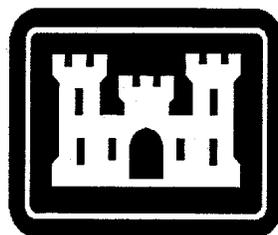


OPERATION AND MAINTENANCE
MISSISSIPPI RIVER
BLACKHAWK PARK (DE SOTO, WISCONSIN)

**SPECIFICATIONS
FOR**

**BLACKHAWK PARK
ADMINISTRATION BUILDING**

MAY 2001



**US Army Corps
of Engineers**
St. Paul District

CONSTRUCTION PROJECT DOCUMENTS

OPERATION AND MAINTENANCE
MISSISSIPPI RIVER
BLACKHAWK PARK (DE SOTO, WISCONSIN)

BLACKHAWK PARK ADMINISTRATION BUILDING

TABLE OF CONTENTS

**DIVISION 0 - BIDDING REQUIREMENTS, CONTRACT FORMS AND
CONDITIONS OF THE CONTRACT**

00010 SF 1442 AND SOLICITATION CONTRACT FORM
00100 BIDDING SCHEDULE/INSTRUCTIONS TO BIDDERS
00600 REPRESENTATIONS & CERTIFICATIONS
00700 CONTRACT CLAUSES
00800 SPECIAL CONTRACT REQUIREMENTS
00830 ATTACHMENTS

DIVISION 1 - GENERAL

01000 GENERAL
01330 SUBMITTAL PROCEDURES
01410 ENVIRONMENT PROTECTION
01451 CONTRACTOR QUALITY CONTROL
01500 TEMPORARY CONSTRUCTION FACILITIES

DIVISION 2 - SITE WORK

02200 SITE PREPARATION
02300 EARTHWORK
02540 WASTEWATER HOLDING TANKS
02735 CRUSHED AGGREGATE SURFACING
02995 LAWN REPLACEMENT

DIVISION 3 - CONCRETE

03300 CAST-IN-PLACE CONCRETE

DIVISION 4 - MASONRY

04200 UNIT MASONRY

DIVISION 5 - METALS

05500 METAL FABRICATIONS

DIVISION 6 - WOOD AND PLASTICS

06100 ROUGH CARPENTRY
06185 PREFABRICATED LAMINATED LUMBER
06190 PREFABRICATED WOOD TRUSSES
06200 FINISH CARPENTRY
06413 WOOD CABINETS - PLASTIC LAMINATED

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07210 BUILDING INSULATION
07310 SHINGLES
07412 METAL WALL PANELS
07710 ROOF SPECIALTIES
07900 JOINT SEALERS

DIVISION 8 - DOORS AND WINDOWS

08110 STEEL DOORS & FRAMES
08262 PREHUNG STEEL DOORS AND WOOD FRAMES
08264 PREHUNG WOOD DOORS AND FRAMES
08360 SECTIONAL OVERHEAD DOORS
08620 PLASTIC-CLAD WOOD WINDOWS
08710 DOOR HARDWARE

DIVISION 9 - FINISHES

09260 GYPSUM BOARD SYSTEMS
09340 PORCELAIN TILE PAVERS
09663 VINYL BASE
09680 CARPET
09900 PAINTING

DIVISION 10 - SPECIALTIES

10440 SIGNS
10522 FIRE EXTINGUISHERS
10800 TOILET AND BATH ACCESSORIES
10900 WARDROBE & CLOSET SPECIALTIES

DIVISION 15 - MECHANICAL

15100 PLUMBING
15500 GENERAL MECHANICAL PROVISIONS
15700 VENTILATION - AIR HANDLING
15800 TESTING AND BALANCING

DIVISION 16 - ELECTRICAL

16000	GENERAL REQUIREMENTS
16025	RACEWAYS AND FITTINGS
16050	WIRES AND CABLES
16075	GROUNDING
16125	TEMPORARY SERVICE
16140	ELECTRICAL SERVICE
16150	PANELBOARDS AND SAFETY SWITCHES
16200	LIGHTING
16225	IDENTIFICATION
16250	WIRING DEVICES
16600	ELECTRIC DRYERS
16975	ABBREVIATIONS FOR ELECTRICAL DRAWINGS

