

165A

UNIVERSITY OF KENTUCKY
DIVISION OF PURCHASING SERVICES

Invitation No.: CCK-398-9 Date: March 6, 1990

Title: Project #431.6 Robotics Facility Modifications

ADDENDUM NO. One (1)

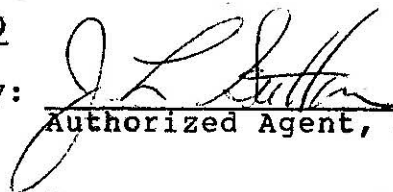
Addendum Number One shall clarify and/or modify the original bid documents as issued.

Bidder must acknowledge receipt of this and any addenda either with bid or by separate letter. Acknowledgment must be received in the Office of Purchasing Services, Service Building, University of Kentucky not later than 2:00 p.m. on 3-13-90. If by separate letter, the following information must be placed in the lower left hand corner of the envelope:

Invitation No. CCK-398-9

Title: Project # 431.6 Robotics Facility Modifications

Opening Date: March 13, 1990

By: 
Authorized Agent, Purchasing Services

Receipt Acknowledged _____
Firm

By: _____

Addendum #1

RE: Robotics Facility Modifications
University of Kentucky
Lexington, Kentucky

1. Floor to floor heights in the Robotics Facility are as follows:

ROBOTICS

Ground Floor	959'-4"
First Floor	976'-6"
Second Floor	992'-6"
Third Floor	1008'-6"
Fourth Floor	1024'-6"
Fifth Floor	1040'-6"
Roof	1056'-6"

2. Due to a time extension in the bidding of the owner supplied HVAC equipment the following weights and dimensions are being supplied based on one of the specified HVAC vendors cut sheets.

Indoor Unit 2500 #'s
Outdoor Unit 900 #'s

Outdoor Unit 132" Long x 44" Wide
Glycol Pump 33" Long x 33" Wide

3. Drawings - Sheets A-43, A-44, A-45: The HVAC supply diffusers and return air grills at the storage rooms #307, #407, and #507 are to be reworked on the enclosed "ADD-1A".
4. See attached clarification drawing "ADD-2A" for in floor electrical cable tray lengths required.
5. Transformer Elevation - Elevate 112.5 KVA transformer by mounting on floor mounted steel structure adjacent to existing transformer. Structure to be welded 3"x 3" x 1/4" angle iron with bracing. Weld 4" x 4" x 1/4" steel plates to bottom of angle iron legs, bolt to floor slab. Top of structure to be 6" above existing adjacent transformer.
6. Ice Maker Receptacle Relocation - In Kitchen 327, relocate existing junction box and 120 volt circuit from existing location at 48" AFF to 18" AFF directly below. Install duplex receptacle. The subject junction box is located at northwest corner of kitchen and originally was intended for a dishwasher.
7. Any existing casework that is to be removed shall be turned over to the University.

8. Amend 16722-1 - Part 1.02 - 1 to read as follows:

"Authorized entry to a secured room will require the following procedure. Authorized User with Locking & Unlocking Rights will deactivate/ activate the system in the morning and evening. Whereupon Standard User's may then access the protected space. Both the User with Locking & Unlocking rights and the Standard User shall follow the following two step procedure:

- a) Pass a card through a card reader, and
- b) Enter the correct keypad number."

9. Delete 16722-1 - Part 1.02 - A - 2. and insert the following.

"Provide a visual indicator on the corridor side of the protected area indicating the status of the interior space (Protected/Unprotected)."

10. Amend 16722-1 - Part 1.02 - A - 3. and insert the following.

"To exit a secured area will require a detector device or push button immediately inside the door to the protected area." If the person leaving is the last person in the room, they will have a pre-determined time to activate the interior space protection after a successful card read.

11. Add 16722-1, Part 102, A.4

After any power failure, once the emergency or normal power is restored, the complete system must return to a 100% operational state without human intervention being required.

12. Revise 16722-1, Part 102, B.1 to read as follows:

Security Computer in room 117 shall be an IBM or Compatible Computer with an 80286, 16 bit or 80386, 32 bit processor, equipped with a 40 Mb, 28 ms access or larger hard drive, 101 key enhanced keyboard, and 5.25", 1.2 Mb floppy disk drive and a remote dumb terminal and CRT screen.

Features on the system shall include an annunciator panel at the main entrance, buzzers and strobes at each protected door and a voice alarm at the patio/entrance area.

Security Computer must have a 2400 baud dial up/autoanswer modem for remote access, complete programming, card validation and control of the system.

Security Computer must have an Epson LQ-1050, 24 pin printer for card validation and other miscellaneous reports.

Security Computer operating system must be DOS 3.3 or higher version or most current version of UNIX.

System software shall have database with rights and privileges and system interrogation. System shall have a minimum of 3 access levels.

The system shall have a digital dialer interface into the campus Silent Knight 9000 digital receiver. Provide programming to be compatible with the UK Security Office. Contact UK Police Department for a current copy of the programming form to be completed. Sample copies of this form are provided in Exhibit A and B of this Spec.

This form includes the phone numbers and associated alarm transmission format, and associated monthly departmental cost for non Fire Alarm Point connections.

13. Add 16722-2, Part 2.03, B

Swipe reader shall be magnetic strip and shall use standard encoding techniques to allow use of other magnetic strip cards in use on campus.

14. Add 16722-2, Part 2.03, E

Infrared Sensors shall be Dual Tech Napco D-100 with visible activation indicator integral to detector or equal.

15. Add 16722-2, Part 3.01, C

Installation and Wiring

1. All wiring shall be in 3/4" or larger conduit. Exposed conduit shall be in 750 or larger wiremold.
2. All conduit must be concealed in occupied spaces.
3. All conduit wiremold and junction boxes must be painted to match existing surface except in mechanical rooms.
4. Exterior conduit must be rigid galvanized metal conduit with threaded fittings.
5. Underground conduit must be rigid galvanized metal conduit with threaded fittings and asphaltum coating or rigid PVC Conduit encased in 3" reinforced concrete with dye identification.
6. Use metallic anchors only.
7. All equipment shall be UL listed.
8. Conduit shall be EMT, Rigid or wiremold. Written exception to use PVC conduit in corrosive environments must be obtained from the UK designated construction administrator.
9. To assure satisfaction of the owner, installer of the system shall put the features and sequence of operation of the system in writing and get the sequence of operation signed by the owner before installation of the system begins.
10. All equipment and devices provided to meet this spec shall meet all FCC requirements and restrictions for the application.
11. Provider of equipment or system to meet this spec must meet this regardless of any other approvals the provider obtains either verbally or in writing.
12. Install system in accordance with local regulations and the State regulations of the Department of Housing, Buildings, and Construction.
13. Provide detailed interconnecting wiring diagrams, operating manuals, programming manuals, part list with manufacturer part numbers, and schematics of all circuits provided.
14. If an interruption in service of existing facilities or equipment is required, advanced notice shall be given and a mutually agreeable time for the installer and the University will have to be selected. This interruption duration will have to be limited to mutually agreeable intervals.
15. Delivery and Storage shall be the responsibility of the system provider. No space is available at work site for storage of materials.
16. Clean-up shall be done daily and when project is complete. Clean-up must be thorough.
17. During construction, cover all equipment subject to mechanical damage or contamination in any way.
18. All wiring shall be 98% copper and all power runs shall be 12 awg minimum.
19. Provide an isolated run of conduit from the 120 VAC power source to the system. Use emergency power panel if building is equipped.
20. Final connections of the control panel and start-up shall be made under direct supervision of a representative of the manufacturer.

Installation and Wiring (Continued)

21. Conduit Location, Appearance and Support - All conduit shall be concealed except in University of Kentucky designated mechanical rooms or unless otherwise specified and shown on drawings approved by the UK Designated Construction Administrator. Conduits which are not concealed must have written approval of the UK Designated Construction Administrator prior to installation and shall be surface metal raceway (wiremold) unless otherwise noted in the approval. Conduit or tubing shall have supports installed and spaced in accordance with the NEC. Conduit shall be installed with runs parallel or perpendicular to walls, structural members on intersections of vertical planes and ceilings, with right angle turns consisting of cast metal fittings or symmetrical bends. Bends or offsets shall be avoided where possible but where necessary shall be made with approved conduit bending machine. Conduit or tubing which has been crushed or deformed in any way shall not be installed.
22. Install mechanical identification to properly identify the system and its components.
23. Arrange and pay for the inspections, examinations and tests required by the Department of Housing, Buildings, and Construction as necessary to obtain complete and final acceptance of the Automated Fuel Dispensing System. Deliver certificates of such inspections to the University before final inspection and testing.
24. Complete system shall be functionally tested in the presence of the Construction Administrator and all functions including system operation and interface must be in operation for at least 10 days without problems prior to the final acceptance test.
25. Training Requirements: - Prior to final acceptance, provide operator training to each shift of the owner's personnel and a group of up to five (5) of the owners maintenance persons. Each training session shall include emergency procedures, manual operation, system control panel operation, trouble procedures, programming and safety requirements. Each session shall include a complete demonstration of the system. Dates and times of the training period shall be coordinated through the owner not less than two weeks prior to session.
26. Firestop all penetrations in accordance with the current edition of the National Electric Code.
27. Installer shall coordinate and program the Remote Station connection with the designated UK Security Administrator. Operation of this programming shall have approval of the owner, the UK Security Administrator.

16. Add 16722-3, Part 3.05, A

Guarantees and Warranties

1. Installer shall "Guarantee" to the University of Kentucky that, during the effective period of the guarantee, this "Complete System" shall be free of defects in workmanship and material.
2. Guarantee period for the system shall commence upon the day the system is accepted 100% and be so recorded via a letter to the University of Kentucky accompanying an acceptance statement signed by UK.
3. Guarantee work shall be performed in accordance with all applicable codes and where requested by UK Designated Construction Administrator, shall be done after normal working hours and on weekends without additional cost to the owner.
5. Unless otherwise specified and accepted in writing by a University of Kentucky representative, all guarantee and warranty work requires a maximum of 4 hours response time if the designated UK representative request such response time. Emergency work performed on a guaranteed system shall not void any guarantee or warranty, written or implied. Emergency work is defined as any work needed to return a malfunctioning system to normal operation when unreasonable delay is not acceptable to the University.

S A M P L E

Exhibit B
S A M P L E

S A M P L E

COGEBEC ALARM # _____ ACCOUNT NUMBER 01-0111
ACCOUNT NAME Sigma Chi
ADDRESS 123 South Main Street PHONE NUMBER 123-4567
DEPARTMENT _____ CONTACT PERSON John Doe
SYSTEM ON-LINE DATE 10-31-88 BUILDING KEY # _____ HOOK # 123-4567
TYPE OF ALARM Fire/Trouble SYSTEM NAME Firelite c24
PANEL LOCATION Mechanical Room in basement
COMMUNICATOR LOCATION Mechanical Room in basement
EQUIPMENT DD3 Digital Dialer

CODE OR ZONE	LOCATION
02	Fire alarm (Building)
04	Trouble on fire alarm panel
74	Trouble restore
30	24 Hour self test
60	Low battery

SPECIAL NOTES This building fire alarm is not zoned. Check smoke detectors located in hallways and rooms.

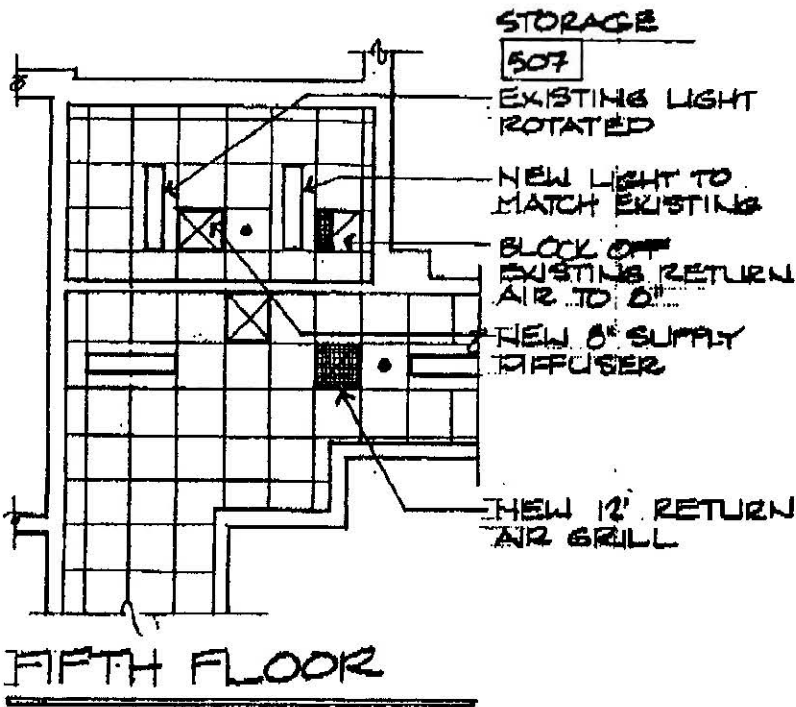
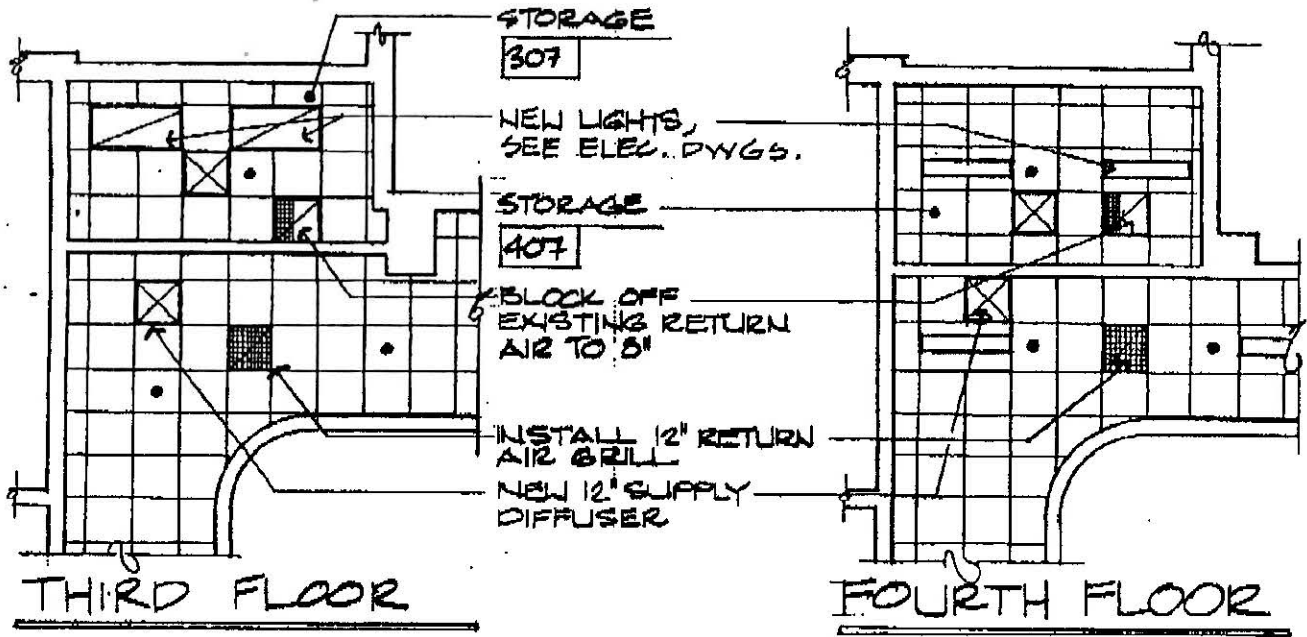
*Emergency Call list located on reverse side.

- 3.01, B. All wiring shall be installed in conduit and minimum conduit size shall be 3/4".
- 3.03, A. Demonstration should include the presence of the Architect, the Construction Administrator (CA) and the CA's invited guest.

Training: Provide complete onsite operator training for up to 8 people.

General

- 1. All components of this system including magnalocks shall be on emergency generator power.



REVISED REFLECTED
 CEILING PLANS @
 STORAGE ROOMS
 307, 407, 507

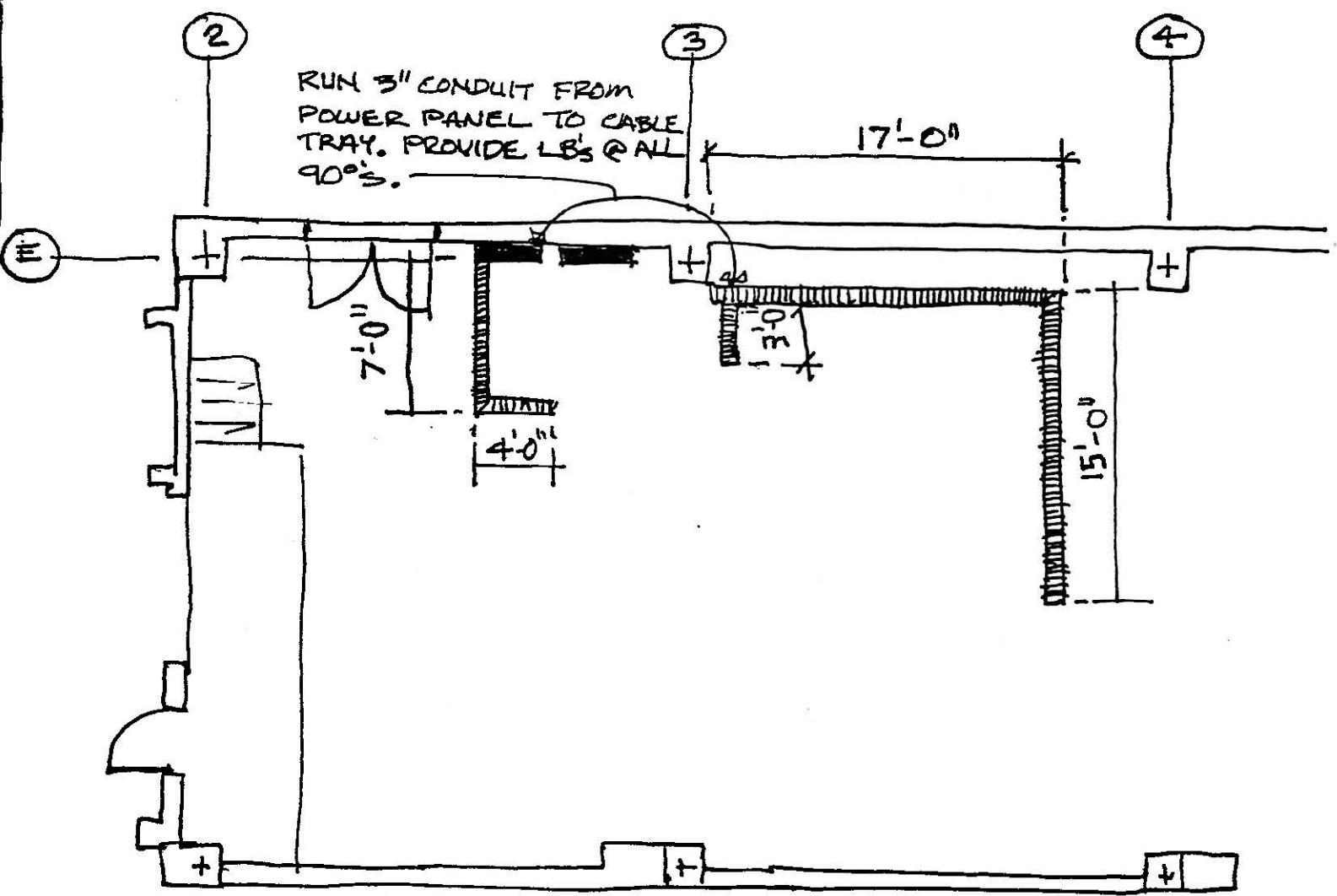
1/8" = 1'-0"

<p>ROBOTICS MODIFICATIONS UNIVERSITY OF KENTUCKY LEXINGTON, KENTUCKY</p>	<p><i>Sherman Carter Barnhart</i> PARTNERS IN ARCHITECTURE LEXINGTON FINANCIAL CENTER • SUITE 1900 • 250 W. MAIN • LEXINGTON, KY 40507 • 608-254-1351</p>	<p>ADD-1A</p>
---	---	---------------

ROBOTICS
 MODIFICATIONS
 UNIVERSITY OF KENTUCKY
 BEXINGTON, KENTUCKY

UK DESIGN &
 CONSTRUCTION

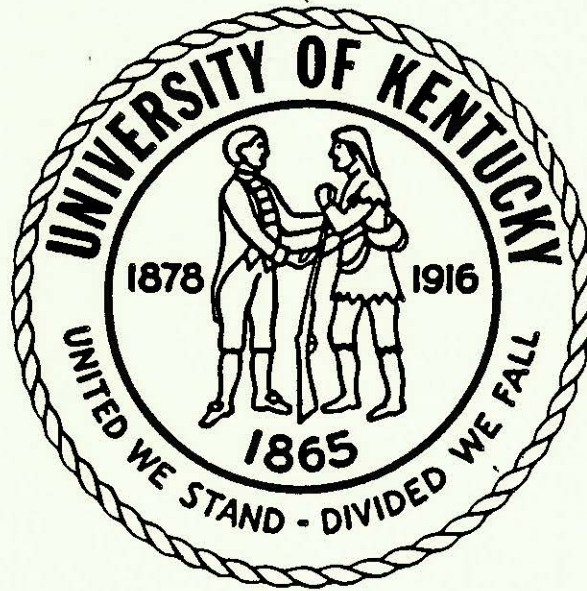
ADD2A



NOTE: CLARIFICATION DRAWING
 TO SHEET E.1 FOR
 IN-FLOOR CABLE TRAY.

BASEMENT MACHINE BAY
IN-FLOOR CABLE TRAY

UNIVERSITY OF KENTUCKY
Division of Purchasing Services
CAPITAL CONSTRUCTION SECTION
RM 238 Peterson Service Building
Lexington, Ky. 40506-0005



204-
27
B-2

Project Number _____ #431.6

ROBOTICS FACILITY MODIFICATIONS
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY

PROJECT #431.6
ROBOTICS FACILITY MODIFICTIONS
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY

INVITATION TO BID: CCK-398-9
OPENING: MARCH 13, 1990
2:00 P.M. LEXINGTON TIME

PRE-BID CONFERENCE: MARCH 5, 1990
ROOM 236 PETERSON SERVICE BUILDING
10:00 A.M. E.S.T.

PURCHASING DIVISION
CAPITAL CONSTRUCTION SECTION
ROOM 238 PETERSON SERVICE BUILDING
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY 40506-0005

ARCHITECT

SHERMAN/CARTER/BARNHART ARCHITECTS
LEXINGTON FINANCIAL CENTER
1900 WEST MAIN STREET
LEXINGTON, KENTUCKY 40507

ENGINEERS

BELCAN ENGINEERING
10200 ANDERSON WAY
CINCINNATI, OHIO 45242

CONTACT THE FOLLOWING INDIVIDUALS FOR INFORMATION RELATED TO THIS PROJECT

STEPHEN BURRUS - SHERMAN/CARTER/BARNHART ARCHITECTS
606-254-1351

CHRIS SHEKRO - BELCAN ENGINEERING
800-423-5226

JOE CROUCH - U.K. DESIGN AND CONSTRUCTION DIVISION
606-257-5911

JAMES L. SUTTON - PURCHASING OFFICER IV, U.K. PURCHASING DIVISION
606-257-8598

METHOD OF AWARD

AWARD WILL BE MADE TO THE LOWEST RESPONSIVE BIDDER FOR A LUMP SUM AMOUNT
FOR THE ENTIRE PROJECT.

PROJECT COORDINATOR

JOE CROUCH - U.K. DESIGN AND CONSTRUCTION DIVISION

GENERAL INDEX
PROJECT 431.6
ROBOTICS FACILITY MODIFICATIONS
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY

FORM OF PROPOSAL.....	FP-1	-	FP-10
NOTICE TO CONTRACTORS.....	NTC-1		
ADVERTISEMENT FOR BIDS (PART II).....	AB-1	-	AB-4
INSTRUCTIONS TO BIDDERS (PART II).....	IB-1	-	IB-17
GENERAL CONDITIONS (PART III).....	GC-1	-	GC-31
PAYMENT AND PERFORMANCE BOND	PB-1	-	PB-2
CONTRACT AGREEMENT.....	CA-1	-	CA-4

INDEX OF TECHNICAL SPECIFICATIONS

SECTION NO.	SECTION
01000	SPECIAL CONDITIONS
06400	ARCHITECTURAL WOODWORK
07510	BUILT-UP ASPHALT ROOFING SYSTEM
09250	GYPSUM DRYWALL
09510	ACOUSTICAL CEILINGS
09900	PAINTING
15010	MECHANICAL GENERAL PROVISIONS
15100	VALVES
15190	MECHANICAL IDENTIFICATION
15260	PIPING INSULATION
15290	DUCTWORK INSULATION
15510	HYDRONIC PIPING
15515	HYDRONIC SPECIALTIES
15890	DUCTWORK
15910	DUCTWORK ACCESSORIES
15936	AIR OUTLETS AND INLETS
15990	STARTUP AND ADJUSTMENT
16010	BASIC ELECTRICAL REQUIREMENTS
16060	MINOR ELECTRICAL DEMOLITION
16111	CONDUIT
16112	SURFACE RACEWAYS
16120	WIRE & CABLE
16130	BOXES
16141	WIRING DEVICES
16180	EQUIPMENT WIRING SYSTEMS
16190	SUPPORTING DEVICES
16195	ELECTRICAL IDENTIFICATION
16440	DISCONNECT SWITCHES
16510	LIGHTING FIXTURES
16722	SECURITY SYSTEM

INDEX TO DRAWINGS

A-3	SECOND FLOOR
A-4	THIRD FLOOR
A-5	FOURTH FLOOR
A-6	FIFTH FLOOR
A-7	PENTHOUSE AND ROOF
A-23	PARTITION SCHEDULE & DETAILS
A-28	ENLARGED PLANS & DETAILS
A-33	DOOR AND FRAME SCHEDULE
A-34	DOOR AND FRAME SCHEDULE
A-34A	DETAILS
A-42	SECOND FLOOR REFLECTED CEILING PLAN
A-43	THIRD FLOOR REFLECTED CEILING PLAN
A-44	FOURTH FLOOR REFLECTED CEILING PLAN
A-45	FIFTH FLOOR REFLECTED CEILING PLAN
M-6	FOURTH FLOOR HVAC PLAN
M-6A	FOURTH FLOOR HVAC PLAN
M-8	PENTHOUSE/ROOF HVAC PLAN
M-18	FOURTH FLOOR PLUMBING & PIPING PLAN
E-1	BASEMENT FLOOR LIGHTING PLAN
E-2	BASEMENT FLOOR POWER PLAN
E-3	FIRST FLOOR LIGHTING PLAN
E-4	FIRST FLOOR POWER PLAN
E-5	SECOND FLOOR LIGHTING PLAN
E-6	SECOND FLOOR POWER PLAN
E-7	THIRD FLOOR LIGHTING PLAN
E-8	THIRD FLOOR POWER PLAN
E-9	FOURTH FLOOR LIGHTING PLAN
E-10	FOURTH FLOOR POWER PLAN
E-11	FIFTH FLOOR LIGHTING PLAN
E-12	FIFTH FLOOR POWER PLAN
E-14	PENTHOUSE POWER PLAN
E-17	ELECTRICAL DETAILS
E-21	ELECTRICAL DRAWING NOTES
E-22	LUMINAIRE SCHEDULE & SYMBOLS
E-23	SINGLE LINE DIAGRAM
E-26	PANEL SCHEDULES
E-27	PANEL SCHEDULES
E-28	PANEL SCHEDULES
E-30	PANEL SCHEDULES

UNIVERSITY OF KENTUCKY
PURCHASING DIVISION
CAPITAL CONSTRUCTION SECTION
FORM OF PROPOSAL

5

Project No. 431.6

For ROBOTICS FACILITY MODIFICATIONS

NOTE: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. If this copy is lost, an additional copy will be furnished upon written request to the authority issuing Contract Documents.

This Proposal submitted by _____

(NAME AND ADDRESS OF BIDDER)

Date _____

Telephone _____

TO: BID CLERK UNIVERSITY OF KENTUCKY PURCHASING DIVISION RM 322 SERVICE BUILDING LEXINGTON, KY. 40506-0005
INVITATION TO BID CCK-398-9
BID OPENING DATE 3/13/90
TIME 2:00 P.M. LEXINGTON TIME

The Bidder, in compliance with your invitation for bids for the above referenced project, having carefully examined the site of the Work, the Drawings and complete Contract Documents as defined in Article 1 of the General Conditions, as well as the Specifications affecting the work, as prepared by SHERMAN/CARTER/BARNHART ARCHITECTS (STEPHEN BURRUS) hereby proposes to furnish all labor, materials, supplies and services required to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the price stated below.

The Bidder hereby acknowledges receipt of the following Addenda:

<u>ADDENDUM NO</u>	<u>DATED</u>
<u>ADDENDUM NO</u>	<u>DATED</u>
<u>ADDENDUM NO</u>	<u>DATED</u>
<u>ADDENDUM NO</u>	<u>DATED</u>

(Here insert the number and date of any Addenda issued and received. If none has been issued and received, the word NONE should be inserted.)

LUMP SUM PROPOSAL

The Bidder agrees to furnish all labor, materials, supplies and services required to complete the Work, for the ROBOTICS FACILITY MODIFICATIONS, for the Purchasing Division, University of Kentucky, as described in the Specifications and Contract Documents and shown of the Drawings enumerated below and as modified by the Addenda listed above.

FOR THE LUMP SUM OF _____
(USE WORDS)

_____ DOLLARS AND _____ CENTS.
(USE WORDS) (USE WORDS)

(\$ _____)
(USE FIGURES)

SAMPLE
DO NOT USE FOR BIDDING

AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby certify:

1. That I am the bidder (if the bidder is an individual), a partner in the bidder (if the bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the bidder is a corporation);
2. That the submitted bid or bids covering Purchasing Division Invitation No. CCK-398-9 have been arrived at by the bidder independently and have been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition, as prohibited by provision KRS 45A:325;
3. That the contents of the bid or bids have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder its sheets or any bond furnished with the bid or bids and will not be communicated to any such person prior to the official opening of the bid or bids;
4. That the bidder is legally entitled to enter into the contracts with the University of Kentucky and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 164:390, and 45A:330 to 45A:340 and 45A:455;
5. This offer is for 60 calendar days from the date this bid is opened. In submitting the above, it is expressly agreed that upon proper acceptance by the Purchasing Services Division of any or all items bid above, a contract shall thereby be created with respect to the items accepted;
6. That I have fully informed myself regarding and affirm the accuracy of all statements made in this Form of Proposal including Bid Amount.
7. Unless otherwise exempted by KRS 45:590, the bidder intends to comply in full with all requirements of the Kentucky Civil Rights Act and to submit data required by the Kentucky Equal Employment Act upon being designated the successful contractor.

SAMPLE
DO NOT USE FOR BIDDING

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID

SIGNED BY _____ TITLE _____

FIRM _____ TELEPHONE NO. _____

ADDRESS _____ AREA CODE _____

CITY _____ STATE _____ ZIP CODE _____ DATE _____

THE FOLLOWING ITEMS ARE HEREWITH ENCLOSED AS REQUIRED BY KRS 45A:185, 45A:190, 14A:195, 45:550, 45:570 THROUGH 45A:640.

8

1. Bid Bond or Certified Check in an amount not less than five percent (5%) of total bid.
2. Bidder's Qualifications.
3. List of Proposed Subcontractors and Unit Prices.
4. Authentication of Bid and Affidavit of Non-Collusion and Non-Conflict of Interest.
5. List of Materials and Equipment. (To be completed within one (1) hour from close of bids.)
6. Equal Employment Opportunity Forms.
7. **VENDOR NUMBER:** It is imperative that you furnish your Federal Employer Identification Number E.I.D. in the space provided below. Failure to do so may delay the processing of purchase orders issued to your firm.

SAMPLE
 (Nine Digit Number)
 DO NOT USE FOR BIDDING

The Bidder is cautioned to sign and execute the Affidavit form in order for this to be a valid bid.

BIDDER'S QUALIFICATIONS

The Bidder's Qualifications are required by the Owner to be submitted as set forth herewith:

1. A permanent place of business is maintained at:

2. The following construction plant and equipment will be made available for use on this Contract:

3. Adequate finances are possessed as indicated by the following abbreviated statement. (Note: A prepared Company certified financial statement may be substituted in lieu of the following.)

Conditions at close of business _____, _____

a. Cash in bank and on hand	\$ _____
b. Receivable notes, accounts, money earned, interest, guarantee, loan	\$ _____
c. Stocks and bonds	\$ _____
d. Real estate, furniture and fixtures and materials	\$ _____
e. Equipment	\$ _____
f. Other assets (Name)	\$ _____
TOTAL ASSETS:	\$ _____

LIABILITIES

- a. Payable notes, accounts \$ _____
- b. Real estate encumbrances \$ _____
- c. Other encumbrances \$ _____
- d. Reserves \$ _____
- e. Capital stock paid up
(all classes) \$ _____
- f. Surplus - net worth \$ _____
- TOTAL LIABILITIES \$ _____

In addition to the foregoing, a complete and detailed financial statement will be furnished, if required.

