FRONT END LOADER OPERATOR UP TO AND INCLUDING 1 CU. YD.	15.82	2.90	18.72	05-01-87	16.22	3.00	19.22
213 FORKLIFT OPERATOR	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
214 FRONT END LOADER OPERATOR	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
218 *GRADER OPERATOR (MOTOR PATROL)	13.83	2.90	16.73	05-01-87	13.98	3.00	16.98
219 *GREASER (TRUCK AND TRACTOR)	12.92	2.90	15.82	05-01-87	12.92	3.00	15.92
220 HOIST ENGINEER	17.50	2.90	20.40	05-01-87	17.90	3.00	20.90
222 *MECHANIC OR WELDER	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
223 *OILERS (POWER SHOVEL, CRANE, DRAG-LINE)	14.14	2.90	17.04	05-01-87	14.54	3.00	17.54
229 *SCRAPER, 32 CU. YDS. AND OVER	16.49	2.90	19.39	05-01-87	16.89	3.00	19.89
230 *SELF PROPELLED VIBRATING PACKING OPERATOR (PAD TYPE)	13.83	2.90	16.73	05-01-87	13.98	3.00	16.98
231 *RUBBER Tired TRACTOR, BACK HOE ATTACHMENT	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
234 *TURNAPULL OPERATOR (OR SIMILAR TYPE)	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
236 *TRACTOR OPERATOR, OVER D2, TD6 OR SIMILAR H.P. WITH POWER TAKE-OFF	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
238 TRUCK CRANE OILER	14.70	2.90	17.60	05-01-87	15.10	3.00	18.10
239 CRANE OPERATOR	17.50	2.90	20.40	05-01-87	17.90	3.00	20.90
240 BOOM TRUCK	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
305 TRUCK DRIVER (HAULING MACHINERY FOR CONTRACTORS OWN USE INCLUDING OPERATION OF HAND OR POWER OPERATED WINCHES)	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
306 *SINGLE AXLE OR 2 AXLE UNIT	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
307 TANDEM AXLE OR 3 AXLE UNIT	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
401 ASBESTOS WORKER	18.82	4.44	23.26				
403 BRICKLAYER	16.38	4.28	20.66	05-01-87	16.88	4.28	21.16

CODE NUMBER & CLASSIFICATION	(27 HENNEPIN)	PREVAILING RATE			EFFECT DATE	FUTURE PREVAILING RATE		
		BASIC RATE	FB	TOTAL HR RATE		BASIC RATE	FB	TOTAL HR RATE
404	CARPENTER	16.36	4.12	20.48	05-01-87	16.86	4.12	20.98
406	CEMENT MASON	17.53	2.52	20.05	05-01-87	18.03	2.52	20.55
407	ELECTRICIAN	18.16	5.90	24.06				
408	ELEVATOR CONSTRUCTOR	18.11	5.53	23.64				
410	LATHER	14.13	6.38	20.51	05-01-87	14.63	6.38	21.01
412	IRONWORKER	17.55	3.94	21.49	05-01-87	18.05	3.94	21.99
415	*PAINTER	16.66	2.93	19.59	05-01-87	17.16	2.93	20.09
416	PILEDRIVERMAN	16.36	4.12	20.48	05-01-87	16.86	4.12	20.98
417	PIPEFITTER - STEAMFITTER	15.74	7.36	23.10				
419	PLUMBER	15.25	7.44	22.69				
420	ROOFER	16.98	3.33	20.31	05-01-87	17.48	3.33	20.81
421	SHEET METAL WORKER	19.28	3.77	23.05				
422	SPRINKLER FITTER	18.33	4.97	23.30				
423	*TERRAZZO WORKER	18.11	2.10	20.21	06-01-87	18.61	2.10	20.71
424	TILE SETTER	17.15	2.47	19.62	05-01-87	17.65	2.47	20.12
425	DRYWALL TAPER	17.66	1.87	19.53	05-01-87	18.16	1.87	20.03
430	COMMUNICATIONS SYSTEMS TECHNICIAN	15.34	4.60	19.94				
431	COMMUNICATIONS SYSTEMS INSTALLER	15.34	4.60	19.94				

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STATE OF MINNESOTA/DEPARTMENT OF LABOR AND INDUSTRY
Minn. Stat. 177.41 - 177.44 (1978)
CERTIFIED PREVAILING WAGES FOR COMMERCIAL CONSTRUCTION

THIS NOTICE MUST BE POSTED ON JOBSITE
IN A CONSPICUOUS PLACE

COUNTY 62 RAMSEY

EFFECTIVE DATE OF DETERMINATION: DECEMBER 1, 1986

TO CONTRACTORS AND EMPLOYEES:

This project is covered by the Minnesota Prevailing Wage Statutes. The wage rates for the labor classifications listed below are the minimum hourly rate to be paid on this project. In some instances, future rates have been predetermined. Those rates and the effective date are also shown. Labor classifications not listed below have had no rate determined due to lack of information.