DRAWINGS

ATTACHED UNDER SEPARATE COVER

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*

15. TELEPHONE NO. *(Include area code)*

16. REMITTANCE ADDRESS *(Include only if different than Item 14)*

See Item 14

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ alendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS

SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:
SEE SCHEDULE

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*

ITEM

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO
 10 U.S.C. 2304(c) 41 U.S.C. 253(c)

26. ADMINISTERED BY CODE

27. PAYMENT WILL BE MADE BY CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

29. AWARD *(Contractor is not required to sign this document.)*
Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*

31A. NAME OF CONTRACTING OFFICER *(Type or print)*

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA
BY

31C. AWARD DATE

SECTION 00010 Solicitation Contract Form (Bidding Schedule)

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	New Building and Holding Tanks	1.00	Lump Sum	_____.	_____.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002	Performance and Payment Bonds	1.00	Lump Sum	_____.	_____.

TOTAL ESTIMATED AMOUNT \$ _____.

TABLE OF CONTENTS, SECTIONS 00010 THROUGH 00830

SECTION 00010 SOLICITATION CONTRACT FORM (BIDDING SCHEDULE) 3

TABLE OF CONTENTS, SECTIONS 00010 THROUGH 00830..... 4

SECTION 00100 BIDDING SCHEDULE/INSTRUCTIONS TO BIDDERS 7

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99) 7

52.214-4001 INQUIRIES 8

52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)—ALTERNATE IV (OCT 1997) 8

52.216-1 TYPE OF CONTRACT (APR 1984) 8

52.225-10 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT--CONSTRUCTION MATERIALS (FEB 2000) 8

52.233-2 SERVICE OF PROTEST (AUG 1996) 9

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995) 10

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997) 10

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984) 10

SECTION 00600 REPRESENTATIONS & CERTIFICATIONS 12

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985) 12

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991) 12

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998) 13

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (JAN 2001) 14

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 2000) ALTERNATE I (OCT 2000) & ALTERNATE II (OCT 2000) 16

(END OF PROVISION) 18

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999) 18

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999) 18

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992) 19

SECTION 00700 CONTRACT CLAUSES..... 20

52.202-1 DEFINITIONS (OCT 1995) --ALTERNATE I (APR 1984) 20

52.202-4001 DEFINITIONS (MAY 1995) EFARS PART 2.101 20

52.203-3 GRATUITIES (APR 1984) 21

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984) 22

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995) 22

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997) 23

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997) 24

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997) 25

52.204-4 PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000) 29

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995) 30

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999) 30

52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997) 32

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000) 33

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996) 34

52.222-3 CONVICT LABOR (AUG 1996) 35

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME
 COMPENSATION. (SEP 2000) 35

52.222-6 DAVIS-BACON ACT (FEB 1995)..... 36

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)..... 37

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)..... 38

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)..... 39

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)..... 40

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)..... 40

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988) 40

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988) .. 41

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988) 41

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)..... 41

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999) 41

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL
 EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999) 42

52.222-26 EQUAL OPPORTUNITY (FEB 1999) 43

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB
 1999) 44

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM
 ERA (APR 1998) 48

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)..... 50

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM
 ERA (JAN 1999)..... 51

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998) 51

52.223-6 DRUG-FREE WORKPLACE (JAN 1997) 52

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)..... 53

52.225-9 BUY AMERICAN ACT--BALANCE OF PAYMENTS PROGRAM—CONSTRUCTION
 MATERIALS (FEB 2000)..... 54

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000) 57

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC
 ENTERPRISES (JUN 2000)..... 57

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995) 58

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
 (AUG 1996)..... 59

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984) 59

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)..... 59

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997) 60

52.229-4 FEDERAL, STATE, AND LOCAL TAXES (NONCOMPETITIVE CONTRACT) (JAN 1991) 60

52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984) 61

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)..... 61

52.232-17 INTEREST (JUNE 1996)..... 64

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)..... 64

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)..... 65

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR
 REGISTRATION (MAY 1999)..... 71