4. In the event the Contract is awarded, surety bonds will be furnished by:

5. Experience of Contractor on other similar work:

<u>JOB</u>	<u>LOCATION</u>	<u>DOLLAR AMOUNT</u>	<u>% COMPLETE</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6. We now have the following jobs under contract and bonded:

<u>JOB</u>	<u>LOCATION</u>	<u>TOTAL CONTRACT</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

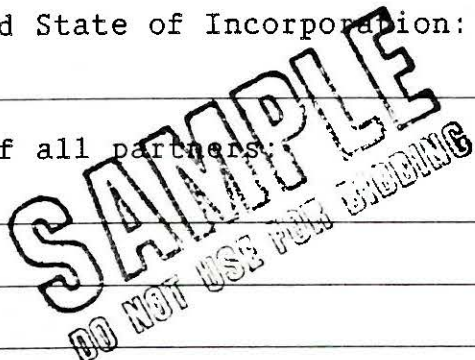
SAMPLE
DO NOT USE FOR BIDDING

7. Following is a list of names and addresses of all persons, firms and corporations, other than the bidder, interested in the above bid.

NOTE:

If a corporation, give name and State of Incorporation:

If a partnership, give names of all partners:



* NOTE:

Pursuant to KRS 45A;110, the bidder has the right of nondisclosure, to the public of certain information required by this Invitation for Bid. If the bidder wishes nondisclosure of the information on pages FP-4, FP-5, FP-6 he/she will enclose these pages in an envelope marked CONFIDENTIAL and enclose it within the envelope containing the Bid Documents. If this is not done, he/she waives the right of nondisclosure of this information and the signing of the bid proposal shall constitute written permission to disclose this information to the public.

TIME LIMIT FOR EXECUTION OF CONTRACT DOCUMENTS

It is further agreed, that in the event this Proposal is accepted by the Owner and the undersigned shall fail to execute the Contract and furnish satisfactory Performance Bond within ten (10) consecutive calendar days from the date of notification of the award of the Contract, the Owner may at his option, determine that the undersigned has abandoned the Contract and thereupon, the Proposal shall become null and void and the bid guarantee, check or bid bond which accompanied it shall be forfeited and become the property of the Owner as liquidated damages for each failure and no protest pursuant to such action will be made. If the Undersigned shall execute the Contract, and furnish satisfactory Performance Bond, it is understood that the Bid Guarantee or Bid Bond will be returned to the undersigned by the Owner.

UNIT PRICES

NOTE: Unit Prices shall include the furnishing of all labor, materials, supplies and services and shall include all items of cost, overhead and profit for the Contractor and any subcontractor involved, and shall be used uniformly without modifications for either additions or deductions. The Unit Price as established shall be used to determine the equitable adjustment of the Contract Price in connection with changes or extra work performed under the Contract and the "Rules of Measurement" set forth in the Special Conditions shall govern.

DESCRIPTION OF WORK

1. Acoustical Ceiling Tile _____ sq. ft.

SAMPLE
DO NOT USE FOR BIDDING

PRIMARY LIST OF PROPOSED SUBCONTRACTORS
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY
PROJECT NO. 431.6

PROJECT: ROBOTICS FACILITY MODIFICATIONS

All subcontractors are subject to the approval of the Purchasing Division and Design and Construction Division, University of Kentucky, Lexington, Ky.

If certain branches of the work are to be done by the Prime Contractor, so state.

This list of Proposed Subcontractors is to be executed and submitted as a part of the Bidder's Proposal. Failure to comply may result in rejection of Bidder's Proposal.

DIVISION OF WORK

NAME AND ADDRESS OF SUBCONTRACTORS

1. Casework

2. Drywall

3. Acoustical Ceiling

4. Paint

5. Mechanical

6. Electrical

SAMPLE
DO NOT USE FOR BIDDING

LIST OF MATERIALS AND EQUIPMENT
UNIVERSITY OF KENTUCKY

PROJECT NO. 431.6

Bidders are hereby advised that this list shall be required to be filled out completely when bid is submitted.

The above requirements do not preclude any bidder from submitting this list, fully executed, at the time the bids are submitted.

Each item listed under the different phases of construction must be clearly identified so that the Owner will definitely know what the Bidder proposes to furnish.

The use of a manufacturer's, dealer's name only, or stating "as per Plans and Specifications," will not be considered as sufficient identification.

Where more than one "Make" or "Brand" is listed for any one item, the Owner has the right to select the one to be used.

Failure to submit a proper list may result in rejection of the Bidder's Proposal.

ITEM

BRAND OR MANUFACTURER

- 1. Casework
- 2. Lighting Fixtures
- 3. Disconnect Switches
- 4. Security System



UNIVERSITY OF KENTUCKY

PROJECT NO. 431.6

A resume of the Superintendent/Foreman is to be submitted as a part of the Bidder's Proposal. Failure to comply may result in rejection of Bidder's Proposal.

PROJECT SUPERINTENDENT/FOREMAN

Name of superintendent and list of project completed by the superintendent.

 (NAME)

 (ADDRESS)

PROJECTS COMPLETED

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

SAMPLE
DO NOT USE FOR ENDINGS

NOTICE TO CONTRACTORS
FOR
PROJECT 431.6
ROBOTICS FACILITY MODIFICATIONS
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY

Attached hereto is a copy of the "ADVERTISEMENT FOR BIDS" for the furnishing of all labor, equipment, appliances, and material necessary for the PROJECT #431.6, ROBOTICS FACILITY MODIFICATIONS, UNIVERSITY OF KENTUCKY, LEXINGTON, KENTUCKY

SAME IS DESIGNATED AS:

INVITATION TO BID CCK-398-9

DATE ISSUED: FEBRUARY 27, 1990

BID DATE: MARCH 13, 1990 2:00 P.M. Lexington Time

Responsible Prime Contractors who have proper experience, equipment and qualifications are invited to bid on this work. These factors will be considered in the Award of the Contract and all work will be performed under the standard regulations for the University of Kentucky

ADDRESS REQUEST FOR PLANS AND PROJECT INFORMATION:

UNIVERSITY OF KENTUCKY
PURCHASING SERVICES DIVISION
ROOM #238 PETERSON SERVICE BUILDING
LEXINGTON, KENTUCKY 40506-0005

PLANS ATTENTION: SUELLEN BOWLING
STAFF ASSISTANT
606-257-8598

PROJECT INFORMATION: JIM SUTTON
PURCHASING OFFICER IV
606-257-8598

1. INVITATION:

Sealed proposals, in duplicate, for the following work will be received by the University of Kentucky, Purchasing Division, Room #238 Peterson Service Building, Lexington, Kentucky 40506-0005, in the manner and on the date hereinafter specified for the furnishing of all labor, materials, supplies, tools, appliances, equipment, services, etc., necessary for PROJECT #431.6, ROBOTICS FACILITY MODIFICATIONS, UNIVERSITY OF KENTUCKY, LEXINGTON, KENTUCKY as set forth in the specifications and as shown on the drawings prepared by SHERMAN/CARTER/BARNHART ARCHITECTS (STEPHEN BURRUS) and approved by the Purchasing Division and the Design and Construction Division and under the terms and conditions of this Invitation.

2. PROJECT DESCRIPTION:

The work shown on the drawings and within the specifications is for modifications to the existing Robotics Facility at the University of Kentucky, Lexington, Kentucky.

1. Provide and install new metal stud and gypsum board partitions as indicated on the drawings at locations on the second, third, fourth, and fifth floors, including sound attenuation blankets and security wire mesh as indicated.
2. Provide and install plastic laminate casework in Kitchen #327 as indicated. Existing water and waste stub-ups in floor are to be relocated to the location of the new undercounter icemaker (furnished by owner). Install new vinyl floor tiles (furnished by owner) at locations where utilities are removed.
3. Rework existing acoustical ceilings system (suspended grid and acoustical panels) as required to accommodate new partitions and the mechanical/electrical portions of the work. Provide and install new grid and panels to match.
4. Painting is required for new partitions, door frames and exposed coverplates, piping, etc.) except for equipment which is prefinished. Painting includes touch-up of any existing surfaces which are either affected by the scope of work or damaged by the Contractor. All painted surfaces are to match type and color of existing, similar surfaces.
5. Vinyl wall base is to be provided and installed at all new partitions; to match existing.
6. Construct new concrete equipment pads at the roof as required for condenser, pump, piping, as indicated on drawings. The existing roofing system is to be removed at these locations and new roofing, cants, flashing re to be installed surrounding and over the equipment pads. pitch pockets, as recommended by the original roofing manufacturer (Owens-Corning) are to be installed as required for piping and electrical supply to the roof-top units. The University has a ten year warranty with Owens-Corning on the current roof.

7. Installation of new door frames, doors and hardware.
8. Work includes miscellaneous HVAC changes, installation;n of electrical/computer/telephone outlets, security system, lighting etc.

MECHANICAL PACKAGE

The mechanical scope of work for the Robotics Center Renovation Program is described on drawings and specifications which are included herein. This description is issued to develop a work picture of the overall intent of the drawing.

The main equipment to be added in this program is an owner purchased air conditioner. This unit includes condenser, dual pump package and accessories, such as controls.

The duct system will be a supply and return layout to accommodate the three rooms on the fourth floor (drawing M.6A).

Demolition of the existing ductwork and ceiling panels is required to allow for installation of the new larger ducting systems (Drawing M-6). The removal includes ductwork, air terminal, and WAV boxes as indicated. Existing thermostats are to be removed and tubing plugged. Place blank plates over T-STAT base.

Insulation to be provided per specification on all new ductwork.

The glycol piping is indicated on Drawing M-6A. The expansion tank, drycooler, and pump package will be located on the roof per architectural drawings.

The glycol supply and return piping is shown on Drawing M-8 as going down through the roof, across the fifth floor, and down to the fourth for best routing pattern. Drawing M-18 shown work to include new cooling water (cw) to air conditioning unit humidifier, hub outlet, drain and vent for AC condensate. Removal of an existing sink is required. The sink will supply water and a drain. Field location on an ice maker will require routing of the water to and from the unit for installation. Caps are required on any openings of pipe, such as hot water, etc.

Again, refer to drawings and specifications for details and materials of construction. Match existing material if not otherwise stated.

Re-install necessary ceiling tile in rooms as required. Patch drywall and paint to match where penetration is required.

ELECTRICAL PACKAGE

The electrical scope of work for the Robotics Renovation is described on the drawings and specifications which are included herein. This description is issued to present an overview with highlights for the intent of the drawings.

The major items of equipment and apparatus are the eight panel boards, 4,000 ampere switchboard add-on section, switch gear, and dry-type transformer. The distribution center will have six (6) 200-A fused disconnects and two (2) 400-A fused disconnects; locations as shown on drawings. A new security system for ten (10) doors will be installed, per owner purchased system, from Simplex or Matrix. Cardreaders and key pads for each door are included. The communication conduit will be part of this system and is included in this work program. The security system will be connected to an IBM Computer Room 117 for control of this system. Included is a communicator panel, with buzzers and strobes at each protected door, and vice alarm at the patio entrance.

Electrical work will also require reswitching of existing lights and installing new lights as per drawings, to facilitate new walls shown on several floors. The computer and telephone conduits are to be installed from existing wire ways in the corridor ceiling.

The power panels are marked for location, size and number of circuits. The drawings and specifications indicate the voltage and breakers. The equipment, circuit conductors, conduits and routing shall be approved by UK-PPD.

The power supply to the HVAC (Leibert Unit) in the fourth is to be part of this work and is to be hooked up completely for full operation of base unit and its accessories. See drawings and vendor certified information for more details.

The power supply to the UPS unit, located in Room 407, is to be connected in its entirety for complete operation. Refer to drawings for specific details.

3. METHOD OF RECEIVING BIDS:

Bids will be received from Prime Contractors on a Lump Sum Amount for the total project. All phases of the work shall be bid to and through the Prime Contractors. Bids shall be submitted in the manner herein described and on the official proposal form included with the conditions and specifications and shall be subject to all the conditions as set forth and described in the Bid Documents

Bids shall be submitted only on the Official Forms supplied by the University of Kentucky, Purchasing Division, failure to comply with the foregoing requirements will be cause for invalidation of bid.

4. METHOD OF AWARD

Award will be made to the lowest responsive bidder for a lump sum amount for the entire project.

5. PLANS AND SPECIFICATIONS REVIEWED

Specifications, Plans and Contract Documents may be examined at the following places:

University of Kentucky Design & Construction Rm 221 Service Bldg. Lexington, KY 40506-0005	F.W. Dodge 105 E. 4th St Cincinnati, OH 45202	Southern KY Builders 1106 Lovers Ln. Ste A-18 Bowling Green, KY 42101
Builders Exchange 3595 Dutchman's Lane P.O. Box 5398 Louisville, KY 40205	F.W. Dodge 303 N. Hurstbourne Ln. Louisville, KY 40222	F.W. Dodge 2525 Harrodsburg Rd. Lexington, KY 40504
AGC of the Bluegrass 2321 Fortune Dr. Ste. 112 Lexington, KY 40505	Dodge Scan P.O. Box 94536 Cleveland, OH 44101	Associated Builders & Contractors of KY 425 W. Lee Street Louisville, KY 40208
Floyd Taylor, Director Minority Business Div. Kentucky Commerce Cab. Capital Pl. Tower Fl. 22 Frankfort, KY 40601	Assoc. Builders & Contractors 805-F Newtown Cir. Lexington, KY 40511	AGC of Kentucky 3595 Dutchman's Lane P.O. Box 20493 Louisville, KY 40220
Louisville Minority Bus. Development Center 835 W. Jefferson St, #205 Louisville, KY 40202 Attn: Mr. Robert Tinnin	Sherman/Carter/Barnhart Lexington Financial Ctr. 1900 West Main St. Lexington, KY 40507	Belcan Engineering 10200 Anderson Way Cincinnati, OH 45242

6. OBTAINING PLANS AND SPECIFICATIONS

Plans and Specifications may be obtained from the University of Kentucky, Purchasing Division, Room #238 Peterson Service Building, Lexington, KY 40506-0005, in accordance with the deposit and charge schedule. All checks, both deposit and charge, shall be payable to the University of Kentucky. On all Plans and Specifications which request a deposit check and a separate charge check, this charge is not refundable. The charge for extra plans and specifications shall be submitted on a separate check from the deposit check. Plans and Specifications must be returned to the University of Kentucky, Purchasing Division, Room #238 Peterson Service Building, Lexington, KY 40506-0005, within thirty (30) calendar days after the closing date of receipt of bids or your deposit check will not be refunded. (HOURS TO OBTAIN PLANS AND SPECIFICATIONS ARE 8:00 A.M. TO 12:00 P.M. AND 1:00 P.M. TO 4:30 P.M. MONDAY THROUGH FRIDAY.)

NOTE: NO PLANS OR SPECIFICATIONS WILL BE RELEASED BY THE PURCHASING DIVISION COMMENCING FIVE (5) CALENDAR DAYS PRIOR TO THE DATE OF THE BID OPENING.

NOTE: CONTRACTOR WHO HAS NOTIFIED THE PURCHASING DIVISION, JIM SUTTON, PURCHASING OFFICER 606-257-8598, OF INTENT PRIOR TO THE FIVE (5) CALENDAR DAYS MAY PICK-UP A SET WITHIN THE FIVE (5) CALENDAR DAYS.

NOTE: IT IS MOST IMPORTANT THAT REQUESTING FIRMS IDENTIFY THE POSITION OF THEIR FIRM AS A PRIME BIDDER, MISCELLANEOUS SUBCONTRACTORS, MATERIAL SUPPLIERS OR OTHERS

<u>POSITION</u>	<u>DEPOSIT</u>	<u>REQUIRED ON</u>	<u>CHARGE</u>
PRIME CONTRACTORS	\$-0-	2-SET	-0-
MISCELLANEOUS SUBCONTRACTORS & MATERIAL SUPPLIERS	\$-0-	1-SET	-0-
ALL EXTRA SETS	\$-0-	1-SET	\$ -0-

7. BID SUBMITTAL

Contractors must submit their bid in a sealed envelope and the envelope must contain the following information on the outside lower left-hand corner, viz:

SEALED BID INVITATION NO. CCK-398-9

BID DATE: MARCH 13, 1990 2:00 P.M. Lexington Time

Bids, upon their receipt by the University of Kentucky, Purchasing Division are stamped showing the hour and date received. Bids received after the scheduled closing time for reception of bids will not be considered provided legal and accepted bids have been received on said referenced Invitation.

8. BID WITHDRAWAL

No bidder may withdraw his bid for a period of thirty (30) days after the date set for the opening of bids. Clerical errors and omissions in the computation of the lump sum shall not be cause for withdrawal of the bid without forfeiture of bid bond. Bids may be withdrawn in person only, prior to the closing date for receipt of bids.

9. BONDING

All bids shall be accompanied by a bid guarantee of not less than five (5%) percent of the amount of the base bid. A 100% Performance and Payment Bond shall be furnished by the successful bidder. All bonding and insurance requirements are contained in the Instruction to Bidders and/or General Conditions.

10. RIGHT TO REJECT

The University of Kentucky, Purchasing Division, reserves the right to reject any and all bids and to waive all formalities and/or technicalities where the best interest of the University may be served.

11. GENERAL INFORMATION

21

- A. The Listing of major subcontractors and unit prices is required to be submitted with the bid. Materials and equipment list is to be submitted within one (1) hour after the reading of the bids
- B. Prevailing wage rates are not applicable.
- C. Only those General Contractors who have obtained Plans and Bid Documents directly from the University of Kentucky, Purchasing Division, Capital Construction Section, will be eligible to submit a bid for this project.
- D. It is imperative that a Representative be present at the Bid Opening for any company submitting a Bid. The Representative must be in a position that he/she can answer any and all questions on behalf of company, in regards to this project and questions that may arise concerning his/her company.

12. PRE-BID CONFERENCE

A Pre-Bid Conference will be held on MONDAY, MARCH 5, 1990 at 10:00 A.M. E.S.T. in Room 236 of the Peterson Service Building. These will be the only time available to visit this area. All Prime Bidders are urged to attend.

Decisions and clarifications discussed at this meeting will be incorporated into the bid documents by an Addendum issued no later than five (5) days prior to bidding. Substitute systems or materials will not be discussed.

Anyone wishing to discuss specific items are requested to call Jim Sutton, 606-257-8598 to have items placed on the agenda.

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506-0005

DESIGN AND CONSTRUCTION DIVISION
ROOM 222 PETERSON SERVICE BUILDING

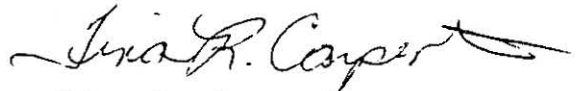
As a University of Kentucky Contractor or Sub-Contractor with a contract in excess of \$250,000.00, you are required under K.R.S. 45.550 to incorporate certain requirements into the terms and conditions of each non-exempt contract and purchase order for the following:

- (1) Equal Employment Opportunity
- (2) Utilization of Minority-Owned Business Concerns
- (3) Utilization of the Minority Workforce in the labor area

When submitting your bid on a University project in excess of \$250,000.00, you will be certifying that you will abide by the law.

Your being designated the successful bidder, unless otherwise exempted, the initial monthly Employment Utilization Report, copy attached shall be filled out and submitted in accordance with Article No. 16.3 Reporting Compliance of the Instruction to Bidders.

Sincerely,



Tina R. Carpenter
Equal Opportunity Contract
Compliance Officer

Office of Contract Compliance

This report is required by Executive Order 11246, Sec. 305. Failure to report can result in contracts being cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts of federally assisted construction contracts.

2. EMPLOYER I.D. NO.

MINORITY: _____

FROM: _____

FEMALE: _____

TO: _____

NAME AND LOCATION OF CONTRACTOR

FEDERAL FUNDING AGENCY

5. CONSTRUCTION TRADE	Classifications	6. WORK HOURS OF EMPLOYMENT (Federal & Non-Federal)												9. TOTAL NUMBER OF EMPLOYEES		10. TOTAL NUMBER OF MINORITY EMPLOYEES			
		8a. TOTAL ALL EMPLOYEES BY TRADE		8b. BLACK (Not of Hispanic Origin)		8c. HISPANIC		8d. ASIAN OR PACIFIC ISLANDERS		8e. AMERICAN INDIAN OR ALASKAN NATIVE		7. ALL MINORITY PERCENTAGE		8. BLACK PERCENTAGE		M	F	M	F
		M	F	M	F	M	F	M	F	M	F	M	F	M	F				
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	Journey worker																		
	APPRENTICE																		
	TRAINEE																		
	SUB-TOTAL																		
	TOTAL JOURNEY WORKERS																		
	TOTAL APPRENTICES																		
	TOTAL TRAINEES																		
	GRAND TOTAL																		

11. COMPANY OFFICIAL'S SIGNATURE AND TITLE

12. TELEPHONE NUMBER (include area code)

13. DATE SIGNED

AGE

OF

EQUAL EMPLOYMENT OPPORTUNITY FORM

INSTRUCTIONS FOR FILING MONTHLY EMPLOYMENT UTILIZATION REPORT

The Monthly Utilization Report is to be completed by each subject contractor (both prime and sub) and signed by a responsible official of the company. The reports are to be filed by the 5th day of each month during the term of the contract, and they shall include the total work-hours for each employee classification in each trade in the covered area for the monthly reporting period. The prime contractor shall submit a report for its aggregate work force and collect and submit reports for each subcontractor's aggregate work force to the University compliance officer, University of KY that has Executive Order 80-555 responsibility. Additional copies of this form may be obtained from the compliance officer.

- Compliance Agency University of Kentucky assigned responsibility for equal employment opportunity. (Secure this information from the contracting officer.)
- Federal Funding Agency State Government agency funding project (in whole or part.) If more than one agency, list all.
- Contractor Any contractor who has a construction contract with the State government or a contract funded in whole or in part with State funds.
- Minority Includes Blacks, Hispanics, American Indians, Alaskan Natives, and Asian and Pacific Islanders-both men and women.
- 1. Covered Area Geographic area identified in Notice required under 41 CFR 60-4.2.
- 2. Employer's Identification Number Federal Social Security Number used on Employer's Quarterly Federal Tax Return (U.S. Treasury Department Form 941.)
- 3. Current Goals (Minority & Female). See contract Notification.
- 4. Reporting Period Monthly, or as directed by the compliance agency, beginning with the effective date of the contract.
- 5. Construction Trade Only those construction crafts which contractor employs in the covered area.

EQUAL EMPLOYMENT OPPORTUNITY FORM

- 6. Work-Hours of Employment (a-e) .
 - a. The total number of male hours and the total number of female hours worked by employees in each classification.
 - b.-e. The total number of male hours and the total number of female hours worked by each specified group of minority employees in each classification.

- Classification The level of accomplishment or status of the worker in the trade (Journey Worker, Apprentice, Trainee)

- 7. Minority Percentage. The percentage of total minority work-hours of all work-hours (the sum of columns 6b, 6c, 6d, and 6e divided by column 6a; just one figure for each construction trade.)

- 8. Black Percentage The percentage of black males and females computed from the total number of blacks in 6b

- 9. Total Number of Employees. . . . Total number of male and total number of female employees working in each classification of each trade in the contractor's aggregate work force during reporting period.

- 10. Total Number of Minority Employees. Total number of male minority employees and total number of female minority employees working in each classification in each trade in the contractor's aggregate work force during reporting period.

EQUAL EMPLOYMENT OPPORTUNITY FORM

The Sample Affirmative Action Plan below has been developed as an outline to assist you in establishing your own Affirmative Action Plan. The sample should be adjusted to fit your individual company's circumstances. It should not be considered an ideal model because some provisions may not suit your company's needs.

THIS IS A SAMPLE ONLY
DO NOT RETURN THIS SAMPLE

In order to comply with the requirements of The Office of Equal Opportunity Contract Compliance and to insure Equal Employment Opportunity and Affirmative Action the following measures will be taken by the (company name):

1. Equal and fair treatment will be provided to all employees regardless of race, color, religion, national origin, sex, age or handicap.
2. A complete up-to-date record of employees classified by race, sex, and job classification will be maintained and semi-annual reports will be submitted to The Office of Equal Opportunity Contract Compliance.
3. All employees will be advised at the time of employment that we are an Equal Opportunity/Affirmative Action Employer and that hiring, promotion or demotion is based only on the individual's qualifications and ability to perform the work.
4. The company will cooperate with and support apprenticeship training programs based on Affirmative Action.
5. Recruiting advertisements and all notices relating to employment will include the clause "Equal Opportunity and Affirmative Action Employer." Said clause will be printed on all correspondence and notices relating to employment.
6. A company policy statement outlining its commitment to Equal Employment Opportunity and Affirmative Action will be posted in conspicuous places throughout our facility.
7. The company has appointed (name and position) to serve as the Equal Employment/Affirmative Action Officer who is authorized to supply reports and represent this company in all matters regarding this Affirmative Action Plan.
8. The name, address and telephone number of the Equal Employment Opportunity/Affirmative Action Officer will be posted in conspicuous places throughout the facility. This officer will be responsible for:
 - a. Implementing all phases of the Affirmative Action Plan.
 - b. Maintaining a close liaison with the compliance staff of the Human Relations Commission regarding non-discriminatory requirements.
 - c. Conducting periodic audits of employment practices to insure non-discrimination.

EQUAL EMPLOYMENT OPPORTUNITY FORM

- d. Semi-annual or more frequent instruction of all supervisory personnel of their responsibilities regarding Equal Opportunity/Affirmative Action and non-discrimination requirements.
- e. Periodically instructing supervisors of responsibilities to insure that minorities and females are not subject to any type of discriminatory harassment.
- f. Semi-annual reviews with all supervisory personnel to insure that the program is being implemented at all levels.
- g. Notifying in writing all minority and female recruitment sources, that this company is an Equal Opportunity/Affirmative Action Employer and notification to same of job openings.
- h. Notification to all eligible employees regarding promotions or vacancies to insure Equal Opportunity.
- i. Making specific efforts to encourage present minority and female employees to recruit their friends and relatives.
- j. Maintaining all facilities and activities on a non-discriminatory basis.
- k. Seeking to utilize minorities and females to the same degree as all others, based on the following factors:
 1. The minority population of the labor area surrounding the facility.
 2. The size of the female and minority unemployment forces in the labor area surrounding the facility.
 3. The percentages of minorities and female workforces as compared with the total workforce in the area.
 4. The availability of minorities and females having requisite skills in the immediate labor area.
 5. The availability of minorities and females having requisite skills in the reasonable recruitment area.
 6. The availability of promotable and transferrable female and minority employees in our company.
 7. The existence of institutions capable of training persons in the requisite skills.
 8. The degree of training which the company is reasonably able to undertake as a means of making all job classes available to minorities and females.
- l. Maintaining applicant data with title of job, referral source, sex, race, and final action with reason for any rejections.

9. DEFINITION OF GOALS AND TIMETABLES WHICH MAKE A BONA FIDE AFFIRMATIVE ACTION PLAN: (Your plan will not be accepted if specific numerical goals and timetables are not included.)

Goals and timetables must be established for each job category in which underutilization exists. These goals and timetables are to be established separately for minorities and women and must be designed to completely correct the underutilization. In establishing timetables the contractor should consider the anticipated expansion, contraction, and turnover of the workforce. Timetables should always be established for reaching the ultimate goals in the minimum feasible time periods. An ultimate goal (one designed ultimately to correct any deficiency) should be established for each job category and should be expressed as an actual number and as a percentage. The percentage figure should be at least equal to the percentage of minorities or women available for work in the job category.

TABLE OF CONTENTS
FOR PART II
INSTRUCTION TO BIDDERS

ARTICLE NO.	TITLE	PAGE
1.	DEFINITIONS	1-2
2.	PRIME BIDDER'S REPRESENTATION	2
3.	BIDDING DOCUMENTS	2-4
4.	BIDDING PROCEDURES	4-6
5.	CONSIDERATION OF BIDS	7-8
6.	QUALIFICATION OF PRIME BIDDERS	8-9
7.	SUBBIDDER AND MATERIAL LISTING	9-10
8.	UNIT PRICES	10-11
9.	PERFORMANCE BOND, LABOR & MATERIAL PAYMENT BOND	11
10.	FORM OF AGREEMENT BETWEEN UNIVERSITY AND PRIME BIDDER	12
11.	AWARD OF CONTRACT	12
12.	BASIC LEGAL REQUIREMENTS	12-13
13.	TAXES	13
14.	PLANHOLDERS	13
15.	POST BID REVIEW AND MATERIAL SUBMITTAL	14
16.	EQUAL EMPLOYMENT AND NONDISCRIMINATION	14-16
17.	ANTI-KICK BACK	17

Revised 1/88

PART II
UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION
INSTRUCTION TO BIDDERS

30

ARTICLE 1 - DEFINITIONS

- 1.1. Addenda are written or graphic instructions issued by the University of Kentucky prior to the receipt of Bids which modify or interpret the Bidding Documents by addition, deletions, clarification, or corrections.
- 1.2. An Alternate is an amount stated in the Bid Proposal to be added to or deducted from the amount of the base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents are accepted. If the University designated Alternates are considered in the award, the Alternate(s) will be accepted in the sequence of the Alternates listed on the Bid form, and the lowest Bid sum will be computed on the basis of the sum of the base Bid and any Alternates accepted, within the budgeted amount.
- 1.3. A Bid is the sum stated in the Bid Proposal for which the Prime Bidder offers to perform the work described in the specifications and detailed on the drawn plans.
- 1.4. Bidding Documents include the Advertisement, Invitation to Bid, Instruction to Bidders, General Conditions, **Special Conditions**, Sample Copies of Payment and Performance Bonds, Contract Agreement Warranty, Bid Proposal forms, and the proposed contract documents including any Addenda issued prior to receipt of Bids.
- 1.5. A Bid Proposal is a complete and properly signed document, proposing to do the work or designated portion thereof for the sums stipulated therein supported by data called for by the Bidding Documents.
- 1.6. A Consultant shall be defined as the Owners', Architect/Engineer Representative.
- 1.7. A Construction Manager is the Owners' representative, providing professional and managerial services throughout the construction process.
- 1.8. Foreign Corporation - refers to a corporation for profit, organized under the laws other than the laws of the Commonwealth of Kentucky.
- 1.9. KRS Regulations References - refers to the "Kentucky Revised Statutes" adopted by the Commonwealth of Kentucky including all laws that may have been revised, amended, supplemented or new laws enacted.
- 1.10. A Prime Bidder is one who submits a Bid for a contract with the University for the work described in the proposed contract documents.

ARTICLE 1 - DEFINITIONS (CONTINUED)

- 1.11. The Purchasing Agency is the University of Kentucky, Division of Purchasing, Capital Construction Section, Room 322 Peterson Service Building, Lexington, KY 40506-0005. 31
- 1.12. The Purchasing Official is the University's appointed representative.
- 1.13. Responsible Bidder shall mean a person who has the capability in all respects to perform fully the contract requirements, and the integrity and reliability which will assure good faith performance.
- 1.14. Responsive Bidder shall mean a person who has submitted a Bid which conforms in all material respects to the Invitation for Bids, so that all bidders may stand on equal footing with respect to the method and timeliness of submission and as to the substance of any resulting contract.
- 1.15. A Subbidder is one who submits a Bid to a Prime Bidder for materials or labor for a portion of the work.
- 1.16. A Unit Price is an amount stated in the Bid Proposal as a price per unit of measurement for materials or services as described in the contract documents.

ARTICLE 2 - PRIME BIDDER'S REPRESENTATION

- 2.1. Each Prime Bidder by making his Bid represents that:
- 2.1.1 He has read and understands the Bidding Documents and his Bid is made in accordance therewith.
 - 2.1.2 He has visited the site and has familiarized himself with the local conditions under which the work is to be performed.
 - 2.1.3 His Bid is based upon, or equal, materials, systems, and equipment described in the Bidding Documents, and in accordance with the bidding conditions and terms without exception.

ARTICLE 3 - BIDDING DOCUMENTS

- 3.1. Copies
- 3.1.1 Prime Bidders, Subbidders, and others may obtain from the Division of Purchases, Capital Construction Section Bidding Documents in the manner and for the deposit sum and charge, if any, stated in the advertisement or invitation. The deposit will be refunded to planholders who return, prepaid, the Bidding Documents in good condition within thirty (30) calendar days after opening the Bids. The cost of any missing or damaged documents or delivery cost will be deducted from the deposit. A Prime Bidder receiving a contract award may retain the Bidding Documents and his deposit will be refunded.

ARTICLE 3 - BIDDING DOCUMENTS (CONTINUED)

32

- 3.1.2 Complete sets of Bidding Documents shall be used in preparing Bids. The Purchasing Official assumes no responsibility for misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 Purchasing Official, in making copies of the Bidding Documents available on the above terms, does so only for the purpose of obtaining Bids on the work and does not confer a license or grant for any other use.
- 3.1.4 The Bidding Documents are complementary and are issued for the convenience of the Prime Bidders. The Division of Purchasing assumes no responsibility for the correctness of said documents. Each Prime Bidder should review the documents for errors or misrepresentations that may affect the scope of work implied.