The prevailing hours of labor are eight (8) hours per day and forty (40) hours per week. All hours worked in excess of the prevailing hours shall be paid at a rate of at least one and one half (1 1/2) times the basic hourly rate paid to the employee.

Violations of the prevailing wage rates should be reported immediately to the Prevailing Wage Division, Department of Labor and Industry, 444 Lafayette Road, St. Paul, Minnesota 55101, phone (612)296-6452.

* Indicates that adjacent county rates were used for this classification determination due to insufficient data received for this county.

CODE NUMBER & CLASSIFICATION	PREVAILING RATE			FUTURE EFFECT DATE	FUTURE PREVAILING RATE		
	BASIC RATE	FB	TOTAL HR RATE		BASIC RATE	FB	TOTAL HR RATE
101 LABORER, COMMON (GENERAL LABOR WORK)	14.25	3.25	17.50	05-01-87	14.45	3.45	17.90
102 LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	14.40	3.25	17.65	05-01-87	14.60	3.45	18.05
103 *LABORER, LANDSCAPING (GARDNER, SOD LAYER AND NURSERYMAN)	7.90	1.75	9.65	05-01-87	8.00	1.80	9.80
201 *AIR COMPRESSOR OPERATOR	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
203 DRAGLINE AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL TYPE CONTROLS	18.45	2.90	21.35	05-01-87	18.85	3.00	21.85
211 *FRONT END LOADER OPERATOR UP TO AND INCLUDING 1 CU. YD.	15.82	2.90	18.72	05-01-87	16.22	3.00	19.22
213 FORKLIFT OPERATOR	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
214 *FRONT END LOADER OPERATOR	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
218 *GRADER OPERATOR (MOTOR PATROL)	13.83	2.90	16.73	05-01-87	13.98	3.00	16.98
219 *GREASER (TRUCK AND TRACTOR)	12.92	2.90	15.82	05-01-87	12.92	3.00	15.92
220 HOIST ENGINEER	17.50	2.90	20.40	05-01-87	17.90	3.00	20.90
222 *MECHANIC OR WELDER	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
223 *OILERS (POWER SHOVEL, CRANE, DRAG-LINE)	14.14	2.90	17.04	05-01-87	14.54	3.00	17.54
229 *SCRAPER, 32 CU. YDS. AND OVER	16.49	2.90	19.39	05-01-87	16.89	3.00	19.89
230 *SELF PROPELLED VIBRATING PACKING OPERATOR (PAD TYPE)	13.83	2.90	16.73	05-01-87	13.98	3.00	16.98
231 *RUBBER Tired TRACTOR, BACK HOE ATTACHMENT	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
234 *TURNAPULL OPERATOR (OR SIMILAR TYPE)	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
236 *TRACTOR OPERATOR, OVER D2, TD6 OR SIMILAR H.P. WITH POWER TAKE-OFF	16.37	2.90	19.27	05-01-87	16.77	3.00	19.77
237 *POWER ACTUATED AUGERS AND BORING MACHINE	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
238 TRUCK CRANE OILER	14.70	2.90	17.60	05-01-87	15.10	3.00	18.10
239 CRANE OPERATOR	17.50	2.90	20.40	05-01-87	17.90	3.00	20.90
240 *BOOM TRUCK	17.33	2.90	20.23	05-01-87	17.73	3.00	20.73
305 *TRUCK DRIVER (HAULING MACHINERY FOR CONTRACTORS OWN USE INCLUDING OPERATION OF HAND OR POWER OPERATED WINCHES)	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
306 SINGLE AXLE OR 2 AXLE UNIT	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
307 TANDEM AXLE OR 3 AXLE UNIT	14.80	2.55	17.35	05-01-87	15.20	2.55	17.75
401 ASBESTOS WORKER	18.82	4.44	23.26				