52.233-1 DISPUTES. (DEC 1998)..... 73

52.233-3 PROTEST AFTER AWARD (AUG. 1996) 75

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)..... 75

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)..... 76

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984) 77

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)..... 77

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991) 77

52.236-8 OTHER CONTRACTS (APR 1984)..... 77

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND
 IMPROVEMENTS (APR 1984)..... 78

52.236-10	OPERATIONS AND STORAGE AREAS (APR 1984)	78
52.236-11	USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)	79
52.236-12	CLEANING UP (APR 1984)	79
52.236-13	ACCIDENT PREVENTION (NOV 1991)	79
52.236-14	AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)	80
52.236-15	SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)	80
52.236-17	LAYOUT OF WORK (APR 1984)	81
52.236-21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)	81
52.236-26	PRECONSTRUCTION CONFERENCE (FEB 1995)	82
52.242-13	BANKRUPTCY (JUL 1995)	82
52.242-14	SUSPENSION OF WORK (APR 1984)	82
52.243-4	CHANGES (AUG 1987)	83
52.244-5	COMPETITION IN SUBCONTRACTING (DEC 1996)	84
52.246-12	INSPECTION OF CONSTRUCTION (AUG 1996)	84
52.246-21	WARRANTY OF CONSTRUCTION (MAR 1994)	85
52.247-34	F.O.B. DESTINATION (NOV 1991)	86
52.248-3	VALUE ENGINEERING--CONSTRUCTION (FEB 2000) - ALTERNATE I (APR 1984)	87
52.249-2	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)	89
52.249-10	DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)	92
52.252-2	CLAUSES INCORPORATED BY REFERENCE (FEB 1998)	93
52.252-6	AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)	93
252.201-7000	CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)	94
252.203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE- CONTRACT-RELATED FELONIES (MAR 1999)	94
252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)	95
252.204-7004	REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)	95
252.209-7000	ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)	96
252.209-7003	COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)	97
252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)	97
252.219-7009	SECTION 8(A) DIRECT AWARD (JUN 1998)	97
252.223-7006	PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS	98
252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (AUG 2000)	98
252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)	100
252.231-7000	SUPPLEMENTAL COST PRINCIPLES (DEC 1991)	100
252.236-7000	MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)	100
252.236-7001	CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)	101
252.242-7000	POSTAWARD CONFERENCE (DEC 1991)	101
252.243-7001	PRICING OF CONTRACT MODIFICATIONS (DEC 1991)	102
252.243-7002	REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)	102
252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)	102
252.247-7024	NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)	105
SECTION 00800 SPECIAL CONTRACT REQUIREMENTS		107
52.000-4004	PARTNERING	107
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)	107
52.211-12	LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984)	107
52.212-4003	TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15 107	
52.228-15	PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-	108
52.228-4002	INSURANCE	109
52.231-5000	EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE	110
52.232-4004	INVOICE PROCEDURES	110

52.236-4 PHYSICAL DATA (APR 1984)..... 111
 (END OF CLAUSE)..... 111
 52.236-4004 AVAILABILITY AND USE OF UTILITY SERVICES 111
 52.236-4014 PURCHASE ORDERS 111
 52.239-4001 YEAR 2000 COMPLIANCE (FAR 39.106) (JUL 1998)..... 112
 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS 112
SECTION 00830 - WAGE RATES..... 113

SECTION 00100 Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

52.236-4 PHYSICAL DATA (APR 1984)..... 111
 (END OF CLAUSE) 111
 52.236-4004 AVAILABILITY AND USE OF UTILITY SERVICES 111
 52.236-4014 PURCHASE ORDERS 111
 52.239-4001 YEAR 2000 COMPLIANCE (FAR 39.106) (JUL 1998)..... 112
 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS 112
SECTION 00830 - WAGE RATES..... 113

SECTION 00100 Bidding Schedule/Instructions to Bidders

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(End of provision)

52.214-4001 INQUIRIES

Any questions regarding this solicitation should be directed to Debbie Peterson, Contract Specialist, at telephone number (651) 290-5408 (collect calls not accepted). It is requested that all technical questions on the plans and specifications be submitted to the Contract Specialist by facsimile transmission to (651) 290-5706.