3.2. INTERPRETATION OF CORRECTION OF BIDDING DOCUMENTS

- 3.2.1 All bidders shall, upon examination of Bidding Documents promptly notify the University's Purchasing Official of any ambiguity, inconsistency, or error they may discover upon examination of the technical specifications or of the site and local conditions.
- 3.2.2 All bidders shall promptly notify the University of Kentucky Division of Purchasing, Capital Construction Section in regards to any questions concerning the Form of Proposal, Instruction to Bidders and General Conditions.
- 3.2.3 All bidders desiring clarification or interpretation of the Bidding Documents shall make a written request to the Purchasing Official as stated above. Such written requests shall reach him at least ten days prior to the closing date for receipt of Bids.
- 3.2.4 Any interpretation, correction or change of the Bidding Documents will be made by addendum, issued by the Division of Purchasing, Capital Construction Section. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding and bidders shall not rely upon such interpretations, corrections and changes.

3.3 Addenda

- 3.3.1 Addenda will be mailed or delivered to all who are known by the Purchasing Division to have requested and were furnished Bidding Documents.
- 3.3.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

ARTICLE 3 - BIDDING DOCUMENTS (CONTINUED)

- 3.3.3 No Addenda will be issued later than five (5) working days prior to the date for receipt of Bids except for postponing the date for receipt of Bids or withdrawing the request for Bids.
- 3.3.4 Each Prime Bidder shall ascertain prior to submitting his Bid that he has received all Addenda issued by the Division of Purchasing for the particular Bid invitation and must acknowledge said Addenda on the form of proposal.
- 3.3.5 It shall be the sole responsibility of the Prime Bidders who receive the addendum, to insure that all of the appropriate Subbidders are notified in respect to the information contained in the addendum.
- 3.4 "Or Equal" Clause
- 3.4.1 The materials, products and equipment detailed, described or referenced to manufacturers' or vendors' names, trade names, catalogue numbers, etc., are intended to establish a standard of required function, dimension, appearance and quality. Material, article or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article or equipment so proposed is, in the opinion and judgment of the Consultant, of equal substance and function.

ARTICLE 4 - BIDDING PROCEDURES4.1 Form and Style of Bids

- 4.1.1 Bids shall be submitted only on the proposal form provided by the Division of Purchasing, Capital Construction Section.
- 4.1.2 All blanks on the Bid Proposal form shall be filled in and all support data shall be furnished.
- 4.1.3 Where so indicated by the makeup of the Bid form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount in words shall govern.
- 4.1.4 Any interlineation, alteration, or erasure must be initialed by the signer of the Bid or by an official designee of the signer of the Bid.
- 4.1.5 All University designated Alternates shall be Bid. The Prime Bidder shall not insert voluntary Alternates.

- 4.1.6 Prime Bidder shall make no additional stipulations on the Bid Proposal form nor qualify his Bid in any other manner. Proposal containing voluntary Alternates, additional stipulations or other qualifications may be cause for rejection of the Bid.
- 4.1.7 Bid Proposal form shall include the legal name of Prime Bidder and a statement whether Prime Bidder is a sole proprietor, a partnership, a corporation, or any other legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Prime Bidder to a contract. A Bid by a corporation shall further give the state of incorporation. A Bid submitted by an agent shall have a current signing authority attached certifying agent's authority to bind Prime Bidder.
- 4.2 Bid Security As Per KRS 45A:185
- 4.2.1 Where specified in the Advertisement or Invitation to Bid, the Prime Bidder shall furnish a Bid **guarantee** in the form of a Bid Bond or Cashiers Check, in an amount not less than **five percent (5%)** of the Bid amount. By submitting said Bid security, he is pledging that he will enter into a contract with the University on the terms stated in his Bid and will, if required, furnish bonds covering the faithful performance of the contract and the payment of all obligations arising thereunder. Should the Prime Bidder refuse to enter into a contract or fail to furnish required performance and payment bonds, the amount of the Bid security shall be forfeited to the University as liquidated damages, not as a penalty.
- 4.2.2 The **Purchasing Official** will retain the Bid security of Prime Bidders until either (a) the contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.
- 4.3 Submission of Bids
- 4.3.1 The Bid, which shall be submitted only on the University official Bid Documents, the Bid security, and any support data required to be submitted with the Bid shall be enclosed in a sealed envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Prime Bidder's name and address, the sealed Bid invitation number, closing date and hour. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. Each Prime Bidder will be required to affix labels provided with the Bid Proposal when bidding.

- 4.3.2 Bids shall be delivered to Room 322, Peterson Service Building, prior to the official time and date for receipt of Bids indicated in the advertisement of Invitation to Bid, or any extension thereof made by addendum. The "official time" refers to the specific time as established by the Division of Purchasing time clock. Bids received after the official closing time and date for receipt of Bids, will not be considered unless no other Bids were received, prior to the official closing time and date for receipt of Bids.
- 4.3.3 Prime Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.
- 4.3.4 Oral, telephonic, or telegraphic Bids or changes in Bids by such methods are not permitted and will not receive consideration.
- 4.4 Modification or Withdrawal of Bid
- 4.4.1 Prior to the official closing time and date designated for receipt of Bids, Bids submitted early may be withdrawn only in person by a properly identified representative of the bidding firm whose name appears on the bid envelope. If the Prime Bidder desires to withdraw the Bid, but is unable to appear or have an authorized representative appear in person prior to the official closing and opening date for Bids, the Bid will be opened, read and tabulated along with any other Bids. Any written request for the Bid withdrawal will be reviewed and evaluated in accordance with policies established by University of Kentucky, Division of Purchasing, Capital Construction Section.
- 4.4.2 Withdrawn Bids may be resubmitted up to the official closing time designated for the receipt of Bids.
- 4.4.3 A Bid may not be modified, withdrawn or canceled by the Prime Bidder, during the stipulated time period following the time and date designated for the receipt of Bids without approval of the appropriate **PURCHASING OFFICIAL** subject to University of Kentucky General Conditions and subject to the forfeiture of the Bid security and suspension of future bidding privileges.

5.1 Opening of Bids

5.1.1 Unless stated otherwise in the Advertisement or Invitation to Bid, all properly identified Bids received on time will be publicly opened, reviewed and if properly executed and complete will be read aloud. An abstract of the Bids will be made available to all bidders upon request.

5.2 Cancellation of Invitation for Bids, Rejection of Bids and Waiver of Technicalities or Informalities As Per KRS 45A:105

5.2.1 The right to cancel the Invitation for Bids, to reject any and all Bids and to waive technicalities and minor irregularities in Bids shall be maintained and preserved in the case of all Invitations for Bids issued by University of Kentucky, Division of Purchasing, Capital Construction Section when such action is determined to be in the best interest of the University of Kentucky.

5.2.2 Grounds for the rejection of Bids include, but shall not be limited to:

- (a) Failure of a Bid to conform to the essential requirements of an Invitation for Bids.
- (b) Any Bid which does not conform to the specifications contained or referenced in any Invitation for Bids shall be rejected unless the invitation authorized the submission of Alternate Bids and the items offered as Alternates meet the requirements specified in the invitation.
- (c) Any Bid which fails to conform to the delivery or completion schedule established in the Bidding Documents.
- (d) A Bid imposing conditions which would modify the terms and conditions of the Invitation for Bids, which would include voluntary Alternates, or limit the Prime Bidder's liability to the University on the contract awarded on the **basis** of such Invitation for Bids.
- (e) Any Bid determined by the **PURCHASING OFFICIAL** in writing to be unreasonable as to price.
- (f) A Bid received that is considered to be from a non Responsible Prime Bidder.
- (g) Failure to furnish a Bid guarantee when required by an Invitation for Bids.

- 5.2.3 Technicalities or minor irregularities in Bids which may be waived when the **PURCHASING OFFICIAL** determines that it will be in the University's best interest to do so, are mere matters of form not affecting the material substance of a Bid or some immaterial deviation from or variation in the precise requirements of the Invitation for Bids and having no, or a trivial or negligible effect on price, quality, quantity or delivery of supplies or performance of the services being procured, the correction or waiver of which will not affect the relative standing of, or be otherwise prejudicial to other Prime Bidders. The **PURCHASING OFFICIAL** may either give a Prime Bidder an opportunity to cure any deficiency resulting from a technicality or minor irregularity in his Bid, or waive such deficiency where it is advantageous to the University to do so.
- 5.2.4 The University reserves the right to exercise the provisions of KRS-45A-090 when it is considered to be in the best interest of the University.
- 5.3 Method of Award
- 5.3.1 It is the intent of the **PURCHASING OFFICIAL** to award a contract in due course and after a reasonable Bid evaluation period to the lowest Responsive and **Responsible** Prime Bidder, provided the acceptable Bid sum is within budgeted funds.
- 5.3.2 If University designated Alternates are considered in the award, the Alternate(s) will be accepted in the sequence of listing on the Bid form, and the lowest Bid sum will be computed on the basis of the sum of the base Bid and any Alternates accepted, within the budgeted amount.

ARTICLE 6 - QUALIFICATION OF PRIME BIDDER

- 6.1 Statement of Prime Bidder's Qualifications As Per KRS 45A:115
- 6.1.1 The Prime Bidder shall submit as part of the Bid Proposal form a statement of the Prime Bidder's qualifications. The **PURCHASING OFFICIAL** shall have the right to take such steps as it deems necessary to determine the ability of the Prime Bidder to perform the work in a prompt and efficient manner per the contract documents.
- 6.1.2 In determining the qualifications and responsibilities of the Prime Bidder, the University along with their Consultants shall **assess** the skill, quality, the efficiency of the construction plant, and demonstrated ability to fulfill the requirements of the Invitation to Bid.

ARTICLE 6 - QUALIFICATION OF PRIME BIDDER (CONTINUED)

- 6.1.3 The right is reserved to reject any Bid where an investigation and evaluation of the Prime Bidder's qualifications would give reasonable doubt that the Prime Bidder could perform prompt and efficient completion of the work in accordance with the contract.
- 6.1.4 Prime Bidders must conform and comply with section 16.3 of Instructions to Prime Bidders.

ARTICLE 7 - SUBCONTRACTOR AND MATERIAL LISTING7.1 Proposed Subcontractor

- 7.1.1 The Prime Bidder shall submit with the Bid the names of proposed subcontractors as indicated on the Form of Proposal for various branches of the work.
- 7.1.2 Prime Bidder shall not list himself as a subcontractor on the Form of Proposal Subcontractors List unless he can demonstrate that he actively participates in the trades required and has the expertise to complete that portion of the work.
- 7.1.3 The Prime Bidder shall be responsible for establishing to the satisfaction of the PURCHASING OFFICIAL the reliability and responsibility of the named proposed subcontractors.
- 7.1.4 If, after due investigation, there is reasonable and substantial objection to the qualifications of a proposed subcontractor, the Prime Bidder shall, upon direction of the PURCHASING OFFICIAL, submit an acceptable substitute subcontractor with no change in Bid price.
- 7.1.5 The Prime Bidder shall not substitute a subcontractor named on the Form of Proposal without prior notification and approval of the PURCHASING OFFICIAL. Any notification for a substitution of a listed subcontractor shall be in writing and the reason fully set forth therein. The reason shall demonstrate real cause and evidence good faith by the Prime Bidder.
- 7.1.6 This shall not be construed to waive the Prime Bidder's rights to later substitute a subcontractor for the failure of that proposed subcontractor to accept a contract from the Prime Bidder, failure to perform in a satisfactory manner per the requirements of the contract or any other legal rights of the Prime Bidder to manage and coordinate his subcontractor.

ARTICLE 7 - SUBBIDDER AND MATERIALS LISTING (CONTINUED)

- 7.1.7 No contractual relationship shall exist between the University and subcontractor. However, it is the Prime Bidders responsibility to assure the subcontractor listed has the required expertise and financial stability to complete that portion of the work. Failure of this requirement may not be cause for substitution of subcontractor.
- 7.2 List of Materials and Equipment
- 7.2.1 The Prime Bidder shall submit a list of major materials and equipment by the manufacturer's name, brand and/or catalog number in the form and manner specified in the Bidding Documents.
- 7.2.2 Prior to the acceptance of a Bid, the PURCHASING OFFICIAL will make a preliminary review of the list of materials and equipment included with the Bid Proposal and advise the Prime Bidder of the acceptance thereof, or other such action as may be necessary in order to meet the requirements of the specifications. If any of the material or equipment named in the list are determined not to meet the requirements and standards of the specifications, the Prime Bidder shall be required to furnish other material or equipment meeting the specifications at no change in Bid price. Preliminary review and acceptance of the above listing shall not relieve the Prime Bidder from furnishing equipment and materials in complete accordance with the specifications, drawings, and contract issued.

ARTICLE 8 - UNIT PRICES8.1 Submission

- 8.1.1 The Prime Bidder shall submit with the Bid, a list of Unit Prices as designated on Form of Proposal.
- 8.1.2 Unit Prices are for adjusting the scope or quantity of work from that indicated by the contract drawings and specifications, upon written authorization of the University.
- 8.1.3 The Unit Prices shall include all labor, materials, equipment, appliances, supplies, overhead and profit.
- 8.1.4 Only a single Unit Price shall be quoted for the designated item of work. It shall be utilized for either increasing or decreasing the amount of work, in the event the contract is required to be adjusted by Unit Price.
- 8.1.5 Unit Prices shall apply to all phases of the work whether the work be performed by the Prime Bidder or by a subcontractor.

ARTICLE 8 - UNIT PRICES - (CONTINUED)

8.1.6 The University reserves the right, prior to an award of contract, to evaluate the Unit Prices submitted and adjust and/or reject any Unit Price that is determined by the PURCHASING OFFICIAL to be unreasonable in amount.

ARTICLE 9 - PERFORMANCE BOND, LABOR & MATERIAL PAYMENT BOND

9.1 Universities Right to Require Bonds As Per KRS 45A:190, 45A:195

9.1.1 The PURCHASING OFFICIAL shall have the right, prior to the execution of the contract, to require the Prime Bidder to furnish bonds covering the faithful performance of the contract and the payment of all obligations arising thereunder in such form and amount as the PURCHASING OFFICIAL may prescribe and with such sureties secured through the Prime Bidder's usual sources as may be agreeable to the parties. If the furnishing of such bonds is stipulated in the Bidding Documents, the premiums shall be paid by the Prime Bidder.

9.1.2 The University reserves the right to require that the bond be underwritten by a surety company with a rating of "A" or better as listed in the A.M. Best-Key Rating Guide for Property and Casualty (current edition). The surety company must be authorized to underwrite bonds in the Commonwealth of Kentucky.

9.2 Time of Delivery and Form of Bonds

9.2.1 The Prime Bidder shall execute the required bonds for the University of Kentucky, Division of Purchasing, Capital Construction Section on the date of execution of the form of contract agreement and/or not later than ten (10) calendar days from the date of contract if approval is given by the PURCHASING OFFICIAL.

9.2.2 Unless otherwise specified in the Bidding Documents, the bonds shall be written on the bond form bound in the Bidding Document in the number of copies to be specified by the PURCHASING OFFICIAL.

9.2.3 The Prime Bidder shall require the Attorney-in-Fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his Power of Attorney. The date of the Power of Attorney shall not precede the date of the bonds. The bonds must be signed or countersigned by a resident agent of the Commonwealth of Kentucky, in accordance with KRS 304:3-250.

ARTICLE 10 - FORM OF AGREEMENT BETWEEN UNIVERSITY AND PRIME BIDDER

10.1 Form to be Used

10.1.1 Unless otherwise provided in the Bidding Documents, the Form of Agreement to the Contract will be written on the standard form of agreement bound with the Bidding Documents and the number of copies to be specified by the **PURCHASING OFFICIAL**.

ARTICLE 11 - AWARD OF CONTRACT

11.1.1 The issuance of an award of the contract is contingent upon (1) securing an acceptable Bid that is within the amount of budgeted funds and (2) determining that the award of contract will be in the best interest of the University of Kentucky.

11.1.2 That a contract is entered into will be evidenced and finalized upon the execution and release of an **encumbered** Purchase Order entitled University Purchase Order "U".

11.1.3 Final award of contract will be made on the basis of the lowest, Responsive Bid unless this requirement has been modified in the Invitation to Bid, Instructions to Bidders or elsewhere in the Bidding Documents.

11.1.4 The University reserves the right to negotiate and award contracts as allowed under KRS 45A-090 should all Responsive Bids exceed available funds.

ARTICLE 12 - BASIC LEGAL REQUIREMENTS

12.1 Authentication of Bid and Statement of Noncollusion and Nonconflict of Interest - KRS 45A-325

12.1.1 Authentication of Bid, Statement of Noncollusion and Nonconflict of Interest documents are bound with and included as part of the Form of Proposal and shall be submitted, fully signed and executed, with and as a part of the Bid. Failure to sign this document and include same with the Bid shall **INVALIDATE THE BID**.

12.2 Foreign Corporate Firms

12.2.1 Foreign Corporations are defined as corporations that are organized under the laws other than the laws of the Commonwealth of Kentucky. Foreign Corporations doing business within the Commonwealth of Kentucky are required to be registered with the Secretary of State, New Capitol Building, Frankfort, Kentucky and must be in good standing.

12.2.2 The Foreign Corporate Prime Bidder, if not registered with the Secretary of State at the time of the Bid submittal, shall be required to become registered and be declared in good standing prior to the issuance or receipt of a contract.

12.3 Domestic Corporations

- 12.3.1 Domestic corporations are required to be in good standing with the requirements and provisions of the Office of the Secretary of State.

ARTICLE 13 - TAXES

13.1 Kentucky Sales and/or Use Tax

- 13.1.1 Prime Bidders are informed that construction contracts for the University of Kentucky are not exempt from the provisions of the Kentucky Sales and/or Use Tax. All adjustments and allowances for the current sales and/or use tax shall be provided for in the Bid amount as no adjustments will be permitted and/or made after the fact.

13.2 Federal Excise Tax

- 13.2.1 The University of Kentucky, through the Commonwealth of Kentucky, is entitled to exemption from Federal Excise Tax. All Prime Bidders or Subbidders shall take this into consideration in their Bid.
- 13.2.2 The Prime Bidder and Subbidders will be required to accept liability for payment of all payroll taxes or deductions required by local and federal law, including but not limited to old age pension, social security or annuities. Worker's Compensation Insurance shall be carried to the full amount as required by Kentucky Statutes.

ARTICLE 14 - PLANHOLDERS

14.1 Intent to Bid and Planholders List

- 14.1.1 A request for Bid Proposal and Bid Documents will be considered as intent to submit a Bid and unless otherwise notified, the firm's name will appear on the planholder's list showing all Prime Bidders, planholders and issued Addenda. In the event the Prime Bidder elects not to submit a Bid, it is requested that notifications of such fact be furnished the University of Kentucky, Division of Purchasing on or before five (5) days prior to the closing date for receipt of Bids.
- 14.1.2 The published planholder and Addenda listing is for general information purposes and the exclusion or inclusion of any firm in no way constitutes and/or implies a disapproval of the qualifications of any listed Prime Bidder, Subbidder, material or equipment supplier. If the Prime Bidder or planholder notes that he is not in receipt of certain or any of the listed Addenda, it shall be his responsibility to obtain copies from the Division of Purchasing, Capital Construction Section to review same at any of the designated reporting agencies that Bid Documents have been placed for review.

15.1 Representative at Bid Opening

- 15.1.1 A Prime Bidder is to have a responsible authorized representative at the bid opening for (1) submittal of the material and equipment listing and (2) post bid review of the apparent low Bid or Bids that follow immediately after the opening and reading of the Bids. Failure to comply with this requirement may be cause for rejection of Bid.
- 15.1.2 Unless otherwise provided for in the Bidding Documents, the apparent low Prime Bidder shall submit the material and equipment listing on or within one (1) hour from the close of the reading of the Bids. The list of materials and equipment shall be that listing contained with the Form of Proposal.
- 15.1.3 The post Bid review will include representatives of the Consultant, representative of the Prime Bidder and required University personnel. Preliminary review will be directed toward subcontractor, material list, Unit Prices, and qualifications of the Prime Bidder.
- 15.1.4 The Prime Bidder's representative shall be qualified to respond to and give clarifications as required.

ARTICLE 16 - EQUAL EMPLOYMENT AND DISCRIMINATION16.1 General Policy

- 16.1.1 The University of Kentucky is committed to a policy of providing equal job opportunities on public contracts and prohibiting discrimination based on race, creed, color, sex, age, religion, or national origin. KY Statutes 45:550 through 45:640, and applicable General Conditions.
- 16.1.2 The utilization of minority vendors and subcontractors are encouraged, whenever possible, on public works contracts. The Prime Bidder and Subbidder should make full efforts to locate minority business persons. For assistance in identifying minority subcontractors, Prime Bidders may contact the Kentucky Office for Minority Business Enterprises, 2329 Capital Plaza Tower, Frankfort, KY 40601, or Office of Equal Opportunity, Contract Compliance, New Capital Annex Bldg., Frankfort, KY 40601.
- 16.1.3 Prime Bidders and subcontractors are required to comply with Federal Executive Order 11246 entitled "Equal Employment Opportunity" as amended.

16.2 Kentucky Equal Employment Act - 1978

16.2.1 The provisions of KRS 45:550 and 45:640, known as the Kentucky Equal Employment Act of 1978, hereinafter referred to as the Act, shall be binding upon the declared successful Prime Bidder and any subsequent contract awarded to the Prime Bidder, except contracts exempted in accordance with KRS:45:590 of the Act, as follows:

- (1) A Prime Bidder or subcontractor otherwise subject to the provisions of KRS 45:570 of the Act are exempt as to any affirmative action or reporting requirements, if:
 - (a) The contract or subcontract awarded is in the amount of \$250,000.00 or less, and the amount of the contract is not a subterfuge to avoid compliance with the provisions of this Act.
 - (b) The Prime Bidder or subcontractor utilizes the services of fewer than eight (8) employees during the course of the contract.
 - (c) The Prime Bidder or subcontractor employs only family members or relatives.
 - (d) The Prime Bidder or subcontractor employs only persons having a direct ownership interest in the business, and such interest is not a subterfuge to avoid compliance with the provisions of this Act.

16.3 Reporting Compliance

All compliance reporting shall be directed to the University of Kentucky, Compliance Officer, it shall be the responsibility of the Prime Bidder - subcontractor to comply with the provisions of KRS 45:550 - 45:640 unless exempted through the compliance officer.

16.3.1 Any party not otherwise exempted from the affirmative action or reporting requirements of the Act, shall within five (5) calendar days after being declared the successful Prime Bidder, submit to the University Official:

- (A) A statement of intent to comply in full with all requirements of the Kentucky Equal Employment Act of 1978.
- (B) A breakdown of the bidding party's existing work force, indicating the race, sex, age, position held, county and state of residence and date of employment of each employee.

- 16.3.2 Within ten (10) days after the receipt of this report, the University Official, through its office of Equal Employment Opportunity, Contract Compliance, will determine whether the Prime Bidder's work force is reflective of the percentage of available minorities in the areas from which the bidding party's employees are drawn. If a determination is made that the bidding party's work force is reflective of the percentage of available minorities in this drawn area, the bidding party shall be "certified" and be thereby qualified for the contract and to bid on any contract covered by this Act without filing additional data for a period of six (6) months.
- 16.3.3 If it is determined by the Official that the bidding party's work force reflects an under utilization of minorities, the bidding party and the University shall be so notified and no certification be granted. The bidding party shall then have the option of filing with the University of Kentucky an affirmative action plan, indicating goals and timetables for recruiting and hiring minorities throughout the contractors's work force. The Official shall be available, upon request from all bidders, to furnish technical assistance in fulfilling the requirements of the Act.
- 16.3.4 If the bidding party is subsequently awarded the contract being sought, failure to comply with the goals and timetables set forth in the affirmative action plan shall be an unlawful practice under the Act and shall constitute a material breach of contract.
- 16.3.5 If the Official determines that the submitted affirmative action program does not fulfill the provisions of the Act, the bidding party shall be so notified and no certification shall be granted.
- 16.3.6 If the bidding party's work force is not reflective of the percentage of minorities in the drawing area and he has complied with all other affirmative action requirements in the Act, he may certify by verified affidavit that he has made every reasonable effort to comply with said percentage requirements and he shall thereafter be entitled to all benefits of the Act.
- 16.3.7 Payments - Failure to comply after contract award, may result in payments being withheld pending satisfactory fulfillment of contractual obligations.

All bidders shall comply with the Copeland "Anti-Kick Back" Act (18 USC874) as supplemented in the Department of Labor Regulations (29CFR, Part 3). This Act provides that each Prime Bidder, subcontractor or subgrantee is prohibited from inducing, by any means, any person employed in the construction, completion or repair of public work to give up any part of the compensation to which he is otherwise entitled.

TABLE OF CONTENTS
FOR PART III
GENERAL CONDITIONS

47

<u>ARTICLE</u>	<u>TITLE</u>	<u>PAGE</u>
1	GENERAL CONDITIONS	GC-1
2	DEFINITIONS	GC-1
3	THE ARCHITECT	GC-2
4	WORK REASONABLY INFERRED AND DISCREPANCIES	GC-3
5	PRE-CONSTRUCTION CONFERENCE	GC-4
6	SHOP DRAWING SCHEDULE	GC-4
7	SHOP DRAWING SUBMITTAL	GC-4
8	LAYING OUT WORK	GC-5
9	PLANS, SPECIFICATIONS AND RECORD DRAWINGS	GC-6
10	TEMPORARY UTILITIES	GC-6
11	MATERIALS, EQUIPMENT, APPLIANCES, AND EMPLOYEES	GC-6
12	ROYALTIES AND PATENTS	GC-7
13	SURVEYS, PERMITS, REGULATIONS AND STANDARD CODES	GC-7
14	PROTECTION OF WORK, PROPERTY, AND PUBLIC	GC-8
15	CONSTRUCTION AND SAFETY DEVICES	GC-8
16	INSPECTION OF WORK	GC-9
17	SUPERINTENDENT - SUPERVISION	GC-10
18	CHANGES IN THE WORK	GC-10
19	RULES AND MEASUREMENT	GC-11
20	CONCEALED CONDITIONS	GC-12
21	DELAYS AND EXTENSION OF TIME	GC-12
22 GC-14	WEATHER DATA	
23	CORRECTIONS OF WORK BEFORE FINAL PAYMENT	GC-15
24	CORRECTION OF WORK AFTER FINAL PAYMENT	GC-15
25	TERMINATION OF CONTRACT FOR CONVENIENCE OF OWNER	GC-15

Revised 1/88/A

26	TERMINATION OF CONTRACT FOR DEFAULT ACTION OF CONTRACTOR	GC-15
27	SUSPENSION OF WORK	GC-16
28	TIME OF COMPLETION	GC-17
29	LIQUIDATED DAMAGES	GC-18
30	PAYMENT TO THE CONTRACTOR	GC-18
31	CONTRACTOR'S PAYMENT TO SUBCONTRACTOR	GC-22
32	USE OF COMPLETED PORTIONS	GC-22
33	INDEMNIFICATION	GC-22
34	INSURANCE	GC-23
35	GUARANTY BONDS	GC-25
36	DAMAGED FACILITIES	GC-25
37	CLAIMS FOR DAMAGE	GC-26
38	LIENS	GC-26
39	ASSIGNMENT	GC-26
40	SEPARATE CONTRACTS	GC-27
41	MUTUAL RESPONSIBILITY OF CONTRACTORS	GC-27
42	CONTRACTOR/SUBCONTRACTOR RELATIONSHIP	GC-27
43	CASH ALLOWANCE	GC-28
44	PROJECT SITE LIMITS	GC-28
45	CLEAN UP	GC-28
46	POINTS OF REFERENCE	GC-28
47	SUBSTITUTION - MATERIALS AND EQUIPMENT	GC-29
48	TEST AND INSPECTION	GC-29
49	GUARANTEE AND WARRANTY	GC-29
50	NONDISCRIMINATION IN EMPLOYMENT	GC-30
51	AFFIRMATIVE ACTION OR REPORTING REQUIREMENTS	GC-30
52	ACTION AGAINST CONTRACTOR AND EMPLOYEES	GC-31

PART III
UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION SECTION
GENERAL CONDITIONS

ARTICLE 1 - GENERAL CONDITIONS

These general conditions apply to each section of the specifications and are binding upon the Contractor and all Subcontractors as each are subject to the provisions contained herein.

These general conditions are intended to define and establish certain rules and provisions of the Contract governing the operation so that the Work may be continued and be completed in an orderly, expeditious and workmanlike manner.

In addition University of Kentucky General Conditions revised June 1986 shall also apply and by reference shall become a part of any Contract established. All bidders who have requested to be placed on the University of Kentucky bid list or who bid on University of Kentucky projects agree to these General Requirements. Copies of these General Requirements can be obtained by contacting University of Kentucky, Division of Purchasing, Room 322 Peterson Service Building, Lexington, Kentucky 40506-00057.

These general conditions, together with the specifications and Contract Documents, shall further establish the standards of material and workmanship for the "Work."

ARTICLE 2 - DEFINITIONS

Wherever used in these general conditions or in other Contract Documents, the following terms have the meaning indicated which are applicable to both the singular and plural thereof:

ARCHITECT means person, company, or corporation, either Architect, Engineer or other Consultant, named in the Contract Documents, and is the Owners representative.

CALENDAR DAY means a day of twenty-four hours measured from midnight to the next midnight.

CHANGE ORDER means a written order to the Contractor signed by the Owner, issued after the execution of the Contract, authorizing a change in the Work or an adjustment in the Contract sum or the Contract time.

CONSTRUCTION MANAGER - Means the Owners representative, providing professional and managerial services throughout the construction process, when applicable to the project.

CONTRACT means the bid offer of the Contractor as officially accepted by the Owner, evidenced by the "Letter of Intended Acceptance," executed Owner/Contractor agreement of Contract, and the executed University of Kentucky Purchase Order.

ARTICLE 2 - DEFINITIONS - CONTINUED

CONTRACT AMOUNT means the sum stated in the Contract including any authorized adjustments thereto; it is the total amount payable by the Owner to the Contractor for the performance of the Work under the Contract Documents.

CONTRACT COMPLETION TIME means the number of consecutive Calendar Days to complete the Work as specified in the Contract Documents.

CONTRACT DOCUMENTS means the written agreement between the Owner and Contractor, the Payment and Performance Bond, the general, supplemental and special conditions, the drawings, the specifications, all addenda and modifications and Change Orders issued after execution of the Contract. The Contract Documents complement each other, whatever is required by one shall be as binding as if required by all.

CONTRACTOR means the person, company, or corporation with whom the Owner has executed the Contract.

FIELD ORDER means a written order issued by the Architect which clarifies or interprets the Contract Documents, or orders minor changes in the Work which does not require a Change Order.

KRS REFERENCES - refers to the "Kentucky Revised Statutes" adopted by the Commonwealth of Kentucky, including all laws that may have been revised, amended, supplemented or new laws enacted.

OWNER means the University of Kentucky.

PROVIDE, as used throughout the specifications, shall mean furnish, install and pay for.

SHOP DRAWINGS mean drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

SUBCONTRACTOR means the person, company or corporation having a direct Contract with the Contractor for the performance of a part of the Work.

WORK refers to the scope of specified completed construction and services required by the Contract Documents. It includes labor, material, equipment, supplies, supervision, plant, taxes, utilities, and equipment to perform and complete the Contract in an expeditious, orderly and workmanlike manner.

WORK ORDER means a written notice by the Owner to the Contractor, authorizing the Contractor to commence work under the Contract and establishing the beginning date from which the time for completion shall be established.

ARTICLE 3 - THE ARCHITECT

The Architect will be the Owner's representative when applicable to the project, during construction and until the Work is complete. The Architect will advise and consult with the Owner. The Owner's instructions to the Contractor shall be forwarded through the Architect.

The Architect will visit the site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Work, and to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of his on-site inspections, he will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor.

The Architect will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by the Contractor.

Claims, disputes, and other matters in question that arise relating to the execution or progress of the Work shall be referred initially in writing to the Architect for decision, which he will render in writing within a reasonable time.

The Architect will have authority to reject Work which does not conform to the Contract Documents or level of quality and performance.

The Architect will review and take appropriate action upon Contractor's submittals, such as Shop Drawings, product data, and samples, but only for conformance with the design concept of the Work, and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

The Architect will prepare Change Orders, and forward to the University for authorization.

The Architect will conduct inspections to determine the dates of substantial completion and final completion; will receive and forward to the Owner for the Owner's review, written warranties and related documents required by the Contract and assembled by the Contractor.

ARTICLE 4 - WORK REASONABLY INFERRED AND DISCREPANCIES

The Contractor shall make a thorough examination of the site and study all drawings and specifications and all conditions relating to the erection of the Work. Materials or labor evidently necessary for the proper and complete execution of the Work, which are not specifically mentioned although reasonably inferred therefrom, shall be included in the Work.