CODE NUMBER & CLASSIFICATION (62 RAMSEY)	PREVAILING RATE			EFFECT DATE	FUTURE PREVAILING RATE		
	BASIC RATE	FB	TOTAL HR RATE		BASIC RATE	FB	TOTAL HR RATE
403 BRICKLAYER	16.38	4.28	20.66	05-01-87	16.88	4.28	21.16
404 CARPENTER	16.36	4.12	20.48	05-01-87	16.86	4.12	20.98
406 CEMENT MASON	17.53	2.52	20.05	05-01-87	18.03	2.52	20.55
407 ELECTRICIAN	17.05	6.57	23.62				
408 *ELEVATOR CONSTRUCTOR	18.11	5.53	23.64				
410 *LATHER	14.13	6.38	20.51	05-01-87	14.63	6.38	21.01
412 IRONWORKER	17.55	3.94	21.49	05-01-87	18.05	3.94	21.99
415 PAINTER	16.61	2.95	19.56	05-01-87	17.11	2.95	20.06
416 *PILEDRIVERMAN	16.36	4.12	20.48	05-01-87	16.86	4.12	20.98
417 PIPEFITTER - STEAMFITTER	16.72	6.41	23.13				
419 PLUMBER	17.13	5.89	23.02				
420 ROOFER	16.98	3.33	20.31	05-01-87	17.48	3.33	20.81
421 SHEET METAL WORKER	19.28	3.77	23.05				
422 SPRINKLER FITTER	18.33	4.97	23.30				
423 TERRAZZO WORKER	18.11	2.10	20.21	06-01-87	18.61	2.10	20.71
424 TILE SETTER	17.15	2.47	19.62	05-01-87	17.65	2.47	20.12
425 DRYWALL TAPER	16.61	2.95	19.56	05-01-87	17.11	2.95	20.06
430 COMMUNICATIONS SYSTEMS TECHNICIAN	15.34	4.60	19.94				
431 COMMUNICATIONS SYSTEMS INSTALLER	15.34	4.60	19.94				

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF THE WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The General and Supplementary Conditions and the General Requirements of other Division 1 Sections apply to all work of this Section.
- B. The Work of the Contract shall consist of the complete abatement of asbestos-containing material in or from designated property of the University of Minnesota.
- C. Requests for quotation will be issued to bidders from time to time as the needs of the University require. Each request for quotation will identify the location and scope of work required, the type of abatement (removal or encapsulation) required, the time schedule for performing the work, the time and date for a "walk-through" inspection of the work area, the time and date bids are due, and other pertinent information.
- D. The successful bidder will be issued a purchase order for the work involved. Site conditions will vary with each purchase order, and may include work in tunnels and crawl spaces, scaffold work, work on hot water and live steam lines, and other work conditions not presently known. The work conditions for each purchase order will be discussed at the "walk-through inspection and at the pre-abatement meeting (see Section 02080 - Asbestos Abatement).
- E. Except as specifically noted, the Contractor shall provide and pay for:
 - 1. All labor,
 - 2. All materials and equipment incorporated in the Work,
 - 3. All tools, construction equipment and machinery to perform the Work,
 - 4. All utilities and heat required for the Work, and
 - 5. All other miscellaneous facilities, coordination and related services necessary for the proper execution and satisfactory completion of the Work.
- F. The lack of specific reference to any part or parts necessary to complete the work shall not relieve the Contractor of the responsibility to provide such parts or to perform a complete job.

1.02 WORK SITE LOCATION AND ACCESS

- A. The Work Site location will be designated in each purchase order. The work for each purchase order will be limited to a single building, or to buildings adjacent or connected to each other, but it may occur on different floors or in different locations within the specified building or buildings.
- B. Make arrangements with the Engineer for a construction traffic routing through the building, for use of elevators, for scheduling deliveries to the building, for stationing trucks for debris removal and for other items which require coordination to accommodate the University's concurrent use of the site and areas adjacent thereto.

1.03 CONTRACT TIME

- A. The work shall be performed under the direction of the Engineer according to the schedule in the request for quotation as further developed by the Engineer following the pre-abatement meeting.
- B. Contractor will be notified by Engineer when asbestos abatement work is to be performed. Such notification will be by telephone call to Contractor, with written confirmation delivered as soon as possible.
- C. The nature of the work requires that Contractor be "on-call" for quick service. Normally, the time between notification and beginning of work on site will be three or more days, but Contractor shall be available to begin work on one day's notice.

1.04 TRAFFIC AND PARKING

- A. Comply with all posted regulations, signs and directions regarding traffic, parking or loading-unloading.
- B. Arrange for loading-unloading operations in off-street alleys, driveways, side streets or designated "Loading Zones". If no other alternative is available, permission will be granted for temporary short term stops (except during rush hours) at the curb in zones designated "No Parking", provided that the name of the Contractor, Sub-contractor or Supplier is permanently displayed on the delivery truck. Regulations will be strictly enforced in zones designated "No Parking-No Stopping-Any Time".
- C. Parking for personal vehicles of construction personnel is available in University parking lots at regular daily fee parking rates.

1.05 CARE AND USE OF PREMISES

- A. The Contractor shall be fully responsible for the care of the Work Site within the defined construction limits, subject to the rights of the University and University personnel employed thereon.
- B. Confine all construction-related activity to the defined construction limits unless a variance is issued in writing by the Engineer. The University will continue occupancy of surrounding areas for its normal usage and the Contractor shall not interfere with this occupancy and normal usage.
- C. Protect all existing structures, sidewalks, driveways, trees, shrubbery, lawns or other improvements on or adjacent to the site from damage by any operation in connection with the contract. Repair or replace, at Contractor's expense, all such damage however caused.
- D. Protect utilities or services shown, or not shown but encountered, from damage during excavation or other work unless or until they are abandoned. If damaged, restore to condition existing prior to damage. If shown to be moved or abandoned, protect in place until new or relocated facility is provided, tested and placed in use.
- E. Provide full protection of building and occupants from deleterious results of construction-related activity. Repair or replace all portions of building or contents damaged during construction. The normal occupancy of the building outside the construction area shall not be disturbed. All corridors, hallways, stairs, exits, entrances, sidewalks and drives shall be kept clear and free of Contractor's equipment, material or debris.
- F. Provide barricades, general illumination, warning lights, audible warning devices, and warning signs according to code requirements to inform construction personnel and the general public of the hazard.

1.06 TEMPORARY UTILITIES

- A. The University will provide water without charge from existing service. Arrange with Engineer for point of service and provide all piping, hoses or equipment necessary to extend to point of use.
- B. The University will provide 120 volt single-phase electric power without charge from existing outlets. Arrange with Engineer for point of service and provide all wiring and equipment necessary to extend to point of use. Contractor shall arrange and pay for his own source of three-phase power or higher voltage power if such may be required.
- C. Reasonable care and discretion shall be exercised in the use of University-furnished utilities to avoid waste and conserve energy. Operate, maintain and protect temporary utilities in a manner that will prevent overloading, freezing, contamination, flooding or similar deleterious conditions.
- D. An existing telephone, where available and specifically designated by the Engineer, may be used by the Contractor for occasional OUTGOING local calls only. Do not charge toll calls to a University telephone. The University will not, under any condition, provide answering service for incoming calls.
- E. An existing toilet room, where available and specifically designated by the Engineer, may be used by Contractor's personnel. Any worker committing a nuisance in the area shall, upon the request of the Engineer, be discharged immediately.

1.07 CLEANING UP

- A. At the completion of the work, and before acceptance and payment, the Contractor shall remove all of his rubbish from and about the building and premises and all his tools, scaffolding, surplus materials, temporary structures, etc., and leave his work "broom clean" or its equivalent. He shall restore and replace in a suitable manner all property both public and private which has been damaged or removed in the performance of this contract. The "site" of the Work is meant to include portions of any and all buildings or structures, and adjacent work. Any rubbish or debris not so removed may be cleaned up by the University at the Contractor's expense.

1.08 FIRE SAFETY

- A. Maintain proper fire extinguishing devices and employ safety precautions during the course of the work.
- B. Combustible debris shall not be allowed to accumulate (see General Conditions 4.10). Smoking by workmen shall be confined to designated safe areas. Maintain adequate fire extinguishers in fully-charged usable condition.

1.09 WORK BY OTHERS

- A. The University may, by separate contract or by use of its own personnel, perform the following related work:
 - 1. Reinsulation or temporary insulation of existing piping.
 - 2. Addition to, or remodeling of, the property covered under each purchase order.
- B. Refer to General Conditions Article 6 for required coordination with separate contractors.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01015 - DEFINITIONS

- Abatement - Procedures to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, repair, demolition and renovation activities.
- Air monitoring - The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air P&CAM 239 or Method 7400. For clearance air monitoring, electron microscopy methods may be utilized for lower detectability and specific fiber identification.
- Asbestos - The asbestiform varieties of serpentine (chrysotile) rie beckite (crocidolite), cummingtonite - grunerite (amosite), anthrophyllite, actinolite, and tremolite.
- Asbestos containing material (ACM) - Material composed of asbestos of any type and in an amount greater than 1% by weight, either alone or mixed with other fibrous or non-fibrous materials.
- Authorized visitor - The Building Owner (and any designated representatives) and any representative of a regulatory or other agency having jurisdiction over the project.
- Contractor - The individual or business with which the University arranges to perform the asbestos abatement.
- Decontamination enclosure system - A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers and equipment.
- DEHS - Department of Environmental Health and Safety, University of Minnesota.
- EPA - Environmental Protection Agency.
- Fixed object - A piece of equipment or furniture in the work area which cannot be removed from the work area.
- Friable asbestos - Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.
- Glovebag technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contained (plasticized) work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic), two inward projecting longsleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. All workers who are permitted to use the glovebag technique must be highly trained, experienced and skilled in this method.
- HVAC - Heating, ventilation and air conditioning system.
- HEPA filter - A high efficiency particulate air filter capable of removing particles >0.3 microns in diameter with 99.97% efficiency.
- Movable object - A piece of equipment or furniture in the work area which can be removed from the work area.
- Negative pressure ventilation system - A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.
- NIOSH - National Institute for Occupational Safety and Health.
- OSHA - Occupational Safety and Health Administration.
- Outside air - The air outside building and structures.
- Plasticize - To cover floors and walls with plastic sheeting.
- Prior experience - Experience required of the contractor on asbestos projects of similar nature and scope to insure capability of performing the asbestos abatement in a satisfactory manner. Similarities shall be in areas related to material composition, project size, abatement methods required, number of employees and the engineering, work practice and personal protection controls required.