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. Anything called for in the drawings or specifications shall be included in the Contractor's Work, the same as if included in both. In the event of a doubt arising as to the true intent and meaning of the drawings and specifications, the Contractor shall report it at once to the Architect. The Architect shall furnish, with reasonable promptness, additional instructions, by means of drawings, details or otherwise necessary for the proper execution of the Work. All

ARTICLE 4 - WORK REASONABLY INFERRED AND DISCREPANCIES - CONTINUED

such drawings and instructions shall be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. The Work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions. In case of conflicts between the various Contract Documents the order of precedence will be as follows: (1) Addenda, (2) Division 1 - General Requirements, (3) Instructions to Bidders, (4) Special Conditions, (5) General Conditions, (6) Technical Specifications, and (7) Drawings.

ARTICLE 5 - PRE-CONSTRUCTION CONFERENCE

Following the execution of the Contract, a pre-construction conference will be held. Representatives of the Design and Construction Division, Purchasing Division, Architect/Engineer, Prime Contractor, and major Subcontractors will be present to discuss the time for construction, methods and plan of operation, authority of Architects and Engineers approval of shop drawings, progress estimates and requests for payments, and other relevant questions. The time and location of this meeting will be the responsibility of the Architect/Engineer in consultation with other interested parties.

ARTICLE 6 - SHOP DRAWINGS SCHEDULE

The Contractor shall submit a schedule to the Architect, prior to the submittal of the firm's first application for payment, fixing the dates for the submission of Shop Drawings.

ARTICLE 7 - SHOP DRAWING SUBMITTAL

The Contractor shall review, approve, and submit Shop Drawings to the Architect, in accordance with the approved schedule as herein detailed. By approving and submitting Shop Drawings, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

The Contractor shall submit Shop Drawings required for the Work and the Architect will review and take appropriate action within 10 working days, Shop Drawings and samples, or return for corrections as required. The review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. The approval of a separate item will not indicate approval of the assembly in which the item functions.

ARTICLE 7 - SHOP DRAWING SUBMITTAL - CONTINUED

The Contractor shall make any corrections required by the Architect for compliance to the Contract and shall return the required number of corrected copies of Shop Drawings and resubmit new samples until approved. The Contractor shall direct specific attention, in writing, or on resubmitted Shop Drawings, to revisions other than the corrections called for by the Architect on previous submissions. The Contractor's stamp of approval on any shop drawing or sample shall constitute a representation to Owner and Architect that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or he assumes full responsibility for doing so, and that he has reviewed or coordinated each shop drawing or sample with the requirements of the Work and the Contract Documents.

Where a shop drawing or sample submission is required by the specifications, no related Work shall be commenced until the submission has been approved by the Architect. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Architect.

The Architect's approval of Shop Drawings or samples shall not relieve the Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless the Contractor has in writing called the Architect's attention to such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall any approval by the Architect relieve Contractor from responsibility for errors or omissions in the Shop Drawings.

ARTICLE 8 - LAYING OUT WORK

The Contractor shall be responsible for all lines, levels and measurements of all work executed under his Contract. He shall verify the figures before laying out the work and will be held responsible for any error resulting from his failure to do so. The Contractor shall be prepared to guarantee to each of his Subcontractors the dimensions they may require for the layout and fitting of their work to the surrounding work.

Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the Work. The Contractor shall keep one copy of all Contract Documents, drawings, specifications and Shop Drawings on the site, in good order, and a qualified representative of the Contractor and each Subcontractor shall record on these prints, from day to day as work progresses, all changes and deviations from the Contract Documents. These prints shall be delivered to the Architect upon completion of the project. Approval of final payment requests will be contingent upon compliance with these provisions.

All drawings, specifications and copies, thereof, furnished by the Architect, are the property of the University of Kentucky. They are not to be used on other Work.

ARTICLE 10 - TEMPORARY UTILITIES

The Contractor shall provide and pay for unless hereinafter modified in the Special Conditions, all temporary conveniences including but not limited to; wiring, lighting, power and electrical outlets, heat, water, and sanitary facilities required for in construction. In the event the Owner elects to make available the electric power, at no cost, to the Contractor for construction purposes, it shall not be utilized as a means for temporary heat.

ARTICLE 11 - MATERIALS, EQUIPMENT, APPLIANCES, AND EMPLOYEES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, hoist, supplies, appliances, transportation, and other facilities necessary for the execution and completion of the Work. Contractor shall furnish, erect, maintain, and remove at the completion of the Contract, all temporary plant as may be required during the construction period.

The prime bidder, when placing orders for materials related to this project, shall do so using only his or her company name. The use of the University of Kentucky's name for ordering purposes is prohibited. Payment for materials and associated freight charges shall be the sole responsibility of the prime bidder. Any invoices received at the University that are related to this project will be forwarded to the prime bidder immediately. Copies of these invoices will be made and placed in the prime bidders file and he or she must show proof that these invoices have been paid in full prior to being released from the project.

The Contractors providing materials and equipment shall be responsible for the proper and adequate storage of their materials and equipment.

ARTICLE 11 - MATERIALS, EQUIPMENT, APPLIANCES, AND EMPLOYEES - CONT. 55

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The Contractor, shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among his employees and Subcontractors and shall not employ on the Work any person not skilled in the Work assigned to him.

The conduct of all personnel performing work or operations related to the Work is the responsibility of the Contractor. The consumption of alcohol and/or drugs on the job by any workers is strictly prohibited. Any workmen apprehended under the influence of alcohol and/or drugs on the premises at any time shall be subject to automatic dismissal by the Contractor. Improper conduct of any kind, will not be permitted and may result in the offending workmen, Subcontractor and/or Contractor being barred from the University premises.

ARTICLE 12 - ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees and shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof. However, the foregoing shall apply to the Owner in lieu of the Contractor in the event that a particular process or the product of a particular manufacturer is specified.

ARTICLE 13 - SURVEYS, PERMITS, REGULATIONS, AND STANDARD CODES

The Owner will furnish only such surveys as included in the Contract. Approvals, assessments, and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. However, utility tap-on fees shall be secured and paid for by the Contractor. Building, sewer, water, and similar type of permits, where required by local ordinances, shall be obtained by the Contractor, but no fee shall be charged to or paid by the Contractor as the University is exempt from such charges. A Contractor's license fee for doing business in the locale, if applicable, shall be paid for by the Contractor.

All branches of work shown on the plans and specifications, shall be executed in strict compliance with all state and federal regulations and codes, and shall be in compliance with all national codes when same have jurisdiction.

Reference to standards, codes, specifications, and regulations, refer to the latest edition of printing in effect at the date of issue shown, in the document unless another date is implied by the suffix number of standard. The Contractor shall furnish a final occupancy permit from the proper agency or agencies if required.

The Contractor shall continuously maintain adequate protection of all his Work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents.

In an emergency affecting the safety of life, or of the Work, or of adjoining property, the Contractor, without special instruction or authorization from the Architect or Owner, is hereby permitted to act, at his discretion, to prevent such threatened loss or injury.

ARTICLE 15 - CONSTRUCTION AND SAFETY DEVICES

- A. The Contractor shall provide safety controls for protection of the life and health of employees. He will utilize precautionary methods for the prevention of damage to property, materials, supplies, and equipment, and for avoidance of work interruptions in the performance of this Contract. In order to provide such safety control aforesaid, the Contractor shall comply with all pertinent provisions of the Kentucky Safety Standards of the Divisions of Occupational Safety and Health, Department of Labor, and Federal Occupational Safety and Health Construction Standards that are in effect at the time this Contract is entered into and during the period in which the Contract is to be performed. The Contractor shall also take or cause to be taken such additional measures as the Division of Occupational Safety may determine to be reasonably necessary for the purpose.
- B. The Contractor shall maintain an accurate record of and shall report to the Division of Occupational Safety and Health in the manner and on the forms prescribed by the Division, exposure data and all accidents resulting in death, traumatic injury, occupational disease, and/or damage to property, materials, supplies, and equipment incident to work under this Contract.
- C. The Division of Occupational Safety and Health will notify the Contractor, of any noncompliance with the foregoing provisions and the action to be taken. The Contractor shall after receipt of such notice immediately correct conditions. Such notice when delivered to the Contractor or his representative at the site of work, shall be deemed sufficient for this purpose. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory or corrective action has been taken. Failure or refusal to comply with the order will be grounds for stopping all payments due under the Contract to the Contractor. No part of the time lost due to any such stop order shall be made the subject of claim for extension of time or for excess cost or damages by the Contractor.
- D. Compliance with the provisions of the foregoing sections by Subcontractors will be the responsibility of the Prime Contractor.

ARTICLE 15 - CONSTRUCTION AND SAFETY DEVICES - CONTINUED

57

- E. Nothing in the aforesaid provisions shall prohibit the U.S. Department of Labor or the Kentucky Department of Labor, Division of Occupational Safety and Health, from enforcing pertinent occupational safety and health standards as authorized under Federal or State Occupational Safety and Health Law.
- F. The Contractor shall take all necessary precautions for the safety of employees on the Work, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed.
- G. The Contractor shall designate a responsible member of his organization, on the Work, as safety officer whose duty shall be to enforce safety regulations. The name and position of the person so designated shall be reported to the Architect by the Contractor.

ARTICLE 16 - INSPECTION OF WORK

The Owner, the Architect, and their representative shall at all times have access to the Work whenever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. The Architect shall be given timely notification in order to arrange for proper inspection of any work performed outside of the normal working day or week.

If the specifications, the Architect's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect timely notice of its readiness for inspection. Inspections by the Architect shall be made promptly.

If any portion of the Work should be covered contrary to the request of the Architect, or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect, be uncovered for his observation and shall be replaced at the Contractors expense.

If any other portion of the Work has been covered, which the Architect has not specifically requested to observe prior to being covered, the Architect, with the Owner's approval, may request to see such Work and it shall be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work should be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it should be found that this condition was caused by the Owner, or a separate Contractor employed by the Owner, in which event the Owner shall be responsible for the payment of such costs.

The Contractor shall maintain on the project a qualified superintendent and all necessary assistants as required to give supervision and direction as determined by the Owner to be necessary to properly control the Work through completion. The superintendent shall have full authority to act in behalf of the Contractor and all instructions given to the superintendent shall be considered as given to the Contractor. It shall be the responsibility of the Contractor's superintendent to coordinate the Work of all the Subcontractors.

The superintendent shall not be changed unless he proves to be unsatisfactory to the Contractor and ceases to be in his employ. The Contractor shall give timely notice to the Owner of a change in the superintendent and a reasonable explanation for the change.

If, during the course of construction the Owner or Architect determines that the superintendent is not performing his Work or who they feel is incompetent in performing his Work, the Owner may require the Contractor to remove the superintendent from the project and replace superintendent with an employee who meets with the Owners approval.

ARTICLE 18 - CHANGES IN THE WORK

The Owner, without invalidating the Contract, may as the need arises, order changes in the Work by deletion or modification. All such changes to the Work shall be authorized by Change Order and be executed under the conditions of the original Contract. Contract Amount and time of completion shall be adjusted at the time of ordering such change. The value of any such change in Work shall be determined in one or more of the following methods:

- A. By mutual acceptance of a lump sum properly itemized and by sufficient substantiating data to permit evaluation.
 1. All lump sum proposals shall include a detailed cost breakdown for each component of Work indicating both labor and material cost. In addition there shall be added an amount agreed upon, but not to exceed fifteen percent (15%) of the actual cost of the overhead and profit. Same shall be submitted to the Architect within seven (7) Calendar Days after receipt of the proposal request.
- B. By unit prices named in the Contract or subsequently agreed upon.

ARTICLE 18 - CHANGES IN WORK - CONTINUED

- C. If neither of the above methods are mutually agreed upon, ⁵⁹ the Owner may direct the Contractor to proceed with the change in the Work, for which the Contractor shall be paid the actual cost for labor, materials, supplies, equipment, and other services necessary to complete the Work. In addition, there shall be added an amount agreed upon, but not to exceed fifteen percent (15%) of the actual cost of the Work, to cover the cost of Contractor overhead and profit. However, if the above Work has been performed by a Subcontractor, the Contractor mark-up shall not exceed five (5%) percent for overhead and profit, for the Subcontractors portion of the change.

The Contractor shall keep and present in such form as the Architect may direct, a correct account of all items comprising the net cost of such Work, together with vouchers, including the cost to the Contractor of all labor, common and skilled, foremen, and the fair rental of all machinery together with reasonable transportation cost of machinery not on the site.

The Contractor shall not include in the new cost of change of Work any cost or rental of small tools, or any portion of the time of the Contractor or his superintendent, or any allowance for the use of capital, insurance or bond premium or any actual or anticipated profit, or job or office overhead not previously mentioned, these items being considered as being covered under the added amount for general overhead. Pending final determination of value, partial payments on account of changes in Work may be made on recommendation of Architect.

The Architect may issue Field Orders for minor changes in the Work, not involving extra cost and time extension, and not inconsistent with the purpose of the Work.

If the Contractor claims that any instructions by the Architect involve additional cost and/or time extension, he shall give the Architect written notice thereof within a reasonable time after the receipt of such instructions and before proceeding to execute the change in Work.

ARTICLE 19 - RULES AND MEASUREMENTS

The following Rules and Measurements shall apply to the use of Unit Prices:

- A. Except as provision that is made hereinafter for arbitrary measurements, the quality of excavation shall be its in-place volume before removal.
- B. No allowance will be made for excavating additional material of any nature taken out for the convenience of the Contractor beyond the quantity computed under these "Rules and Measurements."
- C. The quantities of excavation shall be computed from instrument readings taken by the Architect/Engineer in vertical cross sections located at such intervals that will assure accuracy.

- D. "Trench Excavation" for pipes shall arbitrarily be assumed to be two feet (2') wider than the outside diameter of the pipe barrel and with sides vertical.
- E. The quantities shall be computed from plan size, or if there are not drawings, from actual measurements of the work in place.
- F. Each unit price shall cover, among other things, engineering (surveying) costs and keeping excavating dry.

ARTICLE 20 - CONCEALED CONDITIONS

- A. Should concealed conditions encountered in the performance of the Work below the surface of the ground, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Contract Documents, or should unknown physical conditions below the surface of the ground, or should concealed or unknown conditions in an existing structure of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the Work of the character provided for in this Contract be encountered, the Contract sum shall be equitably adjusted by Change Order upon claim by either party made within twenty days after the first observance of the conditions.
- B. Contract Drawings may show the approximate location of the existing and new subsurface utility lines, these lines have been identified and located as accurately as possible using available information, however, the Contractor is responsible for verifying all actual locations. If any charted, uncharted or mislocated Utility service is interrupted for any reason, the Contractor will work continuously to restore service to the satisfaction of the Owner at no additional cost to the Owner.
- C. Should utilities require relocation or rerouting not shown or indicated to be relocated or rerouted, contact and cooperate with the Owner to make the required adjustments at an equitable change in the Contract price.
- D. Should the Contractor fail to proceed with appropriate repairs in an expedient manner the Owner reserves the right to have the work/repairs completed and deduct the cost of such work/repairs from the monies due or to become due to the Contractor. Refer to Article 36 of General Conditions.

ARTICLE 21 - DELAYS AND EXTENSION OF TIME

- A. It is agreed that time is of essence for each and every portion of this Contract and where under the Contract an additional time is allowed for the completion of any Work, the new time limit fixed by such extension shall be of the essence of this Contract. An extension of time shall not be cause for extra compensation under the contract. The Contractor may be granted an extension of time and/or relief from liquidated damages when the delay in completion of the Work is due to:

ARTICLE 21 - DELAYS AND EXTENSION OF TIME - CONTINUED

- (1) Any preference, priority, or allocation order duly issued by the government;
 - (2) Unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather.
- B. Claims for extensions of time and/or relief from liquidated damages, except for weather related claims, must be made in writing not later than ten (10) Calendar Days after the beginning of the delay. Claims for extension of time due to unusual inclement weather shall be made in writing not later than the tenth day of the month following the month in which the delay occurred.
- C. Claims for extension of time or relief from liquidated damages shall be stated in numbers of whole or half Calendar Days. The actual dates on which the delay(s) occurred must be stated. In case of claims for extension of time shall be granted only because such unusual inclement weather prevented the execution of critical items of the Work on normal working days. Calendar Days shall be computed by multiplying normal work days (5 days per week) by a factor of 1.4.
- D. Unusual inclement weather as used herein means unusually severe weather which is beyond the normal weather recorded and expected for the locality and/or the season or seasons of the year. Normal weather shall be determined based on records for the station of the United States Environmental Data Service shown in Article 22 of the General Conditions.
- E. Any claim for extension of time for strikes or lockouts shall be supported by a citation of facts concerning the strike, including, but not limited to, the dates, the craft concerned, the reason for the strike, efforts to resolve the dispute, and efforts to minimize the impact of the strike on progress.
- F. Any claims for extension of time for delays in transportation or for failures of suppliers shall be supported by a citation of facts demonstrating that the delays are beyond the Contractor's control, including, but not limited to, his efforts to overcome such delays.
- G. The time extensions for changes in the Work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The Change Order granting the time extension may provide the Contract Completion Date will be extended only for those specific elements so delayed and that the remaining Work will not be altered or may further provide for an equitable readjustment of liquidated damages pursuant to the new Contract completion dates.

ARTICLE 22 - WEATHER DATA

- A. Information and data furnished or referred to below is furnished for the Contractor's information. It is to be expressly understood, however, that the Owner will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor.
- B. Weather Conditions - Information in the tables below was compiled from the records of the National Weather Service Station at Lexington, Kentucky, based on the Normals, Means, and Extremes for 1951-1980.

C.

P R E C I P I T A T I O N

MONTH	NORMAL (INCH)	MAXIMUM of RECORD (IN)	MINIMUM of RECORD (IN)	24 HOUR MAXIMUM (IN)	AVERAGE NUMBER of DAYS .01" OR MORE
JAN	3.57	16.65	0.37	2.98	13
FEB	3.26	7.69	0.67	3.40	11
MAR	4.83	10.38	0.99	3.85	13
APR	4.01	9.30	0.79	4.39	13
MAY	4.23	10.84	1.20	3.24	12
JUN	4.25	11.69	1.36	5.88	11
JUL	4.95	10.64	1.83	4.73	11
AUG	3.96	11.18	0.56	3.56	9
SEP	3.28	9.69	0.24	4.35	8
OCT	2.26	6.13	0.33	3.21	8
NOV	3.30	6.87	0.45	2.58	11
DEC	3.78	9.97	0.61	3.77	12

T E M P E R A T U R E

MONTH	NORMAL (DEG F)	MAXIMUM of RECORD (DEG F)	MINIMUM of RECORD (DEG F)	AVERAGE NUMBER OF DAYS 32 DEG F OR BELOW
JAN	31.5	76	-21	11
FEB	34.5	76	-15	7
MAR	43.9	83	-2	1
APR	55.0	88	18	0
MAY	64.3	92	26	0
JUN	72.2	101	39	0
JUL	75.9	103	47	0
AUG	74.9	103	42	0
SEP	68.7	103	35	0
OCT	56.8	91	20	0
NOV	44.9	81	-3	1
DEC	36.1	75	-10	5

- D. For the purpose of this Contract, "Unusual Inclement Weather" will be interpreted as those days in excess of the number of days shown in the final column under PRECIPITATION on which rainfall is 0.01 inch or more and in the final column under TEMPERATURE on which maximum temperature was 32 degrees F or below.

ARTICLE 23 - CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor shall promptly remove from the premises all materials rejected by the Architect that fail to conform to the Contract, whether incorporated in the Work or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all Work of other Contractors destroyed or damaged by such removal or replacement.

ARTICLE 24 - CORRECTION OF WORK AFTER FINAL PAYMENT

Neither the final certificate of payment nor any provisions in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defects due thereto and pay for any damage to other Work resulting therefrom, which shall appear within a period of one year from the date of the certificate of substantial completion approved by the Owner. The Owner shall give notice of observed defects with reasonable promptness.

ARTICLE 25 - TERMINATION OF CONTRACT FOR CONVENIENCE OF OWNER

- A. The Owner may terminate the Contract for its own convenience when it is determined by the contracting authority that such termination will be in the best interest of the University of Kentucky. When it has been determined that a Contract should be terminated for the convenience of the University, the **Division of Purchasing** shall give reasonable written notice and negotiate a fair and just settlement with the Contractor.
- B. The Contractor shall have the burden of establishing the amount of compensation to which he believes himself to be entitled by the submission of complete and accurate cost data employed in submitting his bid performance of the Contract from the date of award through the date of termination for convenience.

ARTICLE 26 - TERMINATION OF CONTRACT FOR DEFAULT ACTION OF CONTRACTOR

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply sufficient skilled workmen, adequate equipment, or proper material, or if he should fail without proper cause to make prompt payment to Subcontractors, or for material or labor, or persistently disregard laws, ordinances, or the instruction of the Architect, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certification by the Architect that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor ten (10) days written notice by registered mail of declaration of default, take possession of the premises and all materials and building components thereon, and finish the Work in accordance with laws of the Commonwealth.

In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the Work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If any such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner, as herein provided, and the damage incurred through the Contractor's default shall be certified by the Architect. In accordance with KRS 45A:210.

ARTICLE 27 - SUSPENSION OF WORK

A. The Owner

1. The Owner may, for reasons exclusive of any court order or other types of litigation, suspend the Work or any portion thereof for a period of not more than thirty (30) days or such further time as agreed upon by the Contractor without causing termination of the Contract. The notice of suspension shall be in writing and shall set forth the reason for the suspension. The written notice shall fix the approximate date on which Work is contemplated to be resumed. The Owner will allow reimbursement of direct job expenses or extension of time, or both, directly attributable to the suspension.
2. In the event the Owner should be prevented or enjoined by court order from proceeding with the Work or from authorizing its prosecution, either before or after the award and Work Order, by reason of any litigation for a period up to ninety (90) days, the delay shall not constitute cause for termination and the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of Work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay. Such determination to be set forth in writing.

B. The Contractor

If, through no act or fault of the Contractor, the Work is suspended for a period of more than thirty (30) days by the Owner, or more than ninety (90) days under an order of court or other public authority, or the Architect fails to act on any request for payment within thirty (30) days after it is submitted, or the Owner fails to pay the Contractor the sum certified by the Architect or awarded by the court within fifteen (15) days of its approval and presentation, then the Contractor may, after ten (10) days from delivery of a written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for all Work executed and reasonable expenses sustained. In addition and in lieu of terminating the Contract, if the Architect has failed to act on a request for payment, or if the Owner has failed to make

B. The Contractor - Continued

any payment as aforesaid, the Contractor may upon ten (10) days written notice to the Owner and the Architect stop the Work until he has been paid all amounts then due, in which event and upon resumption of the Work, a Change Order shall be issued for adjusting the Contract price or extending the Contract time, or both, to compensate for the costs and delays attributable to the stoppage of the Work.

ARTICLE 28 - TIME OF COMPLETION

- A. The Contractor shall begin the Work on the date of commencement as specified in the WORK ORDER letter. He shall carry the Work forward expeditiously with adequate forces and management process for achieving completion of the Work within the Contract time. All time limits stated in the Contract Documents are of the essence of the Contract.
- B. The Contract time, unless otherwise provided, is the period of time specified in the Contract Documents for substantial and final completion, as defined hereinafter, including authorized adjustments thereto.
- C. Substantial completion of the Work shall mean when the Work is sufficiently complete, so that the Owner may occupy or utilize the Work for the use for which it is intended. The ability to occupy or utilize shall include regulatory authority approval as well as degree of construction of the Work. When the Owner accepts and occupies a building, the operation, maintenance, utilities, and insurance become the responsibility of the Owner.
- D. The date of substantial completion shall be that date certified by the Architect in accordance with the following procedures that the Work is sufficiently complete to occupy or utilize as defined above.
- (1) When the Contractor considers the Work is substantially complete, he shall submit a written declaration of his consideration to the Architect and a request for an inspection. The declaration and request shall be accompanied by a Contractor prepared list of those items of Work still to be completed or corrected. The failure of the Contractor or Architect to include any item or items on such list not completed or needing correction shall not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.
 - (2) The Architect shall, within a reasonable time after receipt of notification from the Contractor of declaration of substantial completion and request for inspection, make such inspection.

- (3) If the Architect considers the Work substantially complete, he shall prepare a Certificate of Substantial Completion which shall establish the date of substantial completion and the responsibilities between the Owner and Contractor for security, maintenance, heat, utilities and insurance, if not otherwise provided for in the Contract Documents, and a tentative list of items to be completed or corrected, and shall fix the time within which the Contractor shall complete the items listed therein. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of the responsibilities assigned to them in the certificate.
- (4) If, after making the inspection, the Architect does not consider the Work substantially complete, he will notify the Contractor in writing, giving the reasons therefor.

E. Final Completion

The Architect, upon receipt of written notice from the Contractor that the Work is complete and is ready for final inspection and acceptance, will promptly make such inspection and when he finds the Work completed and acceptable under the Contract Documents and the Contract fully performed, he will so notify the Contractor in writing and promptly certify a final Certificate for Payment to the Owner.

ARTICLE 29 - LIQUIDATED DAMAGES

Should the Contractor fail to satisfactorily complete the Work under Contract on or before the date stipulated for completion, the Contractor may be required to pay liquidated damages to the Owner for each consecutive Calendar Day that the Owner is deprived of full use of the area beyond the date specified unless otherwise stipulated elsewhere by Owner.

ARTICLE 30 - PAYMENT TO THE CONTRACTOR

The Owner will make payments, less ten percent (10%) retainage to the Contractor on amount of the Work performed or materials furnished for the Work in accordance with the conditions and in accordance with the following procedures:

A. SCHEDULES

Prior to submitting the first payment application, the Contractor shall submit a schedule of values (cost breakdown) on forms provided by the University and satisfactory to the Architect and Owner. The schedule of values shall include quantities and prices aggregating the Contract price and shall subdivide the Work into component parts. A copy of the schedules approved by the Architect and University will be provided to the Contractor which will be the basis for progress payments during construction. The schedule of progress shall indicate the starting and completion of the various stages of the Work.

B. APPLICATION FOR PROGRESS PAYMENT

- (1) Not more often than once a month, each Contractor shall submit to the Architect, engineer or applicable representative an itemized partial payment request supported by such data substantiating the Contractor's right to payment as the Architect or representative may require for Work completed during the current calendar month.
- (2) If payment is requested on the basis of materials and equipment not incorporated in the Work, but delivered and suitably stored at the site or at another location agreed to in writing, the Contractor must furnish the Owner the following:
 1. A list of the materials consigned to the Project (which shall be clearly identified), giving the place of storage, together with copies of invoices.
 2. Certification that all items have been tagged for delivery to the Project and that they will not be used for any other purpose.
 3. A letter from the Bonding Company indicating agreement to the arrangements and that payment to the Contractor shall not relieve either party of their responsibility to complete the Work.
 4. Evidence of adequate insurance covering the material in storage.
 5. Evidence that representatives of the Architect and/or Owner have visited the Contractor's place of storage and checked all items on the Contractor's Certificate. They shall certify, insofar as possible, that the items are in agreement with the Specifications and approve their incorporation into the Project.

Each subsequent application for payment shall include an affidavit of the Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of the Contractor's obligations reflected in prior applications for payment.

Materials suitably stored off site to be paid at 80% of the invoiced value providing the conditions of the paragraph above are met.

- (3) Upon certification of substantial completion of the Work, the Contractor may make application for the balance of the Contract funds less the value of incomplete Work, and request release of retainage, if any.

ARTICLE 30 - PAYMENT TO THE CONTRACTOR - CONTINUEDC. LIENS AND LIEN WAIVERS

The following lien and lien waiver policy shall become part of any Contract established for this project. Lien waivers from each (sub)contractor and major supplier and in turn, from their major sub-contractors and suppliers, for the amount of their previous payment must be submitted to the University of Kentucky before the next payment to that Contractor can be made.

Before payment request can be processed; the progress chart, payment request form and partial lien waivers shall be attached and submitted as one to the Architect or Construction Manager if applicable. The Architect or Construction Manager will verify that all partial lien waivers have been received prior to submitting this pay request package to the University.

Lien waivers must have original signatures. If the waiver is for a corporation, a corporate seal and title of officer signing waiver should be affixed. Lien waivers must be for the full amount of the previous payment.

Lien waivers for partial or progress payments are called Partial Waiver of Lien. Lien Waivers for the final payment are called Final Waiver of Lien. Final payments to (sub)contractors should be exchanged with their final lien waivers.

University of Kentucky normally has no physical control over payments to companies which provide services to its (sub)contractors. Therefore, it is imperative that lien waivers be obtained for payments to major sub-contractors and material suppliers.

D. CONTRACTOR'S WARRANTY OF TITLE

The Contractor warrants and guarantee that title to all Work, materials, and equipment covered by any application for payment, whether incorporated in the project or not, will pass to Owner at the time of payment free and clear of all encumbrance.

E. APPROVAL OF PAYMENTS

- (1) The Architect will, within ten (10) working days after receipt of each application for payment, either indicate in writing his approval of payment and present the application to the Owner, or return the application to the Contractor indicating in writing his reasons for refusing to approve payment. The Owner, provided no exception is taken to the application for payment submitted by the Architect, will generally issue payment on or within twenty (20) working days from the date received from the Architect. A reasonable delay on the part of the Owner in making payment to the Contractor for any given payment shall not be grounds for breach of Contract. The Architect may refuse to approve the whole or any part of any payment if it would be incorrect to make such presentation to the Owner.

- (2) Neither the final payment nor any part of the remaining retained percentage shall become due until the Contractor delivers to the Owner an affidavit that all payrolls, bills for materials, supplies and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied.

F. RETAINAGE REDUCTION

The Owner will retain 10% of the amount of each monthly estimate until final completion and the acceptance of all Work, except, provided project construction is 50% complete and the Work completed is equal to or ahead of the approved progress schedule, the Owner may reduce the retainage to 5% of the total current Contract Amount. In the event progress falls behind the approved progress schedule, the full 10% will immediately be reinstated by the Owner including all past retainages not held.

G. SECURITY OPTIONS FOR RETAINAGE

1. Prime Contract holders may exercise one of the three options, listed below, relating to retainage withholdings of said Contract:
 - (a) Option 1 - Deposit qualified securities with a legal incorporated custodian in order to withdraw retainage.
 - (b) Option 2 - Have a legal custodian purchase qualified securities for Contractor's account.
 - (c) Option 3 - Not to withdraw retainage until otherwise due under Contract conditions.
2. Detailed information and forms relative to retainage options will be furnished to the apparent successful Contractor at the time of award.

H. All Work must be approved by the Architect and the Owner before final payment will be made.

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

- (1) Liens filed against the project.
- (2) Faulty or defective Work appearing after final payment.
- (3) Failure of the Work to comply with the requirements of the Contract Documents.
- (4) Terms of any special warranties required by the Contract Documents.

ARTICLE 30 - PAYMENT TO THE CONTRACTOR - CONTINUED

- I. The acceptance of final payment by the Contractor shall constitute a waiver of all claims except those previously made in writing and identified by the Contractor as unsettled at the time of final application for payment.

ARTICLE 31 - CONTRACTOR'S PAYMENT TO SUBCONTRACTOR

The Contractor shall promptly pay each Subcontractor upon receipt of payment from the Owner the amount to which said Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such Subcontractor's Work. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payments to his Subcontractors in similar manner.

The Architect may, on request, furnish to any Subcontractor, information regarding the percentage of completion of the amounts applied for by the Contractor and the action thereon by the Architect.

Neither the Owner nor the Architect shall have any obligation to make payment to any Subcontractor except as may otherwise be required by law.

ARTICLE 32 - USE OF COMPLETED PORTIONS

By mutual agreement between the Owner, Contractor, and Architect, the Owner may use a completed portion of the project after an inspection is made. Such possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.

ARTICLE 33 - INDEMNIFICATION

- A. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, the Architect and their agents and employees from and against all claims, damages, losses and expenses, including attorney's fees, provided that any such claim, loss, damage or expense (a) is attributable to bodily 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 (b) 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.

- B. In any and all claims against the Owner, the Architect or any of their agents or employees by any employee of the Contractor, any Subcontractor, any one 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 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 workmen's compensation acts, disability benefit acts or other employee acts.
- C. The obligations of the Contractor under this paragraph shall not extend to the liability of the Architect, his 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 Architect, his agents or employees, provided such giving or failure to give is the primary cause of injury or damage.

ARTICLE 34 - INSURANCE

The Contractor shall furnish the Owner the Certificates of Insurance or other acceptable evidence that insurance is effective, and guarantee the maintenance of such coverage during the term of the Contract. Each policy of insurance **except Workers Compensation** shall name the University of Kentucky as an additional insured as its interest appears.

The Contractor shall not commence, nor allow any Subcontractor to commence work under this Contract, until the Owner has reviewed the certificates and approved coverages and limits as satisfying the requirements of the bidding process.

A. Workers' Compensation and Employers' Liability Insurance

The Contractor shall acquire and maintain Workers' Compensation insurance with Kentucky's statutory limits and Employers' Liability insurance with at least \$100,000 limits of liability for all employees who will be working at the project site. In the event any work is sublet, the Contractor shall require any Subcontractor to provide proof of this insurance for the Subcontractors' employees, unless such employees are covered by insurance provided by the Prime Contractor.

B. Public Liability Insurance

The Contractor shall acquire and maintain a Broad Form Comprehensive General Liability (CGL) Insurance Policy including premises - operations, products/completed operations, blanket contractual, broad form property damage, real property fire legal liability and personal injury liability coverage. Where required by the risks involved, Explosion, Collapse and Underground (XCU) coverages shall be added by endorsement.