01015-1 cont'd

Removal - The stripping of any asbestos containing materials from surfaces or components of a facility.

Surfactant - A chemical wetting agent added to water to improve penetration.

Visible emissions - Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Wet cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with water and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Work area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area which has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area which has not been plasticized nor equipped with a decontamination enclosure system.

Worker decontamination enclosure - A decontamination system consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and contained doorways. This system is used for all work entries and exits to the work area and for equipment and waste passage.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01016 - TRAINING AND MEDICAL MONITORING

1.01 TRAINING

- A. Training shall be provided by the Contractor to all employees or agents who may be required to disturb asbestos containing or asbestos contaminated materials for abatement and auxiliary purposes and to all supervisory personnel who may be involved in planning, execution or inspection of abatement projects.
- B. Training shall consist of not less than 40 hours of certified classroom training, acceptable to the University, and shall provide, at a minimum, information on the following topics:
 - 1) The health hazards of asbestos including the nature of various asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency period for disease and health basis for standards.
 - 2) The physical characteristics of asbestos including fiber size, aerodynamic properties, physical appearance and uses.
 - 3) Employee personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face-piece-to-face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g. facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection and hard hats.
 - 4) Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.
 - 5) Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.
 - 6) Work practices for asbestos abatement including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste clean-up, storage and disposal procedures.
 - 7) Personal hygiene, including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking and chewing in the work area.
 - 8) Special safety hazards that may be encountered including electrical hazards, air contaminants (CO, wetting agents, encapsulants, materials from Owner's operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress and noise.
 - 9) Workshops affording both supervisory personnel and abatement workers the opportunity to see (and experience) the construction of containment barriers and decontamination facilities.
 - 10) Supervisory personnel shall, in addition, receive training on contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection, medical surveillance programs, EPA, OSHA (and State) recordkeeping requirements, and other topics as requested by the Engineer.
- C. Training shall be provided by individuals qualified by virtue of experience and education to discuss the topic areas in Medical Monitoring.
- D. Training shall have occurred within 12 months prior to the initiation of abatement activities.
- E. Furnish documentation of training for all personnel involved in each asbestos removal project. Documents shall provide the following information:
 - 1) Outline of material covered
 - 2) Date of instruction
 - 3) Names and qualifications of instructors
 - 4) Types and lengths of training activities
 - 5) Signatures of those who received training

1.02 MEDICAL MONITORING

- A. Medical monitoring shall be provided by the Contractor to any employee or agent that may be exposed to asbestos in excess of background levels during any phase of the abatement project. (Due to the synergistic effects between smoking and asbestos exposure, it is highly recommended that only non-smokers be employed for tasks which may require them to enter asbestos contaminated atmospheres.)
- B. Medical monitoring shall include at a minimum:
 - 1) A work/medical history to elicit symptomatology of respiratory disease.
 - 2) A chest x-ray (posterior - anterior, 14 x 13 inches) evaluated by a Certified B-reader.
 - 3) A pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV), administered and interpreted by a Certified Pulmonary Specialist.
- C. Employees shall be given an opportunity to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator. Examining physicians shall be aware of the nature of respiratory protective devices and their contributions to breathing resistance. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he will be required to perform, as well as special workplace conditions such as high temperatures, high humidity, and chemical contaminants to which he may be exposed.

END OF SECTION

DIVISION 2 - SITEWORK

SECTION 02080 - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The General and Supplementary Conditions and the General Requirements of Division 1 apply to all work of this Section.
- B. The work of this Section includes the removal, proper handling and disposition of all friable asbestos-containing materials as described herein. This material may occur as:
 - 1. Pipe insulation
 - 2. Mechanical equipment insulation
 - 3. Sprayed-on thermal insulation
 - 4. Sprayed-on acoustic treatment
 - 5. Panels, tiles, sheets
 - 6. Putties, calks, ropes, mastics, fabrics
 - 7. Dust and fibers on surfaces, in concealed areas, and in the dirt of crawl spaces
- B. Location and type of asbestos involved will generally be identified via bulk samples taken on the project site and tested by the Industrial Hygiene staff of the University Department of Environmental Health and Safety. Test results will be furnished to the Contractor. Contractor may, if he desires, take and analyze additional bulk samples in the work site. Such sampling and analysis shall be at Contractor's expense.
- D. All work shall be in accordance with applicable Federal, State and University regulations. Specific reference is made to the following:
 - 1. 29 CFR 1910. 1001 General Industry Safety and Health Standards
 - 2. 29 CFR 1910. 134 Respiratory Protection
 - 3. 29 CFR 1910. 145 Specifications for Accident Prevention Signs and Tags
 - 4. 29 CFR 1910.2 Access to Employee Exposure and Medical Records
 - 5. 29 CFR 1926 Construction Industry
 - 6. 29 CFR 1919. 1200 Hazard Communication
 - 7. 40 CFR 61, Subparts A&B General Provisions, National Emission Standard for Asbestos
 - 8. ANSI Z9.2-79 Fundamentals Governing the Design and Operations of Local Exhaust Systems
 - 9. ANSI Z88.2-80 Practices for Respiratory Protection
- E. Copies of the most recent editions of all standards, codes and other applicable documents shall be maintained at the work site by the Contractor.
- F. Restore the work area and auxiliary areas utilized during the abatement process to conditions equal to or better than original. Air samples will be taken from abatement areas and analyzed by the University prior to and following abatement activities to verify this condition being met. Sampling will be of the aggressive type, utilizing a portable fan to stir up settled particles which may occur on floor or other surfaces.

1.02 QUALITY ASSURANCE

- A. Furnish documentation of successful experience, including location of work, scope of work, name and address of purchaser, and materials and methods used for each job.
- B. Contractor shall employ only competent persons trained, knowledgeable and qualified in the techniques of asbestos abatement.

1.03 SUBMITTALS

- A. The Contractor shall submit the following after award of contract and prior to start of any work:
 - 1. Satisfactory proof that required permits, site location and arrangements for the transport and disposal of asbestos containing waste materials have been made.
 - 2. A copy of handling procedures to be utilized for asbestos disposal at the land fill, signed by the land fill owner.
 - 3. Satisfactory documentation that Contractor's employees have received at least the minimum training required by this specification.
 - 4. Satisfactory documentation of Contractor's general asbestos abatement policy and procedures.

5. Satisfactory documentation that Contractor's employees who may be exposed to airborne asbestos in excess of 0.1 fiber/cc have been provided an opportunity to be medically monitored to determine whether or not they are physically capable of working while wearing the required respirator without suffering adverse health effects and that they have been effectively fit tested for the required respirator. Also document compliance with the requirements of 20 CFR 1010.100(J) (personnel medical monitoring).

- B. Submit documentation of changes to this information as they occur.

1.04 PRE-ABATEMENT MEETING

- A. The University shall convene a pre-abatement meeting with the Contractor to review site conditions and procedures relating to the work to be accomplished. In attendance shall be a Physical Plant representative, University DEHS testing and monitoring personnel, the Contractor and the Contractor's on-site supervisory personnel.
- B. Provide a detailed plan of the work procedures proposed for the removal and disposal of asbestos containing materials. This plan shall include the locations (as required) of asbestos control areas, change rooms, and signage; sequencing and scheduling of proposed work, disposal plan, type of wetting agent to be used, and a description of the method to be employed in order to control pollution. Include a list of employees who will participate in this project, including a summary of experience, training and responsibilities of each.

1.05 PROTECTION

- A. Contractor shall be responsible for security of the work area.
- B. Contractor shall require that all persons entering the work area shall wear appropriate respiratory equipment and protective clothing, as directed by the environmental concentrations of asbestos fibers quantified during monitoring. There shall be no exceptions to this rule.
- C. The Contractor shall provide, as needed, a respirator and disposable coveralls, headcover and footwear to the Engineer and other authorized visitors required to gain entrance into the Work Site during the progress of asbestos removal.
- D. Do not proceed with removal sequence of material until the affected area has been sealed off. All preparation work must be approved by DEHS before proceeding with any asbestos removal.
- E. The Contractor shall provide an adequate decontamination area contiguous to the work site consisting of three rooms or chambers. Each area shall be clearly labeled and separated from other areas by opaque plastic sheet or other methods designed to control air transfer and fiber penetration as people, equipment and contaminated waste containers pass through chambers. The decontamination area shall be as follows:
 - 1) Clean Room: No asbestos contaminated items shall enter this room. Personnel shall dress in clean working clothes or coverall and obtain clean respirator protection here.
 - 2) Shower Room: Used for transition from clean room to contaminated work space and for showering upon leaving work space.
 - 3) Equipment Room: Work equipment and all contaminated clothing not disposed of shall be stored here.
- F. Air filtration system shall be a High Efficiency Particulate Absolute (HEPA) type. Exhaust from the system shall be to the outside of the building to create a negative air pressure condition on the inside of the isolation area. HEPA filtering system shall have capacity to change air in the work area every fifteen (15) minutes.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Polyethylene sheeting for walls and stationary objects shall be a minimum of 4 mils thick. For floors and all other uses, sheeting of at least 6 mil thickness shall be used in widths selected to minimize the frequency of joints. Polyethylene sheeting utilized for worker decontamination enclosure shall be opaque white or black in color.
- B. Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester mixed in a proportion of 1 fluid ounce to 5 gallons of water, or equivalent conforming to ASTM D1331-56.