B. Public Liability Insurance - Continued

The limits of liability shall not be less than \$500,000 each occurrence combined single limits for bodily injury and property damage. If split limits are used, they shall not be less than \$500,000 each person, each occurrence for bodily injury and \$250,000 each occurrence for property damage. It is preferred that this insurance be written on the 1973 CGL policy form. If the 1986 edition is used, limits available to cover the contractual liability and completed operation liability shall be comparable to that available under the 1973 form.

The Prime Contractor shall either:

1. require each Subcontractor to procure and maintain insurance of the type and limits stated during the terms of the Contract, or,
2. insure the activities of such Subcontractors under a blanket form as shown above.

C. Comprehensive Automobile Liability Insurance

The Contractor shall show proof and guarantee the maintenance of insurance to cover all owned, hired, leased or non-owned vehicles used on the project. All vehicles including such off the road tractors, cranes and rigging equipment must be defined as covered under the terms of this Contract. Policy limits shall not be less than \$500,000 combined single limits for bodily injury and property damage each occurrence. As an alternative, split limits of not less than \$500,000 bodily injury and \$100,000 property damage each occurrence shall be maintained.

D. Excess Liability Insurance

The Contractor shall acquire and maintain a policy of excess liability insurance in either an umbrella form or a following form excess over the required primary policies of broad form comprehensive general liability insurance, comprehensive automobile liability insurance and employers' liability insurance. This policy shall have a minimum of \$1,000,000 combined single limits for bodily injury and property damage for each occurrence in excess of the applicable limits in the primary policies. This limit shall be increased as appropriate to cover anticipated special exposures.

E. Builders Risk Insurance

Contractor shall procure and maintain builders risk insurance to cover "all risk" perils on a completed value form in an amount of protection of not less than 100% of the Contract amount.

F. Insurance Agent and Company

Insurance as required in the bidding process of the project, shall be written according to applicable state law in Kentucky. The policies shall be written by an insurer duly authorized to do business in Kentucky in compliance with KRS:304.1-.110.

G. Performance Bond

The Contractor shall furnish a Surety Bond in an acceptable form or an irrevocable letter of credit from a generally recognized lending institution (member FDIC) in favor of or payable to the University of Kentucky. The Surety Bond or letter of credit shall be in the amount equal to 100% of the Contract and shall be surety for the faithful performance of this Contract, payment for materials and persons performing labor, including payment of all employment contributions which become due and payable under Kentucky Unemployment Insurance Law. Bonds to provide surety shall be executed by a resident agent of the State and be in compliance with Kentucky Revised Statute 304.1-110, and 304.3-250.

ARTICLE 35 - GUARANTY BONDS

Contractor shall furnish a performance and payment bond(s) in an amount equal to one hundred percent (100%) of the Contract price as security for the faithful performance of the Contract and the payment of all persons performing labor on the project under the Contract and furnishing materials, equipment or supplies in connection with the Contract, including security for the payment of all unemployment contributions which become due and payable under Kentucky Unemployment Insurance Law.

The performance and payment bond(s) shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky, and the Contract instrument of bonds must be countersigned by a duly appointed and licensed agent resident of Kentucky.

ARTICLE 36 - DAMAGED FACILITIES

- A. The General Contractor shall repair and/or replace, at no expense to the Owner any damaged section of existing building, paving, landscaping, streets, drives, utilities, etc. caused by work performed under the Contract or incidental thereto, whether by his own forces or by his Sub-Contractors or by his material suppliers.
- B. Water damage to the interior of building, whether a new or existing building, shall be repaired and any materials damaged inside of the building shall be repaired and any materials damaged inside of the building shall be replaced at replacement cost, at the Contractor's expense including personal property.
- C. On existing buildings the Contractor along with the University Representative and Architect will tour the interior of the building to determine any existing damage before any work on this contract is done.

ARTICLE 36 - DAMAGED FACILITIES (CONTINUED)

D. Should the Contractor fail to proceed with appropriate repairs in an expedient manner the Owner reserves the right to have the work/repairs completed and deduct the cost of such work/repairs from the monies due or to become due to the Contractor. Refer to Article 20 of General Conditions. If the Owner deems it not expedient to correct Work damaged, or not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

ARTICLE 37 - CLAIMS FOR DAMAGE

- A. Should either party to the Contract suffer damage because of wrongful act or neglect of the other party, or of anyone employed by him, or others for whose act he is legally liable, or other controversy arising under the Contract. Such claim or controversy shall be made in writing to the other party within 30 days after the first occurrence of the event. If the claim or controversy is not settled or compromised within 30 days after receipt of written notice thereof, then the Contractor may institute legal action in Franklin Circuit Court.
- B. Any legal action entered against the Owner on the Contract by the Contractor shall be brought in the Franklin Circuit Court and shall be tried by the court sitting without a jury. All defenses in law or equity, except the defense of government immunity, shall be preserved to the Owner.

ARTICLE 38 - LIENS

- A. Lien for labor, materials, supplies, and rental equipment supplied on the Contract shall be as provided by Kentucky Revised Statutes.
- B. Statements of lien shall be filed with the Franklin County Clerk and action to enforce the same must be instituted in the Franklin Circuit Court, Frankfort, Kentucky, pursuant to KRS 45A:225-290.
- C. The lien shall attach only to any unpaid balance due the Contractor for the improvement from the time a copy of statement of lien, attested by the County Clerk, is delivered to the Owner, pursuant to the provisions of Kentucky Revised Statutes.

ARTICLE 39 - ASSIGNMENT

Neither party to the Contract shall assign the Contract or subject 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 Owner.

ARTICLE 40 - SEPARATE CONTRACTS

The Owner reserves the right to let other Contracts in connection with the Work or to perform Work with his own forces. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their Work and shall properly connect and coordinate his Work with theirs.

If any part of the Contractor's Work depends for proper execution or results upon the Work of any other Contractor, the Contractor shall promptly report to the Architect any observed defects in such Work that render it unsuitable for proper execution or connection. His failure to inspect and report shall constitute an acceptance of the other Contractor's Work as fit and proper for the reception of his Work, except as to defects which may develop in the other Contractor's Work after the execution of his Work.

Whenever Work being done by the Owner's forces or by other Contractors is contiguous to Work covered by this Contract, the respective rights of the various interests involved shall be established by the Architect to secure the completion of the various portions of the Work in general harmony.

ARTICLE 41 - MUTUAL RESPONSIBILITY OF CONTRACTORS

Should the Contractor cause damage to any separate Contractor on the Work, the Contractor agrees, upon due notice, to settle with such Contractor if he will so settle. If such separate Contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings at the Contractor's expense and if any judgement against the Owner arises therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

ARTICLE 42 - CONTRACTOR/SUBCONTRACTOR RELATIONSHIP

- A. The Contractor is fully responsible to the Owner for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him and for the coordination of the Work, including placement and fittings of the various component parts. No claims for extra cost as a result of the failure to coordinate the Work, or by acts or omissions of the various Subcontractors will be honored by the Owner.
- B. The Contractor agrees to bind every Subcontractor by the terms of the Contract Documents as far as applicable to their portion of the Work.
- C. The Contractor shall make no substitution for any Subcontractor except as provided by Article 7 of the Instruction to Bidders.

D. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and any Subcontractor. The Contractor is hereby put on notice that it is his contractual obligation to adjust differences between his several Subcontractors. Attempts to have the Owner or the Architect/Engineer settle disputes between Contractor and his Subcontractors or between Subcontractors will not be given consideration.

ARTICLE 43 - CASH ALLOWANCE

The Contractor shall have included in the Contract sum all allowances named in the Contract Documents and shall cause the Work so covered to be done as the Architect may direct. If the actual price for purchasing the "allowed materials" is more or less than the "cash allowance", the Contract price shall be adjusted accordingly. The adjustment in Contract price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance or any other incidental expenses. The cost of installation of the "allowed materials" shall be included in the applicable sections of the Contract specifications covering this Work.

ARTICLE 44 - PROJECT SITE LIMITS

The Contractor shall confine his apparatus, the storage of materials, and the operations of his workmen to project site limits indicated by the Contract Documents.

ARTICLE 45 - CLEAN UP

The Contractor shall at all times keep the premises free from accumulation of waste material or rubbish caused by his operation in connection with the Work. At the completion of the Work, he shall remove all his rubbish about the site of the Work and all his tools, scaffolding, and surplus materials and shall leave his Work in a clean and usable condition, satisfactory to the Architect, unless more exactly specified. This will include, but not necessarily be limited to, glass, hardware, fixtures, masonry, tile, and marble floors shall be cleaned and waxed, if provided for in the specifications. This shall be done before final inspection and acceptance. In case of dispute, the Owner may perform the cleaning task and charge the cost to the Contractor.

ARTICLE 46 - POINTS OF REFERENCE

The Contractor shall carefully preserve bench marks, reference points and stakes, and in case of willful or careless destruction, he shall be charged with the resulting expense of replacement and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.

ARTICLE 47 - SUBSTITUTION - MATERIALS AND EQUIPMENT

- A. Substitution of major equipment and materials previously submitted by the Contractor and approved by the Architect will be considered only for the following reasons:
1. Unavailability of the materials or equipment due to conditions beyond the control of the supplier.
 2. Inability of the supplier to meet Contract schedule.
 3. Technical noncompliance to specifications.
- B. Substitution of other equipment and materials named in the specifications will be allowed provided the proposed substitution will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function of that specified. The burden for proving equality is that of the Contractor.

Inclusion of a certain make or type of materials or equipment in the Contractor's estimate shall not obligate the Owner to accept such materials or equipment if it does not meet the requirements of the plans and specifications.

ARTICLE 48 - TEST AND INSPECTION

Regulatory agencies of the government having jurisdiction may require any Work to be inspected, tested or approved. The Contractor shall assume full responsibility therefor, pay all costs in connection therewith, unless otherwise noted, and furnish the Architect the required certificates of inspection, testing or approval.

The Contractor shall give the Architect timely notice of readiness of the Work for all inspections, tests or approvals.

ARTICLE 49 - GUARANTEE AND WARRANTY

Neither the final certificate of payment nor any provisions in the Contract Documents nor partial or entire use or occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

The Contractor shall guarantee that labor, equipment and materials will be free of defects for a period of one (1) year from the date shown on the certificate of substantial completion unless special conditions and/or additional warranty periods are required and as defined in Part V of Contract Documents, if applicable. The Owner will give notice of observed defects with reasonable promptness. Expendable items and wear from ordinary use are excluded from this guarantee. Prior to the final payment of the Work, the Contractor shall assemble and present to the Architect all guarantees and warranties required by the Contract Documents.

A. During the performance of the Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, age or national origin. 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. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, 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, color, religion, sex, age or national origin.
3. The Contractor will send to each labor union or representatives of workers with which he has a collective bargaining agreement or other Contract or understanding, a notice advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

B. Failure to comply with the above nondiscrimination clause constitutes breach of Contract. Failure to comply with any of the provisions shall constitute a material breach of Contract.

ARTICLE 51 - AFFIRMATIVE ACTION OR REPORTING REQUIREMENTS

A. The Contractor or Subcontractor is exempt from any affirmative action or reporting requirements, under the Kentucky Equal Employment Act of 1978, KRS 45:550-640 hereinafter referred to as The Act, if any of the following conditions are applicable:

1. The Contract or Subcontract awarded is in the amount of two hundred and fifty thousand dollars (\$250,000.00) or less, and the amount of the Contract is not a subterfuge to avoid compliance with the provisions of the Act.
2. The Contractor or Subcontractor utilizes the services of fewer than eight (8) employees during the course of the Contract.
3. The Contractor or Subcontractor employs only family members or relatives.

4. The Contractor or Subcontractor employs only persons having a direct ownership interest in the business and such interest is not a subterfuge to avoid compliance with the provisions of The Act.
- B. The Contractor or Subcontractor not otherwise exempted, shall:
1. For the length of the Contract, hire minorities from within the drawing area to satisfy the agreed upon goals and timetables. Should the union with which the Contractor has collective bargaining agreements be unwilling to provide sufficient minorities to satisfy the agreed upon goals and timetables, the Contractor shall hire minorities from other sources within the drawing area.
 2. The equal employment provisions of The Act may be met in part by the Contractor Subcontracting to a minority Contractor or Subcontractor. A minority Contractor or Subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.
 3. Each Contractor shall, for the length of the Contract, furnish such information as required by The Act and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with The Act and such rules, regulations and orders issued pursuant thereto.

ARTICLE 52 - ACTION AGAINST CONTRACTOR AND EMPLOYEES

1. If any contractor is found to have committed an unlawful practice against a provision of The Act during the course of performing under a Contract or Subcontract covered under The Act, the Owner may cancel or terminate the Contract, conditioned upon a program for future compliance approved by the Owner. The Owner may also declare such Contractor ineligible to bid on further Contracts until such time as the Contractor complies in full with the requirements of The Act.
2. Any provisions of The Act notwithstanding, no Contractor shall be required to terminate an existing employee, upon proof that that employee was employed prior to the date of the Contract nor hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

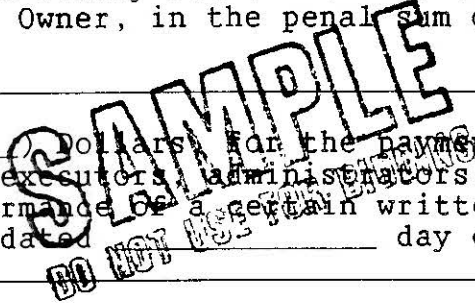
PART IV
UNIVERSITY OF KENTUCKY
PURCHASING DIVISION
CAPITAL CONSTRUCTION SECTION
PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____

as Principal, and _____

as Surety, are held and firmly bound into the University of Kentucky, hereinafter called the Owner, in the penal sum of _____

(\$ _____) Dollars, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assign for the faithful performance of a certain written contract, "U" Purchase Order # U _____, dated _____ day of _____ 1990, entered into between _____



a copy of which said contract is incorporated herein by reference and is made a part thereof as is fully copied herein.

NOW THEREFORE, the conditions of this obligation is such that if the Principal shall faithfully perform the terms and conditions of the contract in all respects on their part, and shall pay all obligations incurred in connection therewith, all such other obligations of every form, nature and character, and shall save harmless the Owner from all and any liability of every nature, kind and character which may be incurred in connection with the performance or fulfillment of such contract or other such liability resulting from negligency or otherwise on the part of such Principal, and further shall save harmless the Owner from all costs and damage which may be suffered by reason of the failure to fully and completely perform said contract and shall fully reimburse and repay the Owner for all expenditures of every kind, character and description which may exist on the part of the Principal in connection with the performance of said contract, and further that the Principal shall pay all lawful claims of all persons, firms, partnerships, or corporations for labor performed and for the payment of all unemployment contributions which become due and payable under the Unemployment Insurance Law, and material furnished in connection with the performance of the contract, and that the failure to do so with such persons, firms, partnerships, Principal and Surety under the obligations and provided, however, that no suit, action, or proceeding by reason of any default whatever shall be brought on this bond after two years from the date on which the final payment of the contract falls due; and provided further that if any alterations or additions which may be under the contract, or

in the work to be done under it, or the giving by the Owner of any extension of time for performance of the contract or any other forbearance of the contract or any other forebearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns for their liability hereunder. Notice to the Surety of any such alterations, extensions, or forbearance being expressly waived.

This obligation shall remain in force and effect until the performance of all covenants, terms, and conditions herein stipulated and after such performance, it shall become null and void.

IN TESTIMONY WHEREOF witness the hands and seals of the parties hereto on this the _____ day of _____, 1990.

Executed in _____ Counterparts.

WITNESSES

PRINCIPAL:

SAMPLE
DO NOT USE FOR ENDORSEMENT

SURETY:

(Attorney-in-fact)

NOTE: The number of executed counterparts of the Bond shall coincide with the number of executed counterparts of the contract.

COUNTERSIGNED:

BY: _____
Kentucky Resident Agent

Firm _____

Address _____

UNIVERSITY OF KENTUCKY
PURCHASING DIVISION
CAPITAL CONSTRUCTION SECTION

AGREEMENT OF CONTRACT

THIS AGREEMENT, made the _____ day of _____, in the year
One Thousand Nine Hundred Ninety by and between _____

hereinafter called the Contractor, and the UNIVERSITY OF KENTUCKY,
hereinafter called the Owner, is to bind the parties hereto to the
principles and terms set forth herein, and shall be binding upon the
parties hereto, only, upon the issuance of the "AWARD OF UNIVERSITY
PURCHASE ORDER "U" _____.

WITNESSETH, that the Contractor and Owner for the consideration
hereinafter named, agree as follows:

Article No. 1 SCOPE OF WORK:

The contractor shall furnish all of the materials and perform all the
work described in the Specifications and/or shown on the Drawings
entitled:

PROJECT #431.6 ROBOTICS FACILITY MODIFICATIONS

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY

which Specifications and/or Drawings are incorporated in and made a part
thereof.

Article No. 2 TIME OF COMPLETION:

The time or number of calendar days required for the completion of the
work included in this contract shall be APRIL 12, 1990 for the electrical
power systems, and an ADDITIONAL 15 CALENDAR DAYS beginning the week of
April 12, 1990 for installation of door/frames/hardware and the security
system. If the electrical power system work is not completed prior to
April 12, then all work must be suspended until April 23, 1990, whereupon
all uncompleted work can be resumed. This is due to the Robotics
Facility Grand Opening being held the week of April 16, 1990. The
Contractor must begin work immediately once he/she received written
authorization from the university to start work.

Article No. 3 LIQUIDATED DAMAGES:

It is mutually understood and agreed by and between the parties hereto
that time is of the essence in the performance of this contract and that
the Owner, the University of Kentucky, will sustain substantial monetary
and other damages in the event of a failure or delay by the Contractor in
the completion of the work hereby contracted. It is further understood
and agreed upon and made part of this Contract that the work must be
begun, performed, and completed without delay by the Contractor and if
the Contractor fails to begin, perform without interruption, and
completes said work in due and proper time, he may be declared in default
of this Contract. Fixed and liquidated damages in the amount of \$ 50.00

per calendar day shall be assessed against the Contractor for each calendar day during which the work under this contract remains incomplete after the Substantial Completion date, as the same may be revised by any extensions for time granted by the Owner in accordance with Article 21, "Delays and Extension of Time" of the General Conditions of this contract.

Said liquidated damages shall cease to accrue from and after the date the work under this contract has been substantially completed and accepted for beneficial occupancy and/or use by the Owner. If the work shall not in good faith be commenced by the Contractor at the time specified then the Contractor and his surety or sureties upon his bond shall be liable for and pay to the University of Kentucky all damages sustained by reason of such failure or breach of contract and the Purchasing Division may immediately relet the work.

Article No. 4 THE CONTRACT SUM:

The Owner shall pay the Contractor for the performance of the Contract, subject to any additions and deductions provided therein the total sum as follows:

Article No. 5 PROPOSED PAYMENTS

The Owner shall make payments on account of the contract as provided in accordance with Article 30, "Payment to Contractors" of the General Conditions, and for materials suitably stored at the site of the work up to the first day of that month as estimated by the Architect, less the aggregate of previous payments.

Article No. 6 ACCEPTANCE AND FINAL PAYMENT:

Final payment shall be due thirty (30) days after substantial completion of the work, provided, that all work has been fully completed in accordance with the plans and specifications as evidenced by a certificate by the Architect for the project, and it has been accepted by the Owner.

The Contractor shall submit with his final estimate evidence satisfactory to the Architect that all payrolls, material bills and other indebtedness connected with the work have been paid or that provisions for the satisfaction thereof have been made.

If, after the work has been substantially completed, full completion of the work is delayed through no fault of the Contractor, the Owner may pay to the Contractor from the remaining balance of funds for this contract a sum equal to the value of that portion of the work fully completed and accepted by the Owner as hereinbefore provided.

IN WITNESS WHEREOF the parties here to have executed _____
copies of this Agreement the date and year first hereinbefore written.

WITNESS:

CONTRACTOR:

By _____

Title _____

Approved for Legality and Form:

By _____

SAMPLE
DO NOT USE FOR BIDDING

By: _____
Vice Chancellor of Administration
University of Kentucky

PARTIAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

DC-136
(6/87)

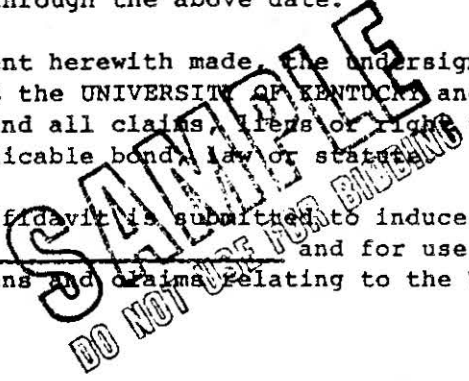
Received of the UNIVERSITY OF KENTUCKY the sum of \$ _____
which sum represents the total amount paid to the undersigned for work done and materials
supplied to Project _____, No. _____ (of which
the University of Kentucky is the Owner) through the _____ day of _____,
19____, pursuant to undersigned's contract with the UNIVERSITY OF KENTUCKY.

The undersigned, on oath, states that this waiver is for work, labor, materials,
services and miscellaneous (all of which are hereinafter referred to as "Work Items")
supplied to the said Project through the above date and that no additional sum is
claimed by the undersigned respecting said Project, except pursuant to unresolved
Notices of Claim, if any, to the extent previously filed in writing in conformity with
the requirements of said contract between the undersigned and the UNIVERSITY OF KENTUCKY.

The undersigned, on oath, states that all persons and firms who supplied Work Items
to the undersigned in connection with said Project have been fully paid by the
undersigned for such Work Items through the above date.

In consideration of the payment herewith made, the undersigned does fully and
finally release and hold harmless the UNIVERSITY OF KENTUCKY and its surety, if any,
through the above date from any and all claims, liens or right to claim a lien, arising
out of the Project under any applicable bond, law or statute.

It is understood that this affidavit is submitted to induce payment of the sum of
\$ _____ and for use by the UNIVERSITY OF
KENTUCKY in assuring that all liens and claims relating to the Work Items furnished by
the undersigned are paid.



Company
By _____
Title _____
Authorized Representative

STATE OF _____
COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 19____.

Notary Public

My Commission expires:

Future checks will NOT be released until this lien waiver and all required second
tier lien waivers are signed by an authorized officer, notarized and returned to the
University of Kentucky.

Business Officer

SUBCONTRACTOR OR SUPPLIER
PARTIAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

DC-138
(6/87)

Received of _____ contractor the sum of \$ _____
which sum represents the total amount paid for work done and materials supplied to
Project _____, No. _____ (of which the University of
Kentucky is the Owner) through the _____ day of _____, 19____, pursuant
to undersigned's contract with said contractor.

The undersigned, on oath, states that this waiver is for work, labor, materials,
services and miscellaneous (all of which are hereinafter referred to as "Work Items")
supplied to the said Project through the above date and that no additional sum is
claimed by the undersigned respecting said Project.

The undersigned, on oath, states that all persons and firms who supplied Work Items
to the undersigned in connection with said Project have been fully paid by the
undersigned for such Work Items through the above date.

In consideration of the payment herewith made, the undersigned does fully and
finally release and hold harmless said contractor, the UNIVERSITY OF KENTUCKY and their
sureties, if any, through the above date from any and all claims, liens or right to
claim a lien, arising out of the project under any applicable bond, law or statute.

It is understood that this affidavit is submitted to induce payment of the sum of
\$ _____ and for use in assuring the University of Kentucky and
others that all liens and claims relating to the Work Items furnished by the undersigned
are paid.

Company

By _____

Title _____

Authorized Representative

STATE OF _____

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 19____.

Notary Public

My Commission expires:

SUBCONTRACTOR OR SUPPLIER
FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

DC-139
(6/87)

Received of _____ contractor the sum of \$ _____

which sum represents the total amount paid for work done and materials supplied to
Project _____, No. _____ (of which the University of
Kentucky is the Owner) pursuant to undersigned's contract with said contractor.

The undersigned, on oath, states that this waiver is for work, labor, materials,
services and miscellaneous (all of which are hereinafter referred to as "Work Items")
supplied to the said Project and that no additional sum is claimed by the undersigned
respecting said Project.

The undersigned, on oath, states that all persons and firms who supplied Work Items
to the undersigned in connection with said Project have been fully paid by the
undersigned for such Work Items or that such payment will be fully effected immediately
upon receipt of this payment. Proof of such payments shall be filed by the undersigned
with the University of Kentucky within ten (10) days after receipt of this payment.

In consideration of the payment herewith made, the undersigned does fully and
finally release and hold harmless said contractor, the UNIVERSITY OF KENTUCKY and their
sureties, if any, from any and all claims, liens or right to claim a lien, arising out
of the Project under any applicable law, law or statute.

It is understood that this affidavit is submitted to induce final payment of the sum
of \$ _____ and for use by the UNIVERSITY OF
KENTUCKY in assuring that all liens and claims relating to the Work Items furnished by
the undersigned are paid.

Company

By _____

Title _____

Authorized Representative

STATE OF _____

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 19____.

Notary Public

My Commission expires:

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

DC-137
(6/87)

Received of the UNIVERSITY OF KENTUCKY the sum of \$ _____
which sum represents the total amount paid to the undersigned for work done and materials
supplied to Project _____, No. _____ (of which
the University of Kentucky is the Owner), pursuant to undersigned's contract with the
UNIVERSITY OF KENTUCKY.

The undersigned, on oath, states that this waiver is for work, labor, materials,
services and miscellaneous (all of which are hereinafter referred to as "Work Items")
supplied to the said Project and that no additional sum is claimed by the undersigned
respecting said Project.

The undersigned, on oath, states that all persons and firms who supplied Work Items
to the undersigned in connection with said Project have been fully paid by the
undersigned for such Work Items or that such payment will be fully effected immediately
upon receipt of this payment. Proof of such payments shall be filed by the undersigned
with the University of Kentucky within ten (10) days after receipt of this payment.

In consideration of the payment herewith made, the undersigned does fully and
finally release and hold harmless the UNIVERSITY OF KENTUCKY and its surety, if any,
from any and all claims, liens or rights to claim or lien, arising out of the Project
under any applicable bond, law or statute.

SAMPLE
DO NOT USE FOR RECORDING

It is understood that this affidavit is submitted to induce final payment of the sum
of \$ _____ and for use by the UNIVERSITY OF
KENTUCKY in assuring that all liens and claims relating to the Work Items furnished by
the undersigned are paid.

Company

By _____

Title _____
Authorized Representative

STATE OF _____

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 19____.

Notary Public

My Commission expires:

SECTION NO.	SECTION
01000	SPECIAL CONDITIONS
06400	ARCHITECTURAL WOODWORK
07510	BUILT-UP ASPHALT ROOFING SYSTEM
09250	GYPSUM DRYWALL
09510	ACOUSTICAL CEILINGS
09900	PAINTING
15010	MECHANICAL GENERAL PROVISIONS
15100	VALVES
15190	MECHANICAL IDENTIFICATION
15260	PIPING INSULATION
15290	DUCTWORK INSULATION
15510	HYDRONIC PIPING
15515	HYDRONIC SPECIALTIES
15890	DUCTWORK
15910	DUCTWORK ACCESSORIES
15936	AIR OUTLETS AND INLETS
15990	STARTUP AND ADJUSTMENT
16010	BASIC ELECTRICAL REQUIREMENTS
16060	MINOR ELECTRICAL DEMOLITION
16111	CONDUIT
16112	SURFACE RACEWAYS
16120	WIRE & CABLE
16130	BOXES
16141	WIRING DEVICES
16180	EQUIPMENT WIRING SYSTEMS
16190	SUPPORTING DEVICES
16195	ELECTRICAL IDENTIFICATION
16440	DISCONNECT SWITCHES
16510	LIGHTING FIXTURES
16722	SECURITY SYSTEM

SPECIAL CONDITIONS INDEX

1. THE PROJECT
2. GENERAL CONDITIONS
3. OWNERS REPRESENTATIVE
4. THE ARCHITECT
5. SUBMITTALS
6. SHOP DRAWINGS
7. DRAWINGS, SPECIFICATIONS, AND FIELD DOCUMENTS
8. CUTTING AND PATCHING
9. TIME FOR COMPLETION
10. LIQUIDATED DAMAGES
11. ORDERING MATERIALS
12. OWNER/CONTRACTOR COMMUNICATION
13. PRE-BID CONFERENCE
14. MAINTENANCE OF EXISTING FACILITIES
15. SANITARY FACILITIES
16. CLEANING AND TRASH REMOVAL
17. DELIVERIES
18. PROGRESS MEETINGS
19. MAINTAINING ACCESS TO BUILDING
20. UTILITIES
21. FIELD OFFICE
22. PROJECT SIGN
23. DIVISION OF SPECIFICATIONS
24. NOTICE AND SERVICE THEREOF
25. CERTIFICATION OF MATERIALS
26. TEMPORARY WORK
27. TESTING AND INSPECTION
28. SMOKE DETECTORS AND FIRE ALARM SYSTEMS - EXISTING OR NEW FACILITIES
29. WALK-THROUGH
30. PARKING
31. OPERATING AND MAINTENANCE MANUALS
32. REMOVED ITEMS
33. FIRE TRUCK ACCESS
34. UTILITY OUTAGES - ENTIRE BUILDING OR GROUP OF BUILDINGS
35. UTILITY OUTAGES - ROOM OR SECTION OF A BUILDING
36. HAZARDOUS MATERIALS
37. FIRE PROTECTION DURING CONSTRUCTION
38. OWNER SUPPLIED MATERIALS

1. THE PROJECT

These specifications and the drawings accompanying them describe the work to be done and the materials to be furnished for the Modification of the Robotics Facility, University of Kentucky, Lexington, Kentucky.

2. GENERAL CONDITIONS

A. These Special Conditions are intended to modify, add to, or delete from, applicable Articles of the General Conditions.

B. Where any Article of the General Conditions is supplemented by these Special Conditions, the Article shall remain in effect and the supplement shall be added thereto.

3. OWNER'S REPRESENTATIVE

The University's Representative during construction shall be the designated University of Kentucky, Design and Construction Division Construction Administrator.

4. THE ARCHITECT

A. Wherever in these Contract Documents reference is made to the Architect, it shall be understood to mean Sherman/Carter/Barnhart Architects or their duly authorized representatives. (See Article 2 and Article 3 of the General Conditions.)

5. SUBMITTALS

Following the signing of the Contract and prior to the actual beginning of construction, the following items shall be submitted to the Architect.

1. Log of Submittals itemizing all Shop Drawings, Certifications, and Guarantee's, and any other items required to be submitted to the Architect or the owner for review, approval or acceptance.
2. Cost Breakdown showing the total cost of each major item or discipline of construction, broken down by Material and Labor costs.
3. Construction Schedule in a line-item/bar chart format showing anticipated starts, durations and completions of all major items or disciplines of work. The line items of bars on this schedule shall be identical to the line-items on the Cost Breakdown.

6. SHOP DRAWINGS

A. See Article 7 of the General Conditions for additional requirements on Shop Drawing Submittals.

B. The contractor shall submit a minimum of 8 copies/sets for review by the architect and owner of each submittal item. Two of the above copies will be returned to the contractor with action indicated. If the contractor desires additional copies then additional copies will have to be submitted to the architect.

7. DRAWINGS, SPECIFICATIONS, AND FIELD CONDITIONS

A. The Drawings and Specifications are intended to be fully explanatory and supplementary. However, should anything be shown, indicated or specified on one and not the other, it shall be done the same as if shown, indicated or specified in both.

B. Prospective Contractors will secure all data at the site of the building such as grades of lot, convenience of receiving and sorting material, location of public services, and other information which will have a bearing on making their proposals or on the execution of the work if awarded the Contract, and no allowance will be made for failure of the Contractor to obtain such site information prior to bidding.

C. Where it is obvious that a drawing illustrates only a part of a given work or of a number of items, the remainder shall be deemed repetitious and so constructed.

8. CUTTING AND PATCHING

Refer to Architectural, Mechanical, and Electrical drawings for cutting and patching. All new work shall be connected to the existing construction in a neat and workmanlike manner, presenting a minimum of contrast between old and new work. Do all patching of the existing construction as may be required for the new construction. Necessary patching, closing of existing openings, repairing and touching up shall be included as required for a proper, neat and workmanlike finished appearance. Any existing item that is to remain and is damaged during construction shall be replaced at the Contractors expense.

9. TIME FOR COMPLETION

The time for completion as further defined in Article 29 of the General Conditions shall be April 12, 1990 for the electrical power systems, and an additional 15 calendar days beginning the week of April 23, 1990 for installation of doors/frames/hardware and the security system. If the electrical power systems work is not completed prior to April 12, then all work must be suspended until April 23, 1990, whereupon all uncompleted work can be resumed. This is due to the Robotics Facility Grand Opening being held the week of April 16, 1990.

10. LIQUIDATED DAMAGES

Should the Contractor fail to complete the work under this Contract on or before the date stipulated for Final Completion (or such later date as may result from extensions in the Contract Time granted by the Owner), he agrees that the Owner is entitled to, and shall pay the Owner as liquidated damages the sum of Fifty Dollars

(\$50.00) for each consecutive calendar day until final completion is reached as described herein, which sum is agreed upon as a reasonable and proper measure of damages which the Owner will sustain per diem by failure of Contractor to complete work within time as stipulated; it being recognized by Owner, Contractor and Architect that the loss to the Owner which could result from a failure of Contractor to complete on schedule is uncertain and cannot be computed exactly. In no way shall costs of liquidated damages be construed as a penalty on the contractor. It shall not be construed by any subcontractor procured directly by the Contractor that the foregoing condition lessens Contractor's legal right of affixing and/or pro-rating such liquidated costs where legally applicable. See also Article 30 of the General Conditions.

11. ORDERING MATERIALS

See also Article 11 of the General Conditions.

- A. Immediately following the Contract Award, the Contractor shall determine the source of supply for all materials and the length of time required for their delivery, including materials of all subcontractors and order shall be placed for such materials promptly.
- B. If, for any reason, any item specified will not be available when needed and the Contractor can show that he has made a reasonable persistent effort to obtain the item in question, then the Architect is to be notified in writing within fourteen (14) days after the Contract Award and he will either determine a source of supply or make an appropriate substitute within terms of the Contract.
- C. Otherwise, the Contractor will not be excused for delays in securing materials specified and will be held responsible if completion of the work is thereby delayed.

12. OWNER / CONTRACTOR COMMUNICATION

All directives to the Contractor shall be from the Architect during construction. Any directives from the Owner to the Contractor shall be issued through the Architect during construction.

13. PRE-BID CONFERENCE

A pre-bid conference and tour of the project area will be held approx. Seven (7) days prior to receipt of bids. All contractors wishing to bid on this project should have a representative attend this conference. Items discussed at the Pre-Bid Conference will become part of the contract, and any contractor who doesn't attend the Pre-Bid Conference will still be held responsible for all items discussed.

14. MAINTENANCE OF EXISTING FACILITIES

- A. The building will be used by the Owner during the construction period.
- B. The Contractor shall consult with the Architect carefully coordinating his work. This project is to be constructed in such a manner as to not affect the use of this building.
- C. The Contractor shall maintain his materials and organize his work in such a manner as to minimize any inconvenience to persons using this structure.
- D. Special effort shall be made by the Contractor to prevent any employee from entering existing buildings for reasons except construction business. In particular, use of toilets other than those assigned, drinking fountains, vending machines, etc. is strictly prohibited.

15. SANITARY FACILITIES

One pair of restroom facilities within Robotics will be designated at the Pre-Construction Meeting for use by the contractors workmen during construction. The designated restroom(s) and access areas to them must be kept clean and neat during construction. Failure to keep them clean will result in the contractor being required to provide portable toilets at his cost at the site. Drinking water shall be provided from an approved safe source, so piped or transported as to be kept clean and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing governing health regulations.

16. CLEANING AND TRASH REMOVAL

- A. The General Contractor shall provide adequate trash containers of proper size. The General Contractor shall remove all trash from the project daily.
- B. The General Contractor shall broom clean the entire area of new construction and shall keep streets used as access to and from the site free of mud and debris.
- C. The Contractor shall be responsible for removal from the site of all their liquid waste or other waste that requires special handling.
- D. All exit ways, walks, drives, grass areas, and landscaping must be kept free from debris at all times.
- E. Failure to comply with the above requirements shall be cause for stopping work until the condition is corrected.

17. DELIVERIES

The route for delivery of materials shall be coordinated with the University of Kentucky, Owners Representative (See Article # 2 of Special Conditions) and the Architect.

A. In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, hold a general progress meeting weekly with time coordinated with preparation of the payment request. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting. Review each entity's present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, house-keeping, change orders, and documentation of information for payment requests. Discuss whether each element of current work is ahead of schedule, on time, or behind schedule in relation with updated progress schedule. Determine how behind-schedule work will be expedited, and secure commitments from entities involved in doing so. Discuss whether schedule revisions are required to ensure that current work and subsequent work will be completed within Contract Time. Review everything of significance which could effect progress of the work.

1. Initial Progress Meeting - Schedule initial progress meeting, recognized as "Pre-Construction Meeting", for a date not more than 15 days after date of commencement of the work. Use it as an organizational meeting, and review responsibilities and personnel assignments.
2. Reporting: - Within 3 days after each progress meeting date, distribute copies of minutes-of-the-meeting to each entity present and to others who should have been present. Include brief summary (in narrative form) of progress of the work since the previous meeting and report.
3. Schedule Updating: - Immediately following each progress meeting, where revisions to progress schedule have been made or recognized, revise progress schedule. Reissue revised schedule concurrently with report of each meeting.

B. With the express purpose of expediting construction and providing the opportunity for cooperation of affected parties, progress meetings will be held and attended by representatives of:

- (1) The Owner's Representative
- (2) The Architect.
- (3) General Contractor.
- (4) Subcontractors.
- (5) Such other Subcontractors as may be requested to attend.

C. A location near the site will be designated where such meetings will be held. Participants will be notified of the dates and times of the meetings by the Architect.

19. MAINTAINING ACCESS

The Owner shall have access to the existing building throughout the duration of the project. The existing building will remain in use throughout the duration of construction. The Contractor shall coordinate construction activity to assure the safety of those who must cross the project site. Provide and maintain the necessary barriers and accommodations for a completely safe route of accessibility.

20. UTILITIES

This article modifies Article 10 of the General Conditions. The Owner shall provide water and electricity for this project. The Contractor shall provide for all temporary taps, hoses, lines, boxes and installation of the same. Electricity shall not be used for heating purposes. In the event that the Contractor is wasteful with these utilities, the University shall charge the Contractor accordingly.

21. FIELD OFFICE

A field office shall not be required for this project.

22. PROJECT SIGN

No Project Sign will be allowed.

23. DIVISION OF SPECIFICATIONS

Division of specifications into sections is done for the convenience of reference and is not intended to control contractors in dividing work among subcontractors or to limit scope of work performed by any trade under any given section.

24. NOTICE AND SERVICE THEREOF

Any notice to any contractor from the Owner relative to any part of this contract shall be in writing and considered delivered and the service thereof completed when said notice is posted by registered mail to the said contractor at his last known address, or it may be delivered in person to the said contractor or his authorized representative on the work.

25. CERTIFICATION OF MATERIALS AND EQUIPMENT

Manufacturers shall, when requested by the Architect, submit test reports prepared by reputable firms, or laboratories, certifying to performance operation construction wearability, etc., supporting claims made by the manufacturer of the equipment or materials

proposed for inclusion in the Work, and shall further submit therewith a list of three (3) installations where said equipment or materials have been in service for five (5) years.

26. TEMPORARY WORK

All required temporary work shall provide for safe and proper performance of the work. The Contractor shall be responsible for adequate design and construction of all temporary work used in construction of Contract Work.

27. TESTS AND INSPECTIONS

Unless otherwise noted herein the cost of testing shall be paid for by the Contractor and the testing laboratory approved by the Owner. Refer to the Technical Specifications for particular testing requirements, and/or work performed or coordination required by the Contractor in connection therewith.

28. SMOKE DETECTORS / FIRE ALARM SYSTEMS - EXISTING AND/OR NEW FACILITIES

Protect all smoke detectors in work areas to prevent false alarms. The Contractor will be responsible for any false alarm caused by dust created in their work areas or dust traveling to areas beyond the work, past inadequate protection barriers. If there is a need for an existing or newly installed fire alarm system or parts of that system to be serviced, turned off, or disconnected, prior approval must be obtained from the Owner's Representative and notification given to the Campus Dispatch Office. The Contractor must follow the procedure outlined for Utility Outages and any penalty charged by the responding fire department due to a false alarm will be paid by the contractor. As soon as all work is completed, notification must be given to the Owner's Representative and to the Campus Dispatch Office prior to reactivation of the system. Prior to Final Payment to the Contractor, all protected smoke detectors will be uncovered and tested.

29. WALK-THROUGH

After the "Work Order" is issued but before work by the Contractor is started, a walk-through of the area is required to document condition of the space, surfaces, or equipment.

All damaged surfaces or other defective items to be recorded to preclude subsequent disputes of responsibility for such damages. See General Conditions - Article 5.

The walk-through to be attended by the following:

- Owner's Representative
- Representative of the user of the facility.
- Contractor
- Architect

Written documentation of walk-through to be provided by Architect with copies distributed to all parties. Polaroid type color photographs to be provided and labeled by Contractor: one (1) copy given to Architect for record. All parties to agree on list of damages.

30. PARKING

The University of Kentucky will make available for purchase by the Contractor two "A" CONSTRUCTION PARKING PASSES. These passes may be purchased by the Contractor to be used by Contractor and/or the Contractors key subcontractors and personnel during construction period. The cost of each pass will be \$6/per month and may be purchased from the Parking Office after the contract is signed. Necessary documents required to purchase the passes will be available at the Pre-Construction Conference.

31. OPERATING AND MAINTENANCE MANUALS

The University requires three (3) operating and maintenance manuals to be turned over to the Owner's Representative upon acceptance of the facility. Each manual is to be bound in a hard cover three (3) ring binder, and indexed based on the CSI standard. The Index should include vendors name, address, and telephone number for all equipment purchased on the project. In addition one copy of the shop drawings are to be transmitted to the Owner's Representative during construction for the Construction Administrator's file.

The operating and maintenance manuals are to contain copies of the approved shop drawings, manufacturer's operating and service manuals (which include schematic repair diagrams), parts lists, and manufacturer's warranty listing the University as the Owner for all equipment installed. If the service manual from any one vendor covers several different model numbers, the model used on the project must be highlighted. The binders shall not be more than 2/3 full, if so additional binders shall be furnished. Where shop drawings include fire alarm or communication system schematics, a mylar sepia of each drawing sheet is required to be supplied to the University. (Note: Mylar sepia sheets are to be rolled together in a separate bundle, and placed in a cardboard tube. Folded mylar sheets are not acceptable.) Final Payment to the Contractor will not be made until Maintenance Manuals have been recieved and approved for content by the University.

32. REMOVED ITEMS

Materials to be turned over to the University by the Contractor shall be delivered to a warehouse within a five (5) mile radius of the project site.

Access to the building site and to surrounding buildings must be maintained during construction for local fire truck access. Phase construction as required to maintain access to new, existing, or temporarily relocated standpipe, fire hydrant connections, the requirements of Section 3018.8 of the KBC, and fire alarm annunciator panels. Coordinate with the local fire department that would respond to an alarm during the initial start up of construction to ensure a complete understanding of their requirements.

34. UTILITY OUTAGES - ENTIRE BUILDING OR GROUP OF BUILDINGS

The Owner's Representative is the General Contractors contact with the University for requesting Utility Outages. The Owner's Representative will contact the proper departments and divisions within the University and receive approval from those units prior to allowing a planned outage to occur. The established standard within the University Departments and Divisions of an entire building or group of buildings shall be three weeks written notice. The written notice shall include the type of utility to be interrupted, reason for outage, length of outage, what will be affected by the outage, and a statement of whether or not the materials are on hand to complete the work. If a specific time is desired for the outage it should be included. The Owner's Representative will insure that all parties affected are contacted and that a time which is least disruptive to all parties is selected. At the appointed outage time work shall begin and proceed with all required manpower until work is complete. The Owner's Representative will then notify all affected departments or divisions.

35. UTILITY OUTAGES - ROOM OR SECTION OF A BUILDING

The Owner's Representative is the General Contractors contact with the University for requesting Utility Outages. The Owner's Representative will contact the proper departments and divisions within the University and receive approval from those units prior to allowing a planned outage to occur. The established standard within the University Departments and Divisions of an entire building or section of a building shall be a verbal request one week prior to outage. The verbal request shall include the type of utility to be interrupted, when the outage is desired, reason for outage, length of outage, and what will be affected by the outage. If one weeks notice is insufficient or inappropriate as judged by the Owner's

Representative, then written notification may be required. The Owner's Representative will insure that all parties affected are contacted and that a time which is least disruptive to all parties is selected. At the appointed outage time work shall begin and proceed with all required manpower until work is complete. The Owner's Representative will then notify all affected departments or divisions.

A. In the event the contractor encounters material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) on the site, which has not been rendered harmless, the contractor shall immediately stop work in the area affected and report the condition to the Architect and the Owner's Representative. The work in the affected area shall not thereafter be resumed, if in fact, the material is asbestos or polychlorinated biphenyl (PCB) and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB), or when it has been rendered harmless. The contractor shall not be required to perform any work relating to asbestos or polychlorinated biphenyl (PCB).

B. The University and the Contractor will be under the requirements of the OSHA Hazard Communication Standard (29) CFR 1910.1200). MSDS sheets can be reviewed upon request by the Contractor as they pertain to the work areas of the individual project. Photocopies of the MSDS sheets may be made by the Contractor at his expense. The standard includes but is not necessarily limited to:

1. A list of the hazardous chemicals to which the Contractor's employees may be exposed shall be provided to the Contractor or his representative.
2. Measures the Contractor's employees may take to lessen the possibility of exposure to these chemicals.
3. The location of and access to MATERIALS SAFETY DATA SHEETS (MSDS) related to the chemicals located in the contract area.
4. Procedures the Contractor's employees are to follow if they are exposed to hazardous chemicals above the Permissible Exposure Limit (PEL).
5. The Contractor shall provide the University with a list of any hazardous chemicals they will bring on the job site that will expose the University's employees. The Contractor shall allow the University with copies of MATERIAL SAFETY DATA SHEETS upon request.

37. FIRE PROTECTION DURING CONSTRUCTION

All Contractors will maintain fire protection as required by the Kentucky Building Code. If the Contractor utilizes University owned portable fire extinguishers during the contract period, then the Contractor is responsible for servicing the extinguishers utilized. On renovation projects where a building, wing, or floor is turned over to the Contractor, then the Contractor will be responsible for maintaining all existing Fire Protection Equipment and must replace any fire protection equipment damaged, lost, or misplaced during the contract period.

38. OWNER SUPPLIED MATERIALS

The University of Kentucky in an effort to expedite this project has Pre-ordered certain long lead time items. The following is the list of material that has been Pre-Ordered:

- 1. Doors/Frames/Hardware
- 2. Electrical Switchgear
- 3. Electrical Panel Boards & Breakers
- 4. Electrical Transformer
- 5. Liebert Cooling Unit
- 6. Liebert UPS System
- 7. Undercounter Ice Machine

All Pre-Ordered Material was specified to be shipped to the Robotics Facility. It will be the contractors responsibility to receive and off load the Pre-Ordered Material. If there is damage to the Pre-Ordered Material, then the Contractor is to notify the Owner's Representative immediately so that the Owner can seek replacement material.

The University will also supply additional floor tile as needed to by the modifications project. This applys to areas where new walls are installed, any existing casework is removed, or relocation of plumbing lines.

END OF SECTION

U.K. ROBOTICS FACILITY

File No. 431.0

SECTION 06400 - ARCHITECTURAL WOODWORKPART 1 - GENERALRELATED DOCUMENTS:

Drawings and general provisions of the Contract, apply to work of this section.

DESCRIPTION OF WORK:

Extent of each type of architectural woodwork is indicated on drawings.

Types of architectural woodwork include the following:

Architectural cabinets including:

Laminate clad cabinets.

Tops.

QUALITY ASSURANCE:

AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI), except as otherwise indicated.

WIC Quality Marking: Mark each unit of the following types of architectural woodwork with WIC Certified Compliance Grade Stamp indicating quality grade required.

Plastic laminate countertop.

Coordination: Coordinate cabinet shop drawings and fabrication with hardware requirements.

Installer Qualifications: Arrange for installation of architectural woodwork by a firm which can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this project.

SUBMITTALS:

U.K. ROBOTICS FACILITY

File No. 431.0

Product Data: Submit manufacturer's product data for each product and process specified as work of this section and incorporated into items of architectural woodwork during fabrication, finishing, and installation.

Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, attachment devices and other components.

DELIVERY, STORAGE AND HANDLING:

Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

Do not deliver woodwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, woodwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

PART 2 - PRODUCTS

ACCEPTABLE MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide high pressure decorative laminates by the following (to match existing):

Laminart

FABRICATION, GENERAL:

Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.

Fabricate woodwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.

y

U.K. ROBOTICS FACILITY

File No. 431.0

Complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

Pre-Cut Openings: Fabricate architectural woodwork with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating.

Measurements: Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.

ARCHITECTURAL CABINETS, LAMINATE CLAD:

Quality Standard: Comply with AWI Section 400 and its Division 400B.

Laminate Clad Cabinets: Comply with the following requirements:

Grade: Custom.

Type of Cabinet Construction: As indicated.

Laminate Cladding: High pressure decorative laminate complying with NEMA LD 3 and as follows:

Colors, Patterns and Finishes:

Cabinets - Laminart #833-T Glacier (textured)

Countertops - Laminart #804-T Pewter (textured)

Verify existing laminate colors in Kitchen 327 prior to fabrication.

Laminate Grade for Exposed Surfaces: Provide laminate cladding complying with the following requirements for type of surface and grade.

U.K. ROBOTICS FACILITY

File No. 431.0

Horizontal Surfaces: GP-50 (0.050" nominal thickness).

Postformed Surfaces: PF-42 (0.042" nominal thickness).

Vertical Surfaces: GP-50 (0.050" nominal thickness).

Edges: GP-50 (0.050" nominal thickness) finish.

Semi-Exposed Surfaces: Provide surface material indicated below:

High pressure laminate, GP-28.

CABINET HARDWARE AND ACCESSORY MATERIALS:

General: Provide cabinet hardware and accessory materials associated with architectural cabinets.

Hardware Standard: Comply with ANSI/BHMA A156.9 "American National Standard for Cabinet Hardware".

Hardware Finishes: Comply with BHMA 1301 for finishes indicated by BHMA Code Numbers or if not otherwise indicated, provide finishes complying with requirements indicated below:

For exposed hardware comply with requirements indicated for finish and base indicated by BHMA Code Number below:

630 (Satin stainless steel).

For concealed hardware provide manufacturer's standard finish which complies with product class requirements of ANSI/BHMA A156.9.

FASTENERS AND ANCHORS:

Screws: Select material, type, size and finish required for each use. Comply with FS FF-S-111 for applicable requirements.

For metal framing supports, provide screws as recommended by metal framing manufacturer.

Nails: Select material, type, size and finish required for each use. Comply with FS FF-N-105 for applicable requirements.

Anchors: Select material, type, size and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent woodwork anchorage.

PART 3 - EXECUTION

INSTALLATION:

Install woodwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.

Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

Anchor woodwork to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nails for exposing nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.

Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Maintain veneer sequence matching (if any) of cabinets with transparent finish.

Tops: Anchor securely to base units and other support systems as indicated.

U.K. ROBOTICS FACILITY

File No. 431.0

ADJUSTMENT, CLEANING, FINISHING AND PROTECTION:

Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; where not possible to repair replace woodwork. Adjust joinery for uniform appearance.

Clean, lubricate and adjust hardware.

Clean woodwork on exposed and semi-exposed surfaces.

END OF SECTION 06400

U.K. ROBOTICS FACILITY

File No. 431.0

SECTION 07510 - BUILT-UP ASPHALT ROOFING SYSTEM

Summary: This work includes all cutting, patching, flashing and reworking of existing 4-Ply Built-up-Roofing as required to install supports for the roof-top condenser unit as indicated on the plans. The work is to be coordinated with the mechanical and electrical contractor types of penetrations to be installed and for scheduling of work to minimize the time required to complete roofing installation.

Manufacturer's Guarantee/Warranty: The Roofing Contractor to perform this work must be an approved applicator of Owens-Corning Roof System. Provide in writing to the architect a guarantee from the manufacturer that the work to be performed herein will be included as part of the original roof warranty (10 years).

Smooth-Surfaced Coated Built-Up Roofing: (Owens-Corning Fiberglass Corp., Derbigum SBS-170, mop - on modified bitumen).

Base-sheet ply of No. 43 coated base sheet, nailed if possible, otherwise mopped down with 20 lbs. (+25%) of steep asphalt (ASTM D 312, Type III).

Prime cementitious substrate before base-sheet application, with 1.0 gal. per square of asphalt cut-back primer (ASTM D 41).

3 courses of ply sheets, each mopped down with 20 lbs. (+25%) of asphalt of type indicated.

Ply Sheets: Asphalt impregnated glass fiber mat (ASTM D 2178), Type IV.

Slopes to 1/2": Asphalt Type II (flat), ASTM D 312.

Slopes 1/2" to 1": Steep asphalt (Type III), ASTM D 312.

Slopes over 1": Asphalt Type IV (special steep), ASTM D 312.

Cold Applied Surface Coating: Glaze coat exposed ply sheets during installation with same asphalt used for inter-ply mopping, and apply surface coating of type indicated.

Aluminum roof coating, asphaltic (ASTM D 2824, Type II) with non-asbestos, inorganic fiber reinforcement, 2 gal. per square.

Manufacturers: Provide smooth-surfaced asphalt roofing system by the following:

U.K. ROBOTICS FACILITY

File No. 431.0

Installation:

Wood Board/Timber Substrates: Cover with 5-lb. red rosin-sized paper before installing roofing.

Tape joints of substrate to prevent penetration by roofing materials.

Shingle multiple plies of roofing, unless otherwise required by felt manufacturer's instructions.

Nailing: Where nailing is indicated and on nailable substrates, comply with felt manufacturer's recommendations, and with FM and UL requirements, for nailing of roofing to substrates.

On sloping substrates (sloping more than 1" per foot) comply with NRCA "Roofing Manual" for nailing plies of BUR to substrate or to nailers in the substrate, and comply with composition roofing manufacturer's instructions for nailing composition roofing.

Bitumen Mopping: Apply interply and surface moppings of bitumen in accordance with "the EVT Method" as recommended by NRCA. Determine proper EVT for bitumen being applied either from manufacturer's data on bitumen container or from certification accompanying bulk bitumen.

Substrate Moisture: Do not install roofing on wet insulation or other moist substrates. Do not apply hot bitumen under a condition which would cause foaming (due to moisture).

Cant Strips: Provide molded fiber cant strips where possible, where edges of roofing adjoin vertical surfaces, to raise edges of roof membrane above main roof surface.

Tapered Edge Strips: Provide tapered edge strips where possible, where edges of roofing do not adjoin a vertical surface, to raise edges of roof membrane above main roof surface.

Nail edges of roofing where possible (without causing leaks), and nail composition flashing to vertical surfaces at edges and penetrations of roofing.

Seal edges of built-up roofing to prevent flow of bitumen into building and drains. Provide envelope of roofing felt or, where envelope is not possible, provide large beads of roofing cement.

U.K. ROBOTICS FACILITY

File No. 431.0

END OF SLV SECTION 07510

U.K ROBOTICS FACILITY

File No.431.0

SECTION 09250 - GYPSUM DRYWALLPART 1 - GENERALRELATED DOCUMENTS

Drawings and general provisions of the Contract, apply to work of this section.

SUMMARY:

Extent of each type of gypsum drywall construction required is indicated on Drawings:

This Section includes the following types of gypsum board construction:

Gypsum board screw-attached to steel framing and furring members.

DEFINITIONS:

Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA 505 for definitions of terms for gypsum board construction not otherwise defined in this section or other referenced standards.

SUBMITTALS:

Product data from manufacturers for each type of product specified.

QUALITY ASSURANCE:

Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

Provide fire-resistance-rated assemblies, identical to those indicated by reference to GA File Nos. in GA-600 "Fire Resistance Design Manual" or to design designations in U.L. "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

Single-Source Responsibility: Obtain each type of gypsum board

U.K ROBOTICS FACILITY

File No.431.0

and related joint treatment materials from a single manufacturer.

DELIVERY, STORAGE, AND HANDLING:

Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

Handle gypsum boards to prevent damage to edges, ends and surfaces. Do not bend or otherwise damage metal corner beads and trim.

PART 2 - PRODUCTS

MANUFACTURERS:

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

Manufacturer: Subject to compliance with requirements provide products of one of the following:

Steel Framing and Furring:

Bostwick Steel Framing Co.
Dale Industries, Inc.
Gold Bond Building Products Div., National Gypsum Co.
Incor, Inc.
Marino Industries Corp.
United States Gypsum Co.

Gypsum Boards and Related Products:

Centex American Gypsum Co.
Domtar Gypsum Co.
Georgia-Pacific Corp.
Gold Bond Building Products Div., National Gypsum Co.
United States Gypsum Co.

U.K ROBOTICS FACILITY

File No.431.0

STEEL FRAMING FOR WALLS AND PARTITIONS:

Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 deg and doubled over to form 3/16" minimum lip (return) and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:

Thickness: 0.179 inch, unless otherwise indicated.

Depth: As indicated.

Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth and minimum thickness of base (uncoated) metal as follows:

Depth: 7/8 inch.

Thickness: 0.0179 inch, unless otherwise indicated.

Fasteners: Provide fasteners of type, material, size, corrosion resistance, holding power and other properties required to fasten steel framing and furring power members securely to substrates involved; complying with the recommendations of gypsum drywall manufacturers for applications indicated.

GYPSUM BOARD:

General: Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end joints.

Gypsum Wallboard: ASTM C 36, and as follows:

Type: Regular, unless otherwise indicated.

Type: Type X for fire-resistance-rated assemblies.

Edges: Tapered.

Thickness: 5/8", unless otherwise indicated.

Available Products: Subject to compliance with requirements, products which may be incorporated in the Work where Type X gypsum wallboard is indicated include, but are not limited to, the following:

- "Gyprock Fireguard 'C' Gypsum Board"; Domtar Gypsum Co.
- "Fire-Shield G"; Gold Bond Building Products Div.,
National Gypsum Co.
- "SHEETROCK Brand FIRECODE 'C' Gypsum Panels"; United

U.K ROBOTICS FACILITY

File No.431.0

States Gypsum Co.

Gypsum Backing Board for Multi-Layer Applications: ASTM C 442 or, where backing board is not available from manufacturer, gypsum wallboard, ASTM C 36, and as follows:

Type: Regular, unless otherwise indicated.

Type: Type X for fire-resistance rated assemblies.

Edges: Manufacturer's standard.

Thickness: As indicated.

TRIM ACCESSORIES:

Cornerbead and Edge Trim for Interior Installation: Comply with ASTM C 840 and the following:

Cornerbead formed from zinc alloy, with flanges knurled and perforated or of fine-mesh expanded metal.

Steel Edge trim formed from galvanized steel, types per Fig. 1 of ASTM C 840 as follows:

"LC Bead", unless otherwise indicated.

"LK Bead" with square nose for use with kerfed joints.

"L" Bead where indicated.

"U" Bead where indicated.

GYPSUM BOARD JOINT TREATMENT MATERIALS:

General: Provide materials complying with ASTM C 475, ASTM C 840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.

Joint Tape: Paper reinforcing tape, unless otherwise indicated.

Setting-Type Joint Compounds: Factory-prepackaged, job-mixed, chemical-hardening powder products formulated for uses indicated.

Where setting-type joint compounds are indicated for use as

taping and topping compounds, use formulation for each which develops greatest bond strength and crack resistance and is compatible with other joint compounds applied over it.

For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.

For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile, use formulation recommended by gypsum board manufacturer for this purpose.

Drying-Type Joint Compounds: Factory-prepackaged vinyl-based products.

MISCELLANEOUS MATERIALS:

General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.

Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum boards.

Gypsum Board Screws: ASTM C 1002.

Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division-7 section "Joint Sealers."

Sound Attenuation Blankets: Unfaced mineral fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:

Mineral Fiber Type: Fibers manufactured from glass or slag.

PART 3 - EXECUTION

EXAMINATION:

Examine substrates to which drywall construction attaches or abuts, preset hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

U.K ROBOTICS FACILITY

File No.431.0

INSTALLATION OF STEEL FRAMING, GENERAL:

Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below to comply with details shown on Drawings:

Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetration of structural elements.

Where partitions and wall framing abuts overhead structure.

Provide slip or cushioned type joints as detailed to attain lateral support and avoid axial loading.

Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members or as indicated.

INSTALLATION OF STEEL FRAMING FOR WALLS AND PARTITIONS:

Install runners (tracks) at floors, ceilings and structural walls and columns where gypsum drywall stud system abuts other construction.

Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.

Installation Tolerances: Install each steel framing and furring member so that fastening surface do not vary more than 1/8 inch from plane of faces of adjacent framing.

Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are

U.K ROBOTICS FACILITY

File No.431.0

indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.

Install steel studs and furring in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard.

For single or double layer construction: 16 inches on center.

Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flange.

Frame door openings to comply with detailed indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above.

Frame openings other than door openings to comply with details indicated or if none indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.

APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL:

Gypsum Board Application and Finishing Standard: Install and finish gypsum board to comply with ASTM C 840.

Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed.

Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.

Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible. At stairwells and similar high walls, install board horizontally with end joints staggered over studs.

Install exposed gypsum board with face side out. Do not install

U.K ROBOTICS FACILITY

File No.431.0

imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

Located either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.

Form control joints and expansion joints at locations indicated, with space between edges of boards, prepared to receive trim accessories.

Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are properly braced internally.

Except where concealed application is required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area, and may be limited to not less than 75 percent of full coverage.

Fit gypsum board around ducts, pipes, and conduits.

Where partitions intersect open concrete coffer, cut gypsum board to fit profile of coffer and allow 1/4 to 1/2 inch wide joint for sealant.

Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4" to 1/2" space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.

Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

METHODS OF GYPSUM BOARD APPLICATION:

On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

Double-Layer Application: Install gypsum backing board for base layer and gypsum wallboard for face layer.

On partitions/walls apply base layer and face layers vertically (parallel to framing) with joints of base layer over supports and face layer joints offset at least 10 inches with base layer joints.

Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

Fasten with screws.

Double-Layer Fastening Methods: Apply base layer of gypsum board and face layer to base layer as follows:

Fasten both base layers and face layers separately to supports with screws.

INSTALLATION OF DRYWALL TRIM ACCESSORIES:

General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

Install corner beads at external corners.

Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where "U-bead" (semi-finishing type) is indicated.

Install "LC" bead where drywall construction is tightly abutted to other construction and back flange can be attached to framing or supporting substrate.

Install "LK" bead where substrate is kerfed to receive long flange of trim.

U.K ROBOTICS FACILITY

File No.431.0

Install "L" bead where edge trim can only be installed after gypsum board is installed.

Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

Install U-bead where indicated, and where exterior gypsum board edges are not covered by applied moldings or indicated to receive edge trim with face flanges covered with joint compound.

Install plastic edge trim where indicated on wall panels at juncture with ceilings.

Install control joints at locations indicated, or if not indicated at spacings and locations required by referenced gypsum board application and finish standard, and approved by the Architect for visual effect.

FINISHING OF DRYWALL:

General: Apply joint treatment at gypsum board joints (both directions), flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.

Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

Finish interior gypsum wallboard by applying the following joint compounds in 3 coats (not including prefill of openings in base), and sand between coats and after last coat:

Embedding and First Coat: Setting-Type Joint Compound.

Fill (Second) Coat: Setting-type joint compound.

Finish (Third) Coat: Ready-mix drying-type all-purpose or topping compound.

Partial Finishing: Omit third coat and sanding on concealed drywall work which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

PROTECTION:

U.K ROBOTICS FACILITY

File No.431.0

Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION 09250

U.K. ROBOTICS FACILITY

File No. 431.0

SECTION 09510 - ACOUSTICAL CEILINGSPART 1 - GENERALRELATED DOCUMENTS:

Drawings and general provisions of the Contract, apply to work of this section.

SUMMARY:

Extent of each type of acoustical ceiling is shown and scheduled on drawings.

Types of acoustical ceilings specified in this section include the following:

Acoustical panel ceilings, exposed suspension.

QUALITY ASSURANCE:

Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

Surface Burning Characteristics: As follows, tested per ASTM E 84.

Flame Spread: 25 or less.

Smoke Developed: 50 or less.

Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).

DELIVERY, STORAGE, AND HANDLING:

Deliver acoustical ceiling units to project site in original,

U.K. ROBOTICS FACILITY

File No. 431.0

unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.

Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

PART 2 - PRODUCTS

ACOUSTICAL CEILING UNITS, GENERAL:

Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with FS SS-S-118 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC' as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any).

Mounting Method for Measuring NRC: No. 7 (mechanically mounted on special metal support), FS SS-S-118; or Type E-400 mounting as per ASTM E 795.

Sound Attenuation Performance: Provide acoustical ceiling units with ratings for ceiling sound transmission class (STC) of range indicated as determined according to AMA 1-II "Ceiling Sound Transmission Test by Two-Room Method" with ceilings continuous at partitions and supported by a metal suspension system of type appropriate for ceiling unit of configuration indicated (concealed for tile, exposed for panels).

Colors, Textures, and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

ACOUSTICAL PANELS:

Mineral Composition Panels -
Nodulated, Cast or Molded; with Standard Washable Painted Finish:

U.K. ROBOTICS FACILITY

File No. 431.0

Provide Type III, Form 1 units per FS SS-S-118 and complying with the following requirements:

Fissured Pattern: (Type B) Manufacturer's standard fissured design; other panel characteristics as follows:

Celotex - Celotone, Natural Fissured, Reveal Edge, White.