- C. Tape shall be high quality "duct-tape" type.
- D. Disposal bags shall be 6 mil polyethylene labeled as required by OSHA requirement 29 CFR 1910.1001(g)(2)(11).
- E. Drums shall be sealable fiber or metal, uncontaminated from previous uses, and shall meet DOT specification CFR 49 for transport of hazardous material. Drums may be re-used if bags inside have not been broken or damaged before emptying at disposal site. Contaminated drums must be buried with sealed plastic bags at the approved disposal site.

2.02 EQUIPMENT - TOTAL CONTAINMENT

- A. A sufficient quantity of negative pressure ventilation units equipped with HEPA filtration and operated in accordance with ANSI 29.2-79 (local exhaust ventilation requirements) and EPA guidance document EPA 560/5-83-002 Guidance for Controlling Friable Asbestos Containing Materials in Buildings Appendix F: "Recommended Specifications and Operating Procedures for The Use of Negative Pressure System for Asbestos Abatement" shall be utilized so as to provide one work area air change every 15 minutes, or an agreed upon reasonable air exhaust, based on the size of the enclosed space.
- B. Respirators used for the removal and/or demolition of asbestos materials may be Type C continuous flow or pressure-demand class supplied air respirators as approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupation Safety and Health (NIOSH), Department of Health and Human Services. Other types of respirators may be used subject to requirements of applicable requirements of EPA, OSHA and NIOSH. Selection of respirators will be discussed at pre-abatement meeting.
- C. Full body disposable protective clothing, including head, body and foot coverings consisting of material impenetrable by asbestos fibers (Tyvek or equivalent) shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.
- D. Additional safety equipment (hard hats, eye protection, safety shoes, disposable PVC gloves) as necessary, shall be provided to all workers and authorized visitors.
- E. A sufficient supply of HEPA filtered vacuum systems shall be available during clean-up.
- F. Brushes utilized for the removal of loose asbestos containing material shall have non-metallic (nylon, fiber) bristles.
- G. A sufficient supply of HEPA filtered vacuum systems shall be available during clean-up.

2.03 EQUIPMENT - LOCAL CONTAINMENT (GLOVEBAG)

- A. Respirators used for the removal and/or demolition of asbestos materials may be Type C continuous flow or pressure-demand class supplied air respirators as approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupation Safety and Health (NIOSH), Department of Health and Human Services. Other types of respirators may be used subject to requirements of applicable requirements of EPA, OSHA and NIOSH. Selection of respirators will be discussed at pre-abatement meeting.
- B. Additional safety equipment (hard hats, eye protection, safety shoes, disposable PVC gloves) as necessary, shall be provided to all workers and authorized visitors.
- C. Brushes utilized for the removal of loose asbestos containing material shall have non-metallic (nylon, fiber) bristles.

PART 3 - EXECUTION

3.01 SITE PREPARATION

- A. In preparation for asbestos removal, electric power, heating, cooling and ventilation components that are in, supply, or pass through the work area shall be shut down and locked out. Seal all intake and exhaust openings in the work area with tape and 6 mil polyethylene.
- B. Engineer will designate certain steam mains occurring in the work area which can not be shut down and will necessarily have to be worked "hot". The extent of this work will be discussed at the pre-bid meeting. Contractor shall take proper precautions to protect his employees from burns and other dangers.

- C. Arrange for temporary electric lighting of work areas, including ground fault interruption protection. Negative pressure ventilation system shall exhaust to outside of building, using extension ductwork as required. Such ductwork shall have sealed joints.
- D. Seal off, as directed, all openings between the work area and uncontaminated areas outside the work area with 4 mil polyethylene sheeting and tape (2 layers on walls). Floor shall be covered with 2 layers of 6 mil sheeting; additional protection being provided where carpeting, hardwood flooring or tile floors may be damaged. All joints of polyethylene sheeting shall be completely sealed with tape - sprayed adhesive or other fasteners will not be accepted as an effective joint seal.
- E. Plans for worker decontamination enclosure systems for this project, including layout and proposed materials, shall be submitted as shop drawings by the Contractor for approval by the University prior to starting work. Decontamination enclosure shall contain a clean room, a shower, and a dirty room.
- F. Commencing with pre-removal tests, and at least daily through the removal process (including final cleanup), Contractor shall conduct air monitoring tests to insure compliance with applicable EPA and OSHA Regulations and University requirements. Transmit monitoring test results to Engineer promptly each week.