Textured Heavy Pattern: (Type A), Manufacturer's standard heavy textured design; other panel characteristics as follows:

Celotex - Celotone, Texture Tone, Reveal Edge, White.

Products: Verify that new acoustical products will match existing, adjacent panels at each space schedule.

METAL SUSPENSION SYSTEMS, GENERAL:

Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.

Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.

Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete forms and for embedment in concrete, with holes or loops for attachment at hanger wires.

Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1 coating, sized so that stress at 3-times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12 gage.

U.K. ROBOTICS FACILITY

File No. 431.0

Edge Moldings and Trim: Metal or extruded plastic of types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated.

For lay-in panels with reveal edge details, provide stepped edge molding which forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.

For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

EXPOSED METAL DIRECT-HUNG SUSPENSION SYSTEMS:

Non-Fire-Resistance-Rated Double Web Steel Suspension System: Manufacturer's standard system roll-formed from prefinished cold-rolled steel sheet with 15/16" wide exposed faces on structural members; other characteristics as follows:

Structural Classification: Intermediate-Duty System.

Finish: Painted, match color of acoustical unit.

Manufacturers: Subject to compliance with requirements, provide products of one of the following:

Manufacturers of Non-Fire-Resistance-Rated Double Web Steel Suspension Systems:

Chicago Metallic Corporation.

Donn Corporation.

Eastern Products Div., Armstrong World Industries, Inc.

National Rolling Mills, Inc.

MISCELLANEOUS MATERIALS:

Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of concealed construction joints.

Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

BA-98; Pecora Corp.

Tremco Acoustical Sealant; Tremco.

PART 3 - EXECUTION

U.K. ROBOTICS FACILITY

File No. 431.0

PREPARATION:

Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

INSTALLATION:

General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and CISCA standards applicable to work.

Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

Install tile with pattern running in one direction.

Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, countersplaying or other equally effective means.

Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

U.K. ROBOTICS FACILITY

File No. 431.0

Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.

Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

Install acoustical tile in coordination with suspension system. Place splines or flanges of suspension system into kerfed edges, or insert tile tongues into tile grooves, so that every tile-to-tile joint is closed by double lap of material.

Fit adjoining tile to form flush, tight joints. Scribe and cut for accurate fit at borders and around penetrating work.

Hold tile field in compression by inserting leaf-type spring steel spacers between tile and moldings, spaced at 12" o.c.

Fabricate access units for special suspension system access members and tile units modified as required to allow for removal of access units.

Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

CLEANING:

Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09510

U.K. ROBOTICS FACILITY

File No. 431.0

SECTION 09900 - PAINTINGPART 1 - GENERALRELATED DOCUMENTS:

Drawings and general provisions of the Contract apply to work of this section.

DESCRIPTION OF WORK:

Extent of painting work is indicated on drawings and schedules, and as herein specified.

Work includes painting and finishing of interior exposed items and surfaces except as otherwise indicated.

Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

Work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.

"Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

Colors: Match existing color of adjacent walls.

Following categories of work are not included as part of field-applied finish work.

Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) acoustic materials, architectural woodwork and casework and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.

Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas.

U.K. ROBOTICS FACILITY

File No. 431.0

Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

QUALITY ASSURANCE:

Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

DELIVERY AND STORAGE:

Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

- Name or title of material.
- Fed. Spec. number, if applicable.
- Manufacturer's stock number and date of manufacture.
- Manufacturer's name.
- Contents by volume, for major pigment and vehicle constituents.
- Thinning instructions.
- Application instructions.
- Color name and number.

Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

U.K. ROBOTICS FACILITY

File No. 431.0

PART 2 - PRODUCTSACCEPTABLE MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide products of one of the following:

Devoe and Reynolds Co. (Devoe).
Glidden Coatings and Resins, Division of SCM Corporation
(Glidden).
Pratt and Lambert (P & L).
The Sherwin-Williams Company (S-W).

MATERIALS:

Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

Proprietary names used to designate color or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

Lead content in pigment, if any, is limited to contain not more than 0.06% lead, as lead metal based on the total non-volatile (dry-film) of paint by weight.

This limitation is extended to interior surfaces which are readily accessible to children under seven years of age.

PART 3 - EXECUTIONINSPECTION:

Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

SURFACE PREPARATION:

General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

Cementitious Materials: Prepare cementitious surfaces of concrete or concrete block, to be painted by removing efflorescence, chalk, dust, dirt, grease and oils.

Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

MATERIALS PREPARATION:

Mix and prepare painting materials in accordance with manufacturer's directions.

U.K. ROBOTICS FACILITY

File No. 431.0

Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

APPLICATION:

General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

Paint colors, surface treatments, and finishes, are to match existing.

Provide finish coats which are compatible with prime paints used.

Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

Sand lightly between each succeeding enamel or varnish coat.

Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate

U.K. ROBOTICS FACILITY

File No. 431.0

thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed to mechanical equipment rooms and in occupied spaces.

Mechanical items to be painted include, but are not limited to, the following:

Piping, pipe hangers, and supports.

Accessory items.

Electrical items to be painted include, but are not limited to, the following:

Conduit and fittings.

Switchgear.

Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

Transparent (Clear) Finish: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

Provide satin finish for final coats, unless otherwise indicated.

CLEAN-UP AND PROTECTION:

Clean-Up: During progress of work, remove from site discarded

U.K. ROBOTICS FACILITY

File No. 431.0

paint materials, rubbish, cans and rags at end of each work day.

Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

INTERIOR PAINT SCHEDULE:

General: Provide the following paint systems for the various substrates, as indicated.

Concrete: (Other than concrete masonry units).

Semi-Gloss Enamel Finish: 3 Coats with total dry film thickness not less than 3.5 mils.

First Coat: Interior Flat Latex Base Paint (FS TT-P-29).

Devoe:	36XX Wonder-Tones Latex Flat Wall Paint.
Glidden:	Y-4019 Ultra-Hide PVA Primer Sealer.
Moore:	Moore's Latex Quick-Dry Prime Seal.
P & L:	Pro-Hide Plus Latex Flat.
S-W:	S-W Wall and Wood Primer.

Second Coat: Interior Enamel Undercoat (FS TT-E-543).

Devoe:	8801 Velour Alkyd Enamel Undercoat.
Moore:	Moore's Alkyd Enamel Underbody.
Pittsburgh:	6-6 Speedhide Quick-Drying Enamel Undercoater.
P & L:	Pro-Hide Plus Latex Flat.
S-W:	S-W Wall and Wood Primer.

Third Coat: Odorless Interior Semi-Gloss Alkyd Enamel (FS TT-E-509).

Devoe:	26XX Velour Alkyd Semi-Gloss Enamel.
--------	--------------------------------------

U.K. ROBOTICS FACILITY

File No. 431.0

Glidden: Y-4600 Line Spred Lustre Semi-Gloss Enamel.
 Moore: Moore's Satin Impervo Enamel.
 Pittsburgh: 27-109 Wall-Hide Semi-Gloss Enamel.
 P & L: Pro-Hide Plus Alkyd Semi-Gloss.
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel.

Concrete Masonry Units:

Semi-Gloss Alkyd Enamel Finish: 2 Coats over filled surface with total dry film thickness not less than 3.5 mils, excluding filler coat.

Filler Coat: Solvent-Thinned Block Filler (FS TT-F-1098). Apply filler coat at a rate to ensure complete coverage with pores filled.

Devco: 52901 Bloxfil Acrylic Flat Latex Block Filler.
 Glidden: Y-5317 Line Ultra-Hide Acrylic Block Filler.
 Moore: Moore's Waterproofing Masonry Paint.
 S-W: S-W Pro-Mar Block Filler.

First Coat: Enamel Undercoater (FS TT-E-543).

Devco: 8801 Velour Alkyd Enamel Undercoat.
 Glidden: Y-5019 - PVA Primer.
 Moore: Moore's Alkyd Enamel Underbody.
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel.

Second Coat: Odorless Interior Alkyd Semi-Gloss Enamel (9FS TT-E-509).

Devco: 26XX Velour Alkyd Semi-Gloss Enamel.
 Glidden: Y-4600 Line - Spred Lustre.
 Moore: Moore's Satin Impervo Enamel.
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel.

Gypsum Drywall Systems:

Odorless Semi-Gloss Alkyd Enamel Finish: 3 coats with total dry film thickness not less than 2.5 mils.

First Coat: Interior Latex Base Primer Coat (FS TT-P-650).

Devco: 50801 Wonder-Tones Latex Primer and Sealer.
 Glidden: Y-3416 Spred Primer Sealer.
 Moore: Moore's Latex Quick-Dry Prime Seal.
 Pittsburgh: 6-2 PPG Quick-Drying Interior Latex Primer Sealer.
 P & L: Pro-Hide Plus Latex Primer.
 S-W: S-W Pro-Mar Latex Wall Primer.

U.K. ROBOTICS FACILITY

File No. 431.0

Second and Third Coats: Odorless Interior Semi-Gloss Alkyd Enamel (FS TT-E-509).

Devoe: 26XX Velour Alkyd Semi-Gloss Enamel.
 Glidden: Y-4600 Line - Spred Lustre Semi-Gloss.
 Moore: Moore's Satin Impervo Enamel.
 Pittsburgh: 27-109 Wall-Hide Semi-Gloss Enamel.
 P & L: Pro-Hide Plus Alkyd Semi-Gloss.
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel.

Lusterless (Flat) Finish: 2 Finish Coats over primer, with total dry film thickness not less than 2.5 mils.

Prime Coat: Red Lead Base Primer (FS TT-P-86). Prime coat is not required on items delivered shop primed.

Devoe: 41821 Bar Ox Red Lead Metal Primer.
 Glidden: Y-5532 - Glid-Guard Red Lead Metal Primer.
 Moore: Iron-Clad Retardo Rust Inhibitive Paint.
 Pittsburgh: U610424 Speedhide Red Lead Primer.
 P & L: P & L Red Lead Primer.
 S-W: S-W Kromik Metal Primer.

First and Second Finish Coats: Interior Flat Latex Base Paint (FS TT-P-29).

Devoe: 36XX Wonder-Tones Interior Latex Flat Wall Paint.
 Glidden: Y-3400 Line-Spred Satin.
 Moore: Moore's Regal Wall Satin.
 Pittsburgh: 6-70 Speedhide Latex Flat Wall Paint.
 P & L: Pro-Hide Plus Latex Flat Paint.
 S-W: S-W Pro-Mar 400 Latex Wall Paint.

Ferrous Metal:

Full Gloss Enamel Finish: 2 Coats over primer with total dry film thickness not less than 2.5 mils.

Prime Coat: Red Lead Base Primer (FS TT-P-86). Prime coat is not required on items delivered shop primed.

Devoe: 41821 Bar-Ox Red Lead Metal Primer.
 Glidden: Y-5532 - Glid-Guard Red Lead Metal Primer.
 Moore: Iron-Clad Retardo Rust Inhibitive Paint.
 Pittsburgh: U610424 Speedhide Red Lead Primer.
 P & L: P & L Red Lead Primer.
 S-W: S-W Kromik Metal Primer.

First Coat: Interior Enamel Undercoat (FS TT-E-543).

U.K. ROBOTICS FACILITY

File No. 431.0

First Coat: Interior Enamel Undercoat (FS TT-E-543).

Devoe: 8801 Velour Alkyd Enamel Undercoat.
 Glidden: Y-4500 Line - Glid-Guard Alkyd Enamel.
 Moore: Moore's Alkyd Enamel Underbody.
 Pittsburgh: 6-6 Speedhide Quick-Drying Enamel
 Undercoater.
 P & L: Interior Trim Primer.
 S-W: S-W Industrial Enamel.

Third Coat: Alkyd Gloss Enamel (FS TT-P-506).

Devoe: 70XX Velour Alkyd Gloss Enamel.
 Glidden: Y-4500 Line - Glid-Guard Alkyd Enamel.
 Moore: Moore's Impervo High Gloss Enamel.
 Pittsburgh: 6-274 Speedhide Alkyd Gloss Enamel.
 P & L: Effecto Enamel.
 S-W: S-W Industrial Enamel.

Zinc-Coated Metal:

Full Gloss Enamel Finish: 2 Coats over primer with total dry film thickness not less than 2.5 mils.

Prime Coat: Zinc Dust - Zinc Oxide Primer Coating (FS TT_P-641).

Devoe: 14100 Zinc Dust Primer.
 Glidden: Y-5229- Glid-GuardAllPurposeMetal
 Primer.
 Moore: Iron-Clad Galvanized Metal Primer.
 Pittsburgh: 6-215/6-216 Speedhide Galvanized Steel Paint
 Zinc Dust.
 S-W: S-W Galvanized Iron Primer.

Second Coat: Interior Enamel Undercoat (FS TT-E-543).

Devoe: 70XX Mirrolac Alkyd Gloss Enamel.
 Glidden: Y-4500 Line - Glid-Guard Alkyd Enamel.
 Moore: Moore's Alkyd Enamel Underbody.
 Pittsburgh: 6-6 Speedhide Quick-Drying Enamel
 Undercoater.
 S-W: S-W Industrial Enamel.

Third Coat: Alkyd Gloss Enamel (FS TT-P-506).

Devoe: 70XX Velour Alkyd Gloss Enamel.
 Glidden: Y-4500 Line - Glid-Guard Alkyd Enamel.
 Moore: Moore's Impervo High Gloss Enamel.
 Pittsburgh: 6-274 Speedhide Alkyd Gloss Enamel.
 S-W: S-W Industrial Enamel.

U.K. ROBOTICS FACILITY

File No. 431.0

Stained Woodwork:

Stained - Varnish Rubbed Finish: 3 Finish Coats over stain plus filler on open grain wood.

Stain Coat: Interior Oil Stain (FS TT-S-711).

Devoe: 96XX Wonder Woodstain Alkyd Stain.
 Glidden: Y-210 Line - Ultra-Hide Interior Stain.
 Moore: Benwood Interior Stain.
 Pittsburgh: 77-310 Rez Medium Tint Base.
 P & L: S-Series Tonetic Wood Stain.
 S-W: S-W Oil Stain.

First Coat: Bleached Shellac (FS TT-S-300).

Devoe: 4900 Wonder Woodsealer Quick-Dry Sealer.
 Moore: Moore's Benwood Quick-Dry Sanding Sealer.
 S-W: S-W Pro-Mar Varnish Sanding Sealer.

Filler Coat on Open Grain Wood: Paste Wood Filler (FS TT-F-336). Wipe before first varnish coat.

Devoe: 4800 Wonder Woodstain Interior Paste Wood Filler.
 Glidden: Y-700 Line - Paste Wood Filler.
 Moore: Moore's Benwood Paste Wood Filler.
 S-W: S-W Sher-Wood Fast-Dry Filler.

Second and Third Coats: Oil Rubbing Varnish (FS TT-V-86).

Devoe: 4600 Wonder Wood Satin Alkyd Satin Varnish.
 Glidden: Y-10 Satin Spread Polyurethane Varnish.
 Moore: Moore's Benwood Satin Finish Varnish.
 Pittsburgh: 77-7 Rez Satin Varnish.
 P & L: 61 Clean Finish Varnish.
 S-W: S-W Oil Base Varnish, Gloss.

Natural Finish Woodwork:

Rubbed Varnish Finish: 2 Finish coats over shellac plus filler on open grain wood.

First Coat: Bleached Shellac (FS TT-S-300).

Devoe: 4900 Wonder Woodsealer Quick-Dry Sealer.
 Moore: Moore's Benwood Quick-Dry Sanding Sealer.
 S-W: S-W Pro-Mar Varnish Sanding Sealer.

Filler Coat on Open Grain Wood: Paste Wood Filler (FS TT-F-336). Wipe before first varnish coat.

U.K. ROBOTICS FACILITY

File No. 431.0

Devoe: 4800 Wonder Woodstain Interior Paste Wood Filler.

Moore: Moore's Benwood Paste Wood Filler.

S-W: S-W Sher-Wood Fast-Dry Filler.

Second and Third Coats: Oil Rubbing Varnish (FS TT-V-86).

Devoe: 4600 Wonder Wood Satin Alkyd Satin Varnish.

Moore: Moore's Benwood Stain Finish Varnish.

S-W: S-W Oil Base Varnish, Gloss.

END OF SECTION 09900

MECHANICAL GENERAL PROVISIONS

THE CONDITIONS OF THE CONTRACT AND DIVISION 1 - GENERAL
REQUIREMENTS are hereby made a part of this Section.

1.00 EXPLANATION AND PRECEDENCE OF DRAWINGS

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division 1 Specification sections apply to work of this section.

- 1.02 Drawings indicate required size and points of termination of ducts and equipment and suggest proper routes to conform to structure, avoid obstructions and preserve clearances. It is not intended that drawings indicate all necessary offsets, therefore provide offsets as required to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear without future instructions or cost to the Owner.

2.00 COORDINATION DRAWINGS

- 2.01 Prepare coordination drawings and coordinate with other Contractors as called for. The Drawings shall be a composite of all mechanical and electrical trades and shall include the following:
- a. Sheet metal layout (ductwork) diffusers, registers, grilles, supply air boots, all dampers, and accessories.
 - b. Piping layout, equipment, valves, service pipes, and accessories.
 - c. Lighting layout.
 - d. Reflected ceiling plan showing all access panels.
 - e. Sections and details as required to show location of all material and equipment in walls, floors, ceiling and equipment rooms.
- 2.02 After initial drawing is prepared showing the HVAC System in detail (as noted in 1.01 above), make a separate sepia tracing to forward to each of the other trades involved for them to record the planned location of their work.

- 2.03 Upon return of the drawings from the other trades, prepare a final coordination set of drawings for distribution to the other trades and the Architect/Engineer.
- 2.04 Maintain one complete set of coordination drawings at the project for the purposes noted under RECORD DRAWINGS.

3.00 PROTECTION

- 3.01 Protect finished floors.
- 3.02 Protect equipment and finished surfaces.
- 3.03 Store all motors, fans, and other equipment scheduled to be installed in later phases of construction. Place stock piled items on dunnage and protect from weather and entry of foreign material. restrict storage of items to project, prior to installation, to a minimum of time.

4.00 PROVISIONS FOR LATER INSTALLATIONS

- 4.01 Where work cannot be installed as the structure is being erected, install boxes, sleeves, inserts, fixtures or devices as necessary to permit installation of the omitted work during later phases of construction.
- 4.02 Cooperate with other trades and accurately locate position of sleeves, boxes, and other required openings. Set all such items true to line, grade, position, and plumb or level, and so maintain during construction. Inspect sleeves while and after concrete is poured, and correct any deviation from proper position before the concrete sets.

5.00 EQUIPMENT AND MATERIALS SUBSTITUTIONS OR DEVIATIONS

- 5.01 Should the Contractor request approval of substitute materials and/or equipment, it shall be understood and agreed that such substitution, if approved, will be made without additional cost regardless of changes in connections, spacing, electrical service, etc. In all cases where substitutions shall advise all such Contractors of the change and shall remunerate them for all necessary changes in their work. Any drawings, specifications, and diagrams required to describe and coordinate such substitutions or deviations shall be professionally prepared at the responsible Contractor's expense.

SPECIAL NOTE: Approval of Shop Drawings by the Engineers does not absolve the Contractor of this responsibility.

- 5.02 Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make or catalog number, such reference shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. devices, products, materials, fixtures, forms, or types of construction which in the judgment of the Owner's Representative are equivalent to those specified, provided the provisions of paragraph (A) immediately preceding are met, may be acceptable.
- 5.03 Each Contractor shall furnish along with his proposal a list of specified equipment and materials which he proposes to provide. Where several makes are mentioned in the specifications and the contractor fails to state which he proposes to furnish, the Owner's Representative shall have the right to choose any of the makes mentioned without change in price. Inclusion in this list shall not ensure that the Engineers will approve shop drawings unless the equipment, materials, etc. submitted in shop drawings is comparable to the items specified and/or indicated.

6.00 CUTTING AND PATCHING

- 6.01 Except as specifically noted otherwise, do all cutting and patching as required for the installation of work.
- 6.02 Hold cutting of work in place to absolute minimum by installation of sleeves solidly with compatible materials.
- 6.03 All patching of or repair of work in place shall be done in a neat and workmanlike manner. if operations require cutting of work in place or if work in place is damaged by the operations herein, the installer shall employ mechanics of the particular trade whose work must be cut or which is damaged, and shall pay all costs of such patching or repair.

7.00 LUBRICATION AND PACKING

- 7.01 Lubricate all rotating and reciprocating equipment requiring lubrication with the correct grade, type and quantity of lubricant before the equipment is placed in service.
- 7.02 Each shaft containing gland shall be checked for condition by backing the packing gland off and examined for proper grade, amount and type of packing as recommended by the manufacturer.

7.03 Maintain all lubrication gaskets and packing during construction, and assure that at the time of acceptance by the Owner, all are in first class operating condition.

8.00 EQUIPMENT INSTALLATION AND ACCESS

8.01 Installer shall follow equipment manufacturer's instructions in the setting and start-up procedure for all equipment installed in this work.

8.02 Install equipment to facilitate routine maintenance and observation. Contractor may be required to demonstrate accessibility.

9.00 CLEANING: PAINTING

9.01 Remove temporary bracing; scrap metal, construction dirt and other debris from inside and outside of duct systems, fans, plenums, coils, air handling units, etc., prior to application of any painting or insulation.

9.02 Clean surfaces to remove all dirt, oil, grease, dust, scale and foreign matter before applying coating.

9.03 Touch-up damaged factory finish paint with equal quality finish paint.

10.00 INSTRUCTIONS

10.1 At the completion of the installation, after all testing and adjusting, painting, identifications, signs, etc., work is finished, thoroughly instruct Owner's personnel on the operation and maintenance of the system.

11.00 GUARANTEE AND WARRANTY

Contractor shall guarantee that labor, equipment and materials will be free of defects for a period of one year from the date of substantial completion. Prior to final payment contractor shall assemble and present to the Owner all guarantees and warranties.

12.00 INTERRUPTION OF UTILITIES

Interruption of utility services to existing facilities shall be held to a minimum, and shall be scheduled to coincide with the Owner's operations in accordance with the General Requirements. In all cases, the Owner shall be notified well in advance of an anticipated interruption of utilities.

13.00 DISPOSABLE ITEMS

Furnish one complete set of spare elements for disposable items such as air filters. Spare elements shall be furnished for each air handling unit.

END OF SECTION

SECTION 15100

VALVES

PART 1 GENERAL

1.01 RELATED DOCUMENT

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specifications sections apply to work of this section.

1.02 WORK INCLUDED

- A. Gate valves.
- B. Globe or angle valves.
- C. Check valves.
- D. Drain valves.
- E. Hose bibbs.

1.03 SUBMITTALS

- A. Submit copies of valve ordering schedule for approval before ordering valves.
- B. Submit detailed shop drawings. Clearly indicate make, model, location, type, size and pressure rating.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Powell
- B. Crane
- C. Lunkenheimer

2.02 VALVE CONNECTIONS

- A. Provide valves suitable to connect to adjoining piping as specified for pipe joints. Use pipe size valves.
- B. Thread or solder pipe sizes 2 inches and smaller.
- C. Screw to solder adaptors for copper tubing, where required.

2.03 GATE VALVES

- A. Bronze, rising stem, inside screw, double wedge or disc, solder or screwed ends.

2.04 GLOBE OR ANGLE VALVES

- A. Bronze, rising stem, inside screw, renewable composition disc, solder or screwed ends, 2 inch and smaller.

2.05 CHECK VALVES

- A. Bronze, swing disc, solder or screwed ends.

2.06 DRAIN VALVES

- A. Bronze compression stop with nipple and cap or hose thread.

2.07 HOSE BIBBS

- A. Bronze or red brass, replaceable hexagonal disc, hose thread spout, integral vacuum breaker.

2.08 PRESSURE RATINGS

- A. Use valves suitable for 250 minimum psi WSP and 100 degrees F.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install gate valves for shut-off and isolating service, to isolate equipment, part of systems, or vertical risers.
- C. Install globe or angle valves for throttling service and where indicated.
- D. Provide drain valves at main shut-off valves, and low points of piping and apparatus, and where indicated.

END OF SECTION

SECTION 15190

MECHANICAL IDENTIFICATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Identification of mechanical products and piping installed under Division 15.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light contrasting background color.
- B. Stencils: With clean cut symbols and letters of following size:

<u>OUTSIDE DIAMETER OF INSULATION OR PIPE</u>	<u>LENGTH OF COLOR FIELD</u>	<u>SIZE OF LETTERS</u>
3/4" - 1-1/4	8"	1/2"
1-1/2" - 2"	8"	3/4"
Ductwork and Equipment	---	2-1/2"

- C. Stencil Paint: Sherwin-Williams Kem Lustral.
- D. Paint: Sherwin-Williams Kem Lustral of the colors and numbers enumerated, or equivalent manufacturer with matching color and shade.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prepare surfaces of painting.

3.02 INSTALLATION

- A. Plastic Nameplates: Install with corrosive-resistant mechanical fasteners, or adhesive. Identify air handling units, pumps, and heat transfer equipment with plastic nameplates.

- B. Controls: Identify control panels and major control components outside panels with plastic nameplates. Use nomenclature which corresponds to nomenclature used on approved shop drawings.
- C. Piping: Identify piping, concealed or exposed, with stenciled painting. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and "T", at each side of penetration of structure or enclosure, and at each obstruction.

In addition to stencils on piping, all exposed piping to be painted with the following color code. Stencils to be in accordance with the following schedule:

<u>Service</u>	<u>Marking</u>	<u>Color</u>	<u>Sherman Williams No.</u>
Domestic Cold Water	DCW	Medium	F65G40
Glycol Solutions	GLYCOL	Turquoise	F65L6

END OF SECTION

PIPING INSULATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Piping insulation.
- B. Jackets and accessories.

1.03 SUBMITTALS

- A. Submit product data under provisions of the General Conditions.
- B. Include product description, list of materials and thickness for each service, and locations and manufacturer's installation instructions.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Certainteed Corporation.
- B. Knauf.
- C. Owens-Corning.

2.02 INSULATION

- A. Type A: Glass fiber insulation; ANSI/ASTM C547; 'k' value of 0.24 at 75 degrees F; noncombustible.

2.03 JACKETS

- A. Interior Applications:
 - 1. Vapor Barrier Jackets: Kraft reinforced foil vapor barrier with self-sealing adhesive joints.
 - 2. Canvas Jackets: UL listed treated cotton fabric, 6 oz/sq yd.

B. Exterior Applications:

150

1. Stainless Steel Jackets: Type 304 stainless steel; 0.010 inch thick; smooth finish.

2.04 ACCESSORIES

- A. Insulation Bands: 3/4 inch wide; 0.015 inch thick stainless steel.
- B. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick stainless steel.
- C. Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.
- D. Finishing Cement: ASTM C449.
- E. Fibrous Glass Cloth: Untreated; 9 oz/sq yd weight.
- F. Adhesives: Compatible with insulation.

PART 3 EXECUTION

3.01 PREPARATION

- A. Install materials after piping has been tested and approved.

3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Continue insulation with vapor barrier through penetrations.
- C. In exposed piping, locate insulation and cover seams in least visible locations.
- D. Insulate fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
- E. Provide an insert, no less than 6 inches long, of same thickness and contour as adjoining insulation, between support shield and piping, but under the finish jacket, on piping 2 inches diameter or larger, to prevent insulation from sagging at support points. Inserts shall be cork or other heavy density insulating material suitable for the planned temperature range. Factory fabricated inserts may be used.
- F. Neatly finish insulation at supports, protrusions, and interruptions.

G. Jackets:

1. Indoor, Concealed Applications: Insulated pipes conveying fluids below ambient temperature shall have vapor barrier jackets, factory-applied or field-applied. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe, and finish with glass cloth and vapor barrier adhesive.
2. Indoor, Exposed Applications: For pipe exposed in mechanical equipment rooms or in finished spaces, insulate as for concealed applications. Finish with canvas jacket; size for finish painting. Do not use PVC jackets.
3. Exterior Applications: Provide vapor barrier jackets. Cover with stainless steel jacket with seams located on bottom side of horizontal piping. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement.

3.03 SCHEDULE

<u>SERVICE</u>	<u>TYPE</u>	<u>Inch Thickness for Listed Pipe Diameter</u>					
		<u>1</u>	<u>1.5</u>	<u>2</u>	<u>4</u>	<u>6</u>	<u>8</u>
Domestic Water	A	.5	1	1	1	1	1
Glycol	A	.5	1	1	1	1	1
Cold Condensate Drains	A	.5	.5	.5	.5	.5	.5

END OF SECTION

DUCTWORK INSULATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Divisions-1 specification sections apply to work of this section.

1.02 WORK INCLUDED

A. Ductwork insulation.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Certainteed Corp.

B. Knauf

C. Owens-Corning

2.02 MATERIALS

A. Type A: Flexible glass fiber; ANSI/ASTM C612; commercial grade; 'k' value of 0.29 at 75 degrees F; 0.002 inch foil scrim facing for air conditioning ducts.

B. Type B: Rigid glass fiber; ANSI/ASTM C612, Class 1; 'k' value of 0.24 at 75 degrees F; 0.002 inch foil scrim facing for air conditioning ducts.

C. Adhesives: Waterproof fire-retardant type.

D. Finish: Exposed insulated ductwork to have field applied canvas jacket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide insulation with vapor barrier.

3.02 SCHEDULE

<u>DUCTWORK</u>	<u>INSULATION TYPE</u>	<u>THICKNESS</u>
Exposed supply and return Plenums (Cooling System), except factory fabricated insulated housings	B	1 inch
Supply and Return Ducts	A	1 inch

END OF SECTION

HYDRONIC PIPING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Divisions-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Pipe and pipe fittings.
- B. Glycol piping system.

PART 2 PRODUCTS

2.01 GLYCOL PIPING

- A. Copper Tubing: ASTM B88, Type L, K, hard drawn.
 - 1. Fittings: ANSI/ASME B16.23 cast brass or ANSI/ASME B16.29 solder wrought copper.
 - 2. Joints: ASTM B32, solder, Grade 95TA.

2.02 EQUIPMENT DRAINS AND OVERFLOWS

- A. Copper Tube: ASTM B88 Type L, K, hard drawn, with wrought copper solder fittings and Grade 95TA solder joints.

2.03 TEMPERATURE GAUGES

Direct mount, 3-1/2 inch, adjustable angle dial type with six inch stem and bronze well, Marshalltown, Trerice or Ashcroft. Install where temperature gauges are required as shown on the drawings.

2.04 PRESSURE GAUGES

Direct mount, 4-1/2 inch dial, phenolic case, with pulsation dampener and blunt bar stock needle valve, Marshalltown, Trerice or Ashcroft. Install where pressure gauges are required as shown on the drawings.

2.05 GLYCOL SYSTEM

- A. Provide 55 gallon steel drum with fittings suitable for filling. Provide hand pump for charging and rubber hose for connection of hand pump to system.

- B. Glycol Solution to be inhibited ethylene glycol and water solution with 40 percent by weight of glycol suitable for ambient temperature of minus 15 degree F.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with unions.
- D. After completion, fill, clean, and treat systems.

3.02 INSTALLATION

- A. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.
- B. Install piping to conserve building space, and not interfere with use of space and other work.
- C. Group piping whenever practical at common elevations.
- D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- E. Provide clearance for installation of insulation, and access to valves and fittings.
- F. Provide access where valves and fittings are not exposed.
- G. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- H. Provide pipe supports, sized to fit outside insulation and spaced in accordance with ANSI B31.1, Power Piping.
- I. Install valves with stems upright or horizontal, not inverted.

END OF SECTION

SECTION 15515

HYDRONIC SPECIALTIES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Air vents.
- B. Strainers.
- C. Relief valves.

1.02 SUBMITTALS

- A. Submit shop drawings and product data under provisions of the General Conditions.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - AIR VENTS

- A. Hoffman.
- B. Bell & Gossett.
- C. Taco.

2.02 AIR VENTS

- A. Washer Type: Brass with hydroscopic fiber discs, vent ports, adjustable cap for manual shut-off, and integral spring loaded ball check valve.

2.03 ACCEPTABLE MANUFACTURERS - STRAINERS

- A. Mueller.
- B. Powell.
- C. Crane.

2.04 STRAINERS

- A. Size 2 inch and Under: Screwed brass or iron body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.

2.05 ACCEPTABLE MANUFACTURERS - RELIEF VALVES

- A. A. W. Cash.
- B. Ferris.
- C. Kunkle.

2.06 RELIEF VALVES

- A. Bronze body, screwed inlet and outlet, silicone disk seat, and stainless steel spring. Setpoint 125 psig.

PART 3 EXECUTION

3.01 INSTALLATION AND APPLICATION

- A. Install specialties in accordance with manufacturer's instructions to permit intended performance.
- B. Where large air quantities can accumulate, provide enlarged air collection standpipes.
- C. Provide air vents at system high points and as indicated.
- D. Provide valved drain and hose connections on strainer blow down connection.
- E. Provide relief valve on glycol system.
- F. Pipe relief valve outlet to nearest drain.

END OF SECTION

DUCTWORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification section apply to work of this section.