3.02 DECONTAMINATION SEQUENCE - TOTAL CONTAINMENT

A. ENTRY SEQUENCE

- 1. Workers change in clean room from street clothes into protective disposable clothing, footwear and head covering and then put on respirator. Workers can then proceed to isolation area.
- 2. No smoking, eating or drinking is to take place once beyond the clean room. Prior to smoking, eating or drinking, workers will fully decontaminate as described in exit sequence below.
- 3. Maintain a daily log of all persons entering the isolated work area. This includes all Contractor's employees, University personnel or others, whether entry is required or accidental.

B. EXIT SEQUENCE

- 1. Before leaving isolated work area, workers shall remove all gross contamination and debris from clothing, footwear and head covering.
- 2. Workers then proceed to dirty room and remove all clothing, footwear and head covering except respiratory protection equipment. Disposable items are placed in plastic bags for disposal with other contaminated material.
- 3. Workers then rapidly proceed into the shower room and wash with soap and water, removing the respiratory protection equipment last to prevent inhalation of fibers. Dispose of filters as contaminated material.
- 4. After showering, workers move into the clean room and dress in either new protective clothing for another entry or street clothing if leaving work area.
- 5. If re-usable respirators are used, they shall be examined for damage or missing parts, cleaned, air dried, equipped with new filters and placed in clean room. Disposable respirators shall be discarded as contaminated material.

3.03 ASBESTOS REMOVAL

- A. Where glovebag techniques are employed, follow manufacturer's instructions for use of bag.
- B. Friable asbestos material shall be sprayed with water containing wetting agent. Use only a fine spray of this solution to prevent unnecessary emission of airborne asbestos fibers.
- C. Remove asbestos material in small sections, taking care not to damage substrate. Pack material into labeled plastic bags held in drums prior to starting the next section to prevent the material from drying or from being walked on. The outside of all containers shall be wet-cleaned before leaving equipment area.

- D. Air filtration system shall be operational and activated before starting any work in the isolated work area. Continue to operate HEPA filter for 24 hours per day while work is in progress and until the fiber counts in the isolation area have dropped below 0.1 Fiber/cm³ during the final clean-up operations. Filters from HEPA system shall be disposed of as asbestos contaminated material.

3.04 CLEAN-UP - TOTAL CONTAINMENT

- A. Air filtration system and air monitoring shall continue while Contractor cleans all surfaces in the work area. The clean-up procedure shall consist of:
 - 1. Collect and containerize all visible asbestos residue utilizing rubber dust pans and squeegees.
 - 2. Wet clean all surfaces in the work area using rags, mops or sponges as required.
 - 3. Remove exposed layer of polyethylene from walls and floor.
- B. After a 24-hour settling period, the work area shall be HEPA vacuumed and then wet-cleaned again and inspected. Any visible residue will require a repeat of the 24-hour settling period/cleaning cycle.
- C. Clearance air monitoring tests in the work area will be conducted by DEHS to verify compliance with a maximum concentration of 0.01 fibers/cc. Aggressive monitoring techniques will be utilized.
- D. All barriers and entries shall remain sealed until satisfactory air monitoring test results are achieved. After verification of compliance, all remaining plastic sheeting, tape and debris shall be systematically removed and disposed of as contaminated materials and the entire area shall be given a light coating of water-based sprayed-on encapsulant. The work area may then be returned to normal operation.

3.05 CLEAN-UP - GENERAL

- A. Re-establishment of the work area and its systems shall include:
 - 1. Complete removal of all material and equipment employed in this work.
 - 2. Replacement of all fixtures or equipment removed or disconnected prior to start of work.
 - 3. Repair of any damage to surfaces, fixtures or equipment resulting from asbestos removal work.
 - 5. Re-establish mechanical and electrical systems to work area that were disconnected or de-activated prior to start of work.

3.06 DISPOSAL OF ASBESTOS-CONTAINING WASTE

- A. Contractor shall transport all asbestos materials and asbestos contaminated waste in labelled and sealed drums to an approved landfill in accordance with Federal and State regulations governing transportation of hazardous waste.
- B. The drums may then be unsealed, the plastic bags removed and placed in the landfill. If bags are damaged they shall be left in the drum and the entire contaminated drum shall be buried. Drums shall be used only for transporting asbestos contaminated material.

3.07 FINAL SUMMARY REPORT

- A. Upon completion of work on each purchase order, Contractor shall submit a complete written summary report. This report shall be a narrative description of the Contractor's procedures used in the work and shall include, or refer to, all documentation specified to be submitted prior to or during the progress of the work.

END OF SECTION