1.02 WORK INCLUDED

A. Low pressure ducts.

1.03 REFERENCES

- A. ASTM A 90 - Weight of Coating on Zinc-Coated (Galvanized Iron or Steel Articles).
- B. ASTM A 525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- C. ASTM A 527 - Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Lock Forming Quality.
- D. NFPA 90A - Installation of Air Conditioning and Ventilating System.
- E. SMACNA - HVAC Duct Construction Standards - Metal and Flexible Construction Standards.
- F. UL 181 - Factory-Made Air Ducts and Connectors.

1.04 DEFINITIONS

- A. Duct Sizes: Inside clear dimensions.
- B. Pressure - Velocity Classification: 1 inch WG positive or negative static pressure and velocities less than 2,500 fpm.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Non-combustible conforming to requirements for Class 1 air duct materials.
- B. Steel Ducts: ASTM A 525 galvanized steel sheet, lock-forming quality, having zinc coating of 1.25 oz per sq ft for each side in conformance with ASTM A 90.

- C. Insulated Flexible Ducts: Flexible duct wrapped with flexible glass fiber insulation, enclosed by seamless aluminum pigmented plastic vapor barrier jacket; maximum 0.23 K value at 75 degrees F.
- D. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.
- E. Hanger Rod: Steel, galvanized, threaded both ends, threaded one end, or continuously threaded.

2.02 DUCTWORK

- A. Fabricate and support in accordance with SMACNA HVAC Metal Duct Construction Standards and ASHRAE handbooks, except as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- B. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.
- C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide air foil turning vanes.
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.
- E. Connect flexible ducts to metal ducts with draw bands.
- F. Use double nuts and lock washers on threaded rod supports.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install ductwork in accordance with Section IV of the SMACNA HVAC Duct Construction Standards for Metal and Flexible Ducts except for F16.4-2 Upper Attachment Devices use only expansion shields for concrete anchors.

END OF SECTION

DUCTWORK ACCESSORIES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Volume control dampers.
- B. Air turning devices.
- C. Flexible duct connections.
- D. Duct access doors.
- E. Duct test holes.

1.03 SUBMITTALS

- A. Submit shop drawings and product data under provisions of the General Conditions.
- B. Provide shop drawings for shop fabricated assemblies indicated, including volume control dampers duct access doors duct test holes. Provide product data for hardware used.
- C. Submit manufacturer's installation instructions for fire dampers.

PART 2 PRODUCTS

2.01 VOLUME CONTROL DAMPERS

- A. Fabricate in accordance with SMACNA HVAC Metal Duct Constructions Standards.

2.02 AIR TURNING DEVICES

- A. Multi-blade device with blades aligned in short dimension; steel or aluminum construction; with individually adjustable blades.

2.03 ACCEPTABLE MANUFACTURERS - FLEXIBLE DUCT CONNECTIONS

- A. Durodyne Corp.
- B. Ventfabrics.
- C. Flexaust.

2.04 FLEXIBLE DUCT CONNECTIONS

- A. Fabricate in accordance with SMACNA Low Pressure Duct Construction Standards.

2.05 DUCT ACCESS DOORS

- A. Fabricate in accordance with SMACNA HVAC Metal Duct Construction Standards.
- B. Review locations prior to fabrication.

2.06 DUCT TEST HOLES

- A. Cut or drill temporary test holes in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.
- B. Permanent test holes shall be factory fabricated, air tight flanged fittings with screw cap. Provide extended neck fittings to clear insulation.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install accessories in accordance with manufacturer's instructions.
- B. Provide balancing dampers at points on supply and return system where branches are taken from larger ducts as required for air balancing and as indicated.
- C. Provide duct test holes where indicated and required for testing and balancing purposes.

END OF SECTION

AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental special Conditions and Division-1 Specification sections apply to work of this section.

1.02 WORK INCLUDED

- A. Diffusers.
- B. Diffuser boots.
- C. Registers/grilles.

1.03 SUBMITTALS

- A. Submit product data under provisions of the General Conditions.
- B. Provide product data for items required for this project.
- C. Submit schedule of outlets and inlets indicating type, size, location, application, and noise level.
- D. Review requirements of outlets and inlets as to size, finish, and type of mounting prior to submitting product data and schedules of outlets and inlets.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - CEILING DIFFUSERS

- A. Titus.
- B. Tuttle and Bailey.
- C. Barber Colman.

2.02 RECTANGULAR CEILING DIFFUSERS

- A. Rectangular, adjustable pattern, stamped, multicore type diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated; in accordance with schedules on drawings.
- B. Provide T-bar type frame.
- C. Fabricate of steel with baked enamel off-white finish.

- D. Provide radial opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.03 ACCEPTABLE MANUFACTURERS - CEILING REGISTERS/GRILLES

- A. Titus.
- B. Tuttle & Bailey.
- C. Barber Colman.

2.04 CEILING EXHAUST AND RETURN REGISTERS/GRILLES

- A. Streamlined blades, depth of which exceeds 3/4 inch spacing, with spring or other device to set blades, in accordance with schedules on drawings.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install items in accordance with manufacturers's instruction.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION

STARTUP AND ADJUSTMENT

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section.

1.02 SECTION INCLUDES

- A. Startup and adjustment of systems, including adjustment of owner furnished equipment.
- B. Measurement of final operating condition of HVAC systems.

1.03 WORK NOT INCLUDED

- A. Rebalance of existing air conditioning system.

1.04 SUBMITTALS

- A. Submit documentation that system has been started, charged with glycol and adjusted.
- B. Provide data in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side.

1.05 SEQUENCING AND SCHEDULING

- A. Sequence work to commence after completion of systems and schedule completion of work before Substantial Completion of Project.

PART 2 EXECUTION

2.01 EXAMINATION

- A. Before commencing work, verify that systems are complete and operable. Ensure the following:
 - 1. Equipment is operable and in a safe and normal condition.
 - 2. Temperature control systems are installed complete and operable.
 - 3. Proper thermal overload protection is in place for electrical equipment.

4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
 5. Duct systems are clean of debris.
 6. Correct fan rotation.
 7. Volume dampers are in place and open.
 8. Coil fins have been cleaned and combed.
 9. Access doors are closed and duct end caps are in place.
 10. Air outlets are installed and connected.
 11. Duct system leakage has been minimized.
 12. Hydronic system has been flushed, filled with 40 percent by weight of ethylene glycol and vented.
 13. Correct pump rotation.
 14. Proper strainer baskets are clean and in place.
 15. Service and balance valves are open.
- B. Report any defects or deficiencies noted during performance of services to Architect/Engineer.
- C. Promptly report abnormal conditions in mechanical systems or conditions which prevent system balance.
- D. Beginning of work means acceptance of existing conditions.

2.02 PREPARATION

- A. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Architect/Engineer to facilitate spot checks during testing.

2.03 INSTALLATION TOLERANCE

- A. Adjust air handling systems to plus or minus 5 percent for supply systems and plus or minus 10 percent for return and exhaust systems from figures indicated.
- B. Adjust hydronic systems to plus or minus 10 percent of design conditions indicated.

2.04 ADJUSTING

- A. Recorded data shall represent actually measured, or observed condition.
- B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- D. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- E. Check and adjust systems approximately six months after final acceptance and submit report.

2.05 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.
- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extent that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.
- G. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- H. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.

2.06 WATER SYSTEM PROCEDURE

- A. Adjust water systems to provide required or design quantities.
- B. Use calibrated pressure gages to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.
- C. Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.

END OF SECTION

BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. "Drawings and General Provisions of the Contract, including General, Special and Supplemental Special Conditions and Division-1 Specification sections apply to work of this section."

1.02 WORK DESCRIPTION

- A. Install the following owner-furnished equipment:
1. 4000 ampere switchboard add-on section.
 2. Eight panelboards: PP-1X, PP-2X, PP-3X, PP-4X, PP-5X, PP-6X, PP-7X and PP-8x.
 3. Dry type 112.5 KVA transformer.
 4. 50 KVA Uninterruptable power supply and battery
- B. Provide feeders to electrical equipment and branch circuits to indicated loads. Provide conduit and wiring as specified. Provide telephone and computer wireway in high bay area. Provide lighting, switches and other devices as necessary to accommodate new wall partitions. Provide receptacles and telephone and computer outlets to new and existing walls as indicated.

Provide security system specified including all conduit and wiring.

Provide conduit and wiring to air conditioner and associated roof-top units.

1.03 COORDINATION

- A. Prepare drawings showing proposed rearrangement of work to meet job conditions, including changes to work specified under other sections. Obtain permission of Architect/Engineer before proceeding.

1.04 REFERENCES

- A. ANSI/IEEE C2 - National Electrical Safety Code. (Latest Edition)

B. ANSI/NFPA 70 - National Electrical Code. 1990 Edition **169**

C. NECA - Standard of Installation.

1.05 REGULATORY REQUIREMENTS

A. Conform to ANSI/NFPA 70.

B. Conform to ANSI/IEEE C2.

C. Conform to Kentucky Building Code.

D. Obtain electrical permits from authority having jurisdiction.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and Equipment: Acceptable to the authority having jurisdiction as suitable for the use intended.

PART 3 EXECUTION

3.01 WORKMANSHIP

A. Install Work using procedures defined in NECA Standard of Installation.

END OF SECTION

MINOR ELECTRICAL DEMOLITION FOR REMODELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical relocation of existing equipment.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work:
As specified in individual Sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify field measurements and circuit arrangements are as shown on drawings.
- B. Beginning of relocation means installer accepts existing conditions.

3.02 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction
- B. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.
- D. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.03 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment which are to be reused.

END OF SECTION

CONDUIT

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Rigid metal conduit and fittings.
- B. Intermediate metal conduit and fittings.
- C. Electrical metallic tubing and fittings.
- D. Flexible metal conduit and fittings.
- E. Liquidtight flexible metal conduit and fittings.

1.02 RELATED WORK

- A. Section 01045 - Cutting and Patching
- B. Section 07600 - Sheet Metal Flashing and Trim

1.03 REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc-Coated
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc-Coated
- C. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies
- D. FS WW-C-563 - Electrical Metallic Tubing
- E. FS WW-C-566 - Specification for Flexible Metal Conduit
- F. FS WW-C-581 - Specification for Galvanized Rigid Conduit

PART 2 PRODUCTS

2.01 RIGID METAL CONDUIT AND FITTINGS

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Fittings and Conduit Bodies: Threaded type, material to match conduit.

2.02 INTERMEDIATE METAL CONDUIT (IMC) AND FITTINGS

- A. Conduit: Galvanized steel.

- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; use fittings and conduit bodies specified above for rigid steel conduit.

2.03 ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS

- A. EMT: ANSI C80.3. Galvanized tubing.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel compression type.
- C. Maximum Size: 4" conduit.

2.04 FLEXIBLE METAL CONDUIT AND FITTINGS

- A. Conduit: FS WW-C566; steel.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1.

2.05 LIQUIDTIGHT FLEXIBLE CONDUIT AND FITTINGS

- A. Conduit: Flexible metal conduit with PVC jacket.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1.

2.06 CONDUIT SUPPORTS

- A. Conduit clamps, straps, and supports: Steel or malleable iron.

PART 3 EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

- A. Size conduit for conductor type installed; 3/4 inch minimum size.
- B. Arrange conduit to maintain headroom and present a neat appearance.
- C. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.
- D. Maintain minimum 6 inch clearance between conduit and piping. Maintain 12 inch clearance between conduit and heat sources, such as steam pipes and heating appliances.
- E. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit

using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers.

- F. Group conduit in parallel runs where practical and use conduit rack constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit.
- G. Do not fasten conduit with wire or perforated pipe straps. Remove all wire used for temporary conduit support during construction, before conductors are pulled.

3.02 CONDUIT INSTALLATION

- A. Cut conduit square using a saw or pipecutter; de-burr cut ends.
- B. Bring conduit to the shoulder of fittings and couplings and fasten securely.
- C. Use conduit hubs or sealing locknuts for fastening conduit to cast boxes and for fastening conduit to sheet metal in damp or wet locations.
- D. Install no more than the equivalent of four 90-degree bends between boxes.
- E. Use conduit bodies to make sharp changes in direction, as around beams.
- F. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 2 inch size.
- G. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.
- H. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture.
- I. Provide No. 12 AWG insulated conductor or suitable pull string in empty conduit, except sleeves and nipples.
- J. Where conduit penetrates fire-rated walls and floors, seal opening around conduit with UL listed foamed silicone elastomer compound.
- K. Route conduit through roof openings for piping and ductwork where possible; otherwise, route through roof jack with pitch pocket.

3.03 CONDUIT INSTALLATION SCHEDULE

- A. Installations in or under concrete slab, or underground

- within five feet of foundation wall: Rigid steel conduit.
- B. Exposed outdoor locations: Rigid steel conduit.
 - C. Wet interior locations: Rigid steel conduit.
 - D. Concealed dry interior locations: Rigid steel conduit.
Intermediate metal conduit. Electrical metallic tubing.
 - E. Exposed dry interior locations: Rigid steel conduit.
Intermediate metal conduit. Electrical metallic tubing.

END OF SECTION

SECTION 16112
SURFACE RACEWAYS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Surface metal raceways.

1.02 RELATED WORK

- A. Section 16141 - Wiring Devices: Receptacles.

1.03 SUBMITTALS

- A. Submit product data under provisions for Shop Drawings.
- B. Include product data for surface metal raceways, multi-outlet assemblies, auxiliary gutters, and accessories.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - SURFACE METAL RACEWAYS

- A. Square D
- B. Weigmann

2.02 SURFACE METAL RACEWAY

- A. Surface Metal Raceway - Sheet metal channel with side hinged fitted cover, suitable for use as surface metal raceway; manufactured by Square D.
- B. Size - 4 x 4 inch.
- C. Finish - Gray enamel.
- D. Fittings - Couplings, elbows, and connectors designed for use with raceway system.
- E. Boxes and Extension Rings - Designed for use with raceway systems.

PART 3 EXECUTION

3.01 INSTALLATION - SURFACE METAL RACEWAY

- A. Use flat-head screws to fasten channel to surfaces. Mount plumb and level.

- B. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.
- C. Maintain grounding continuity between raceway components to provide a continuous grounding path.
- D. Fastener Option: Use clips and straps suitable for the purpose.

END OF SECTION

SECTION 16120

WIRE AND CABLE

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Building wire.
- B. Cable.
- C. Wiring connections and terminations.

1.02 REFERENCES

- A. NEMA WC 5 - Thermoplastic-insulated wire and cable for the transmission and distribution of electrical energy

PART 2 PRODUCTS

2.01 BUILDING WIRE

- A. Thermoplastic-insulated building wire: NEMA WC 5.
- B. Feeders and branch circuits larger than 6 AWG: Copper, stranded conductor, 600 volt insulation, THHN/THWN.
- C. Feeders and branch circuits 6 AWG and smaller: Copper conductor, 600 volt insulation, THW, THHN/THWN. AWG 6 and 8 to be stranded conductor; smaller than 8 AWG, solid conductor.
- D. Control circuits: Copper, stranded conductor 600 volt insulation, THW, THHN.

2.02 CABLE

- A. Pre-finished cord set: To be S0 Type 3/C cord, #12 for 20A Circuit and #10 for 30A Circuit.

PART 3 EXECUTION

3.01 GENERAL WIRING METHODS

- A. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring.
- B. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 75 feet.

- C. Splice only in junction or outlet boxes.
- D. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- E. Make Conductor lengths for parallel circuits equal.

3.02 WIRING INSTALLATIONS IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use UL listed wire pulling lubricant for pulling 4 AWG and larger wires.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.

3.03 WIRING CONNECTIONS AND TERMINATIONS

- A. Splice only in accessible junction boxes.
- B. Use solderless pressure connectors with insulating covers for copper wire splices and taps, 8 AWG and smaller.
- C. Use split bolt connectors for copper wire splices and taps, 6 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.
- D. Thoroughly clean wires before installing lugs and connectors.
- E. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.
- F. Terminate spare conductors with electrical tape.

3.04 WIRE AND CABLE INSTALLATION SCHEDULE

- A. Concealed interior locations: Building wire in raceways.
- B. Exposed interior locations: Building wire in raceways.
- C. Above accessible ceilings: Building wire in raceways.
- D. Wet or damp interior locations: Building wire in raceways.

E. Exterior locations: Building wire in raceways.

F. Underground locations: Building wire in raceways.

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Wall and ceiling outlet boxes
- B. Floor boxes
- C. Pull and junction boxes

1.02 RELATED WORK

- A. Section 16141 - Wiring devices: Service fittings and fire-rated poke-through fittings for floor boxes

1.03 REFERENCES

- A. ANSI/NEMA OS 1 - Sheet-steel outlet boxes, device boxes, covers and box supports
- B. ANSI/NEMA OS 2 - Nonmetallic outlet boxes, device boxes, covers and box supports
- C. NEMA 250 - Enclosures for electrical equipment (1000 volts maximum)

PART 2 PRODUCTS

2.01 OUTLET BOXES

- A. Sheet Metal Outlet Boxes - ANSI/NEMA OS 1; galvanized steel, with 1/2 inch male fixture studs where required
- B. Nonmetallic Outlet Boxes - ANSI/NEMA OS 2
- C. Cast Boxes - Case ferrous alloy, deep type, gasketed cover, threaded hubs

2.02 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes - ANSI/NEMA OS 1; galvanized steel

PART 3 EXECUTION

3.01 COORDINATION OF BOX LOCATIONS

- A. Provide electrical boxes as shown on drawings and as required for splices, taps, wire pulling, equipment connections, and code compliance.

- B. Electrical box locations shown on contract drawings are approximate unless dimensioned. Verify location of floor boxes and outlets in offices and work areas prior to rough-in. 181
- C. Locate and install boxes to allow access. Where installation is inaccessible, coordinate locations and sizes of required access doors.
- D. Locate and install to maintain headroom minimum 8'-0" and to present a neat appearance.

3.02 OUTLET BOX INSTALLATION

- A. Do not install boxes back-to-back in walls. Provide minimum 6 inch separation, except provide minimum 24 inch separation in acoustic-rated walls.
- B. Locate boxes in masonry walls to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat openings for boxes.
- C. Provide knockout closures for unused openings.
- D. Support boxes independently of conduit.
- E. Use multiple-gang boxes where more than one device is mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.
- F. Install boxes in walls without damaging wall insulation.
- G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- H. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening.
- I. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes.
- J. Align wall-mounted outlet boxes for switches, thermostats, and similar devices.

3.03 PULL AND JUNCTION BOX INSTALLATION

182

- A. Locate pull boxes and junction boxes above accessible ceilings or in unfinished areas.
- B. Support pull and junction boxes independent of conduit.

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Wall switches
- B. Receptacles
- C. Power Poles
- D. Wall plates
- E. Pushbuttons
- F. Clear Plastic Safety Covers

1.02 REFERENCES

- A. FS W-C-596 - Electrical Power Connector, Plug, Receptacle, and Cable Outlet.
- B. FS W-S-896 - Switch, Toggle.
- C. NEMA WD 1 - General-Purpose Wiring Devices.
- D. NEMA WD 5 - Specific-Purpose Wiring Devices.

1.03 SUBMITTALS

- A. Submit product data and/or shop drawings.
- B. Provide product data showing configurations, finishes, dimensions, and manufacturer's instructions.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - WALL SWITCHES

- A. Hubbell
- B. Bryant
- C. Arrow-Hart

2.02 WALL SWITCHES

- A. Wall Switches for Lighting Circuits - NEMA WD-1, FS W-S-896; AC general use snap switch with toggle handle, rated 20 amperes and 120 volts AC. Handle: plastic.

2.03 ACCEPTABLE MANUFACTURERS - RECEPTACLES

184

- A. Hubbell
- B. Bryant
- C. Arrow-Hart

2.04 RECEPTACLES

- A. Convenience and Straight-blade Receptacles - NEMA WD-1, FS W-C-596.
- B. Locking-Blade Receptacles - NEMA WD 5.
- C. Convenience Receptacle Configuration - NEMA WD-1 or WD-5; type as indicated on drawings, plastic face.
- D. Specific-Use Receptacle Configuration - NEMA WD-1 or WD-5; type as indicated on drawings, plastic face.
- E. GFCI Receptacles - Duplex convenience receptacle with integral ground fault current interrupter.
- F. All receptacles shall be rated 20 ampere minimum unless specified otherwise.

2.05 ACCEPTABLE MANUFACTURERS - POWER POLES

- A. Hubbell - (Cat. # PP-1 or equal)

2.06 POWER POLES

In general, power poles to have divider with provisions for power receptacles and telephone and computer outlets. Receptacles to be duplex, 20 ampere, 125 volt, with ground, type NEMA 5-20 R. Material to be steel painted.

2.07 ACCEPTABLE MANUFACTURERS - WALL PLATES

- A. Unless otherwise specified or noted, all wiring device plates and covers shall be smooth thermoplastic, Hubbell "P" Series or equivalent. Color shall match device.
- B. Cover plates shall be of one manufacture insofar as possible.
- C. Weatherproof plates for G.F.C.I. receptacles shall be cast aluminum, self-closing, gasketed, suitable for standard box mounting, U.L. listed for wet location use, cover closed. Vertical mounting - Hubbell WP26, horizontal mounting - Hubbell CWP26H (die-cast zinc).

- D. Weatherproof switch plates for toggle-handle switches shall be clear silicone rubber, for standard outlet boxes. Hubbell 1795 or equivalent.
- E. Cover plates for telephone wall outlets shall be required to fit telephone supplier's modular jack.
- F. Cover plates for computer outlets with single cable feed shall be single-gang bushed opening, thermoplastic with 19/32" hole and outlet box strap. (Hubbell P12 Series). Cover plates for computer outlets with dual cable feed-thru (as with daisy-chain terminals) shall be single opening, single-gang, thermoplastic, with 1.360" hole.

2.08 WALL PLATES

- A. Decorative Cover Plate - Smooth plastic.
- B. Weatherproof Cover Plate - Gasketed cast metal with hinged gasketed device covers.
- C. Color - Color of devices shall be as selected by the Architect. Samples (devices, plates or both) may be required to be submitted with other architectural color items by the General Contractor. The Electrical Contractor shall coordinate any such submission required with the General Contractor.

2.09 ACCEPTABLE MANUFACTURERS - PUSHBUTTONS

- A. Westinghouse
- B. General Electric
- C. Square D

2.10 PUSHBUTTONS

- A. NEMA ICS 2, momentary contact with red mushroom pushbutton in separate housing.

2.11 ACCEPTABLE MANUFACTURERS - CLEAR PLASTIC SAFETY COVERS

- A. Unigard, Incorporated, Pullstation #PSP2 Protector, Stopper II.

2.12 CLEAR PLASTIC COVERS

- A. Clear plastic hinged safety cover.

3.01 INSTALLATION

- A. Install wall switches 48 inches above floor, OFF position down.
- B. Install convenience receptacles 18 inches above floor, 6 inches above counters, backsplash, grounding pole on top.
- C. Install specific-use receptacles at heights shown on Contract Drawings.
- D. Drill opening for poke-through fitting installation in accordance with manufacturer's instructions.
- E. Install decorative plates on switch, receptacle, and blank outlets in finished areas, using jumbo size plates for outlets installed in masonry walls.
- F. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets.
- G. Install devices and wall plates flush and level.
- H. All wiring devices in dusty areas, exposed to weather and moisture shall be installed in Type "FS" conduit fittings having mounting hubs.
- I. Devices that have been installed before painting shall be masked. No plates or covers shall be installed until all finishing and cleaning has been completed.
- J. All receptacles shall be installed with ground prong at top position.
- K. Install power poles in accordance with manufacturers instructions.
- L. Install shunt trip pushbuttons at 72" above finished floor.
- M. Install a clear plastic safety cover over each shunt trip pushbutton.

END OF SECTION

EQUIPMENT WIRING SYSTEMS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Electrical connections to equipment specified under other sections.

1.02 RELATED WORK

- A. Division 15 - Mechanical Equipment
- B. Section 16111 - Conduit
- C. Section 16120 - Wire and Cable
- D. Section 16130 - Boxes

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 PREPARATION

- A. Review equipment submittals prior to installation and electrical rough-in. Verify location, size, and type of connections. Coordinate details of equipment connections with supplier and installer.

3.03 INSTALLATION

- A. Use wire and cable with insulation suitable for temperatures encountered in heat-producing equipment.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight, flexible conduit in damp or wet locations.
- C. Install pre-finished cord set where connection with attachment plug is indicated or specified, or use attachment plug with suitable strain-relief clamps.

- D. Make wiring connections in control panel or in wiring compartment of pre-wired equipment in accordance with manufacturer's instructions Provide interconnecting wiring where indicated.

- E. Install disconnect switches, controllers, control stations, and control devices as indicated. Connect with conduit and wiring as indicated.

END OF SECTION

SUPPORTING DEVICES

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Conduit and equipment supports.
- B. Fastening hardware.

1.02 RELATED WORK

- A. Section 03310 Cast-In-Place Concrete. Concrete equipment pads.

1.03 COORDINATION

- A. Coordinate size, shape and location of concrete pads with other sections.

1.04 QUALITY ASSURANCE

- A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Support Channel - Galvanized or painted steel.
- B. Hardware - Corrosion resistant.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using precast insert system, expansion anchors, beam clamps.
- B. Use toggle bolts or hollow wall fasteners in hollow masonry; expansion anchors or preset inserts in solid masonry walls; self-drilling anchors or expansion anchor on concrete surfaces.
- C. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.

- D. Do not use powder-actuated anchors without specific permission.
- E. Do not drill structural steel members without specific permission.
- F. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
- G. In wet locations install free-standing electrical equipment on concrete pads.
- H. Install surface-mounted cabinets and panelboards with a minimum of four anchors.

END OF SECTION

ELECTRICAL IDENTIFICATION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Nameplates.
- B. Wire and cable markers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Nameplates - Engraved three-layer laminated plastic black letters on a white background.
- B. Wire and Cable Markers - Brady System

PART 3 EXECUTION

3.01 INSTALLATION

- A. Degrease and clean surfaces to receive nameplates.
- B. Install nameplates parallel to equipment lines.
- C. Secure nameplates to equipment fronts using screws or rivets. Adhesives shall not be allowed. Secure nameplate to inside face of recessed panelboard doors in finished locations.

3.02 WIRE IDENTIFICATION

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams/equipment manufacturer's shop drawings for control wiring.

3.03 NAMEPLATE ENGRAVING SCHEDULE

- A. Provide nameplates of minimum letter height as scheduled below.
- B. Panelboards, switchboards and motor control centers: 1/4 inch; identify equipment designation. 1/8 inch; identify voltage rating and source.
- C. Individual circuit breakers, switches, and motor starters

in panelboards, switchboards, and motor control centers:
1/8inch; identify circuit and load served, including location. **192**

- D. Individual circuit breakers, enclosed switches, and motor starters - 1/8 inch; identify load served.
- E. Transformers - 1/4 inch; identify equipment designation. 1/8 inch; identify primary and secondary voltages, primary source and secondary load and location.
- F. On 4000 Ampere switchboard add-on section, all feeder fusible switches to be labeled "IMPORTANT - REPLACE WITH CLASS RK-1 FUSES ONLY".

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Disconnect switches.
- B. Fuses.
- C. Enclosures.

1.02 REFERENCES

- A. ANSI/UL 198C - High-intensity capacity fuses - Current limiting types.
- B. NEMA KS 1 - Enclosed switches

1.03 SUBMITTALS

- A. Submit product data under provisions of Shop Drawing Section.
- B. Include outline drawings with dimensions and equipment ratings for voltage, capacity, horsepower, and short circuit withstand capability.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - DISCONNECT SWITCHES

- A. General Electric
- B. Square D
- C. Westinghouse

2.02 DISCONNECT SWITCHES

- A. Fusible Switch Assemblies - NEMA KS 1; quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse clips - Designed to accommodate Class R fuses.
- B. Nonfusible Switch Assemblies - NEMA KS 1; Type HD; quick-make, quick-break, load interrupter enclosed knife

switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. **194**

C. Enclosures - NEMA KS 1; Type 1.

2.03 ACCEPTABLE MANUFACTURERS - FUSES

- A. Bussman
- B. Reliance

2.04 FUSES

- A. Fuses 600 Amperes and Less - ANSI/UL 198C, Class J; ANSI/UL 198E, Class RK5; As indicated on drawings dual element, current limiting, time delay, fuse 250 or 600 volt.
- B. Interrupting Rating - 200,000 rms amperes.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install disconnect switches where indicated on drawings.
- B. Install fuses in fusible disconnect switches.

END OF SECTION

SECTION 16510
LIGHTING FIXTURES

195

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Interior luminaires and accessories
- B. Lamps
- C. Ballasts

1.02 SUBMITTALS

- A. Submit product data or shop drawing.
- B. Include outline drawings, lamp and ballast data, support points, weights, and accessory information for each luminaire type.
- C. Submit manufacturer's installation instructions.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site.
- B. Store and protect products.

PART 2 PRODUCTS

2.01 INTERIOR LUMINAIRES AND ACCESSORIES

- A. Fluorescent Luminaires - FS W-F-414; provide hinged frames with latches, and 0.125 inch thick virgin acrylic lenses.
- B. Recessed Fluorescent Luminaires - Provide trim type and accessories required for installation in ceiling system installed. Maximum depth of luminaire, 6 inch, including yokes and bridges.
- C. For Luminaire Types see schedule on DWG. E-22.

2.02 ACCEPTABLE MANUFACTURERS - LAMPS

- A. General Electric
- B. Sylvania
- C. Westinghouse.

2.03 LAMPS

- A. Fluorescent Lamps - Cool white; all by same manufacturer.

2.04 ACCEPTABLE MANUFACTURERS - FLUORESCENT BALLASTS

- A. Advance
- B. Universal
- C. General Electric

2.05 FLUORESCENT BALLASTS

- A. Fluorescent Ballasts - ANSI C82.1; high power factor type.
- B. Nominal 430 ma Lamp Ballasts - Premium type.

PART 3 EXECUTION**3.01 INSTALLATION**

- A. Install lamps in luminaires and lampholders.
- B. Support surface-mounted luminaires directly from building structure. Install 2 x 4 foot size fluorescent luminaires independent of ceiling framing.
- C. Install recessed luminaires to permit removal from below. Install grid clips.

3.02 RELAMPING

- A. Relamp luminaires which have failed lamps at completion of work.

3.03 ADJUSTING AND CLEANING

- A. Align luminaires and clean lenses and diffusers at completion of work. Clean pain splatters, dirt, and debris from installed luminaires.
- B. Touch up luminaire finish at completion of work.

END OF SECTION

SECURITY SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Complete Security System

1. Doors indicated on plans will be secured with card readers and keypad. Each room will be equipped with infrared sensors.

1.02 SYSTEM DESCRIPTION

A. Operation of Security System

1. Authorized entry to a secured room will require two steps:
 - a) Pass a card through a card reader, and
 - b) Enter the correct keypad number.
2. Upon entry the user will have a pre-determined time to deactivate the interior space protection via a bypass switch. The switch will be associated with a visual indicator to display status of interior protection.
3. To exit a secured area will require passing a card through an exit card reader. If the person leaving is the last person in the room, they will have a pre-determined time to activate the interior space protection after a successful card read.

B. Features

1. Features of the system include an IBM computer in Room 117 for control of the system, an annunciator panel at the main entrance, buzzers and strobes at each protected door, and a voice alarm at the patio/entrance area. The system will be connected to the Delta System for monitoring 24 hours per day.

PART 2 PRODUCTS

2.01 MANUFACTURES

- A. System shall be equal in quality and performance to equipment as manufactured by Simplex or Matrix.

- A. The control cabinet shall be surface mounted and accommodate all the modules, relays, terminal connections, and batteries necessary for the proper enclosure with an outer door and frame assembly equipped with a lock and transparent door panel; manufacturer's standard enameled finish.
- B. Control unit shall contain all necessary components to provide complete control, testing, and indicating facilities for the entire security system. Relays, where employed, shall be pluggable type, sealed in dustproof containers to prevent failure from dust, dirt, tampering, and accidents.

2.03 REMOTE SYSTEM COMPONENTS

- A. Keypad - Simplex 3209-9805 (or equal)
- B. Swipe Reader - Simplex 3209-9801 (or equal)
- C. Command Center - Simplex 3204-9001 (or equal)
- D. Magnalock - Simplex ID #62 (or equal)
- E. Infrared Sensors

PART 3 EXECUTION

3.01 INSTALLATION

- A. Follow manufacturer's instructions regarding mountings, wiring, and testing system. Installer shall meet State of Kentucky requirements for installation and certification.
- B. All wiring shall be installed in conduit. Conduit system shall be independent of all other systems.

3.02 FIELD QUALITY CONTROL

- A. System shall be tested by and a certificate of inspection shall be furnished by a qualified manufacturer's representative or equipment vendor; submit report indicating results to the Architect.

3.03 DEMONSTRATION

- A. Upon completion and before acceptance, system performance shall be demonstrated in the presence of the Architect that all

specified functions are accomplished and that response is accomplished from all signal sending stations and automatic devices. **199**

3.04 MANUFACTURER'S FIELD SERVICES

- A. The security system supplier shall submit for approval with shop drawings, schematic and point-to-point wiring diagrams showing all manual and automatic devices, control panels, control devices, conduit sizes, number and size of wires, etc. At completion of the project, the wiring diagrams shall be revised "As Built" and included as part of the maintenance manuals.

END OF SECTION