52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)—ALTERNATE IV (OCT 1997)

- (a) Submission of cost or pricing data is not required.
- (b) Provide information described below:
 - (1) **Work Breakdown:** For each bid item, list the labor classification and a fair and reasonable estimate of work effort. List the equipment make and model (or generic type, GVW, capacity, etc.) and a fair and reasonable estimate of time (or productivity). Include work breakdown for mobilization.
 - (2) **Materials and Subcontract Quotes:** Include a photocopy of faxed or mailed quote sheets from each quarry or material source.
 - (3) **Overhead charges** itemized by listing markups for home office overhead (General & Administrative), field office overhead, and profit.
 - (4) The contractor should be prepared to defend any discrepancies between the proposal and a fair and reasonable estimate prepared by the Government. The proposal should include sufficient information to demonstrate that the work effort is reasonable pertaining to the site and scope. Any unusual conditions or factors affecting the work duration/productivity should be identified.

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm, fixed price contract resulting from this solicitation.

(End of clause)

52.225-10 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT--CONSTRUCTION MATERIALS (FEB 2000)

(a) **Definitions.** Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Balance of Payments Program--Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act or Balance of Payments Program, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Department of the Army
St. Paul District, Corps of Engineers
190 Fifth Street East
St. Paul, Minnesota 55101-1638

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: **Thomas Novak, Park Manager**

Address: St. Paul District, Corps of Engineers, Blackhawk Park, Route 1, De Soto, Wisconsin 54624

Telephone (608) 648-3314

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

- (a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.
- (b) The use in this solicitation of any FAR (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

SECTION 00600 Representations & Certifications

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52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contradictory to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as an agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

Common parent, as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Taxpayer Identification Number (TIN), as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN:-----

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other-----

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name-----

TIN-----

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (JAN 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have have not , within the three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property;

(C) Are are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision; and

(ii)(A) The offeror, aside from the offenses enumerated in paragraphs (a)(1)(i)(A), (B), and (C) of this provision, has has not within the past three years, relative to tax, labor and employment, environmental, antitrust, or consumer protection laws--

(1) Been convicted of a Federal or state felony (or has any Federal or state felony indictments currently pending against them); or

(2) Had a Federal court judgment in a civil case brought by the United States rendered against them; or

(3) Had an adverse decision by a Federal administrative law judge, board, or commission indicating a willful violation of law.

(B) If the offeror has responded affirmatively, the offeror shall provide additional information if requested by the Contracting Officer; and

(iii) The Offeror has has not , within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was

placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 2000) ALTERNATE I (OCT 2000) & ALTERNATE II (OCT 2000)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is **23332**.

(2) The small business size standard is **\$27.5 Million**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124-1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents as part of its offer that it [] is, [] is not a veteran-owned small business concern.

(5) [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.] The offeror represents as part of its offer that it [] is, [] is not a service-disabled veteran-owned small business concern.

(6) [Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ___ is, ___ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It ___ is, ___ is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.] The offeror shall check the category in which its ownership falls:

___ Black American.

___ Hispanic American.

___ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

___ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

___ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

___ Individual/concern, other than one of the preceding.

(c) Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Small disadvantaged business concern, as used in this provision, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR Part 124.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

(d) Notice. (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

- (a) It has, has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;
- (b) It has, has not, filed all required compliance reports; and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999)

- (a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.
- (b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--
 - (1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;
 - (2) Complete section A and forward the form to DLIS; and
 - (3) Notify the Contractor of its assigned CAGE code.
- (c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

___ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

___ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

SECTION 00700 Contract Clauses

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52.202-1 DEFINITIONS (OCT 1995) --ALTERNATE I (APR 1984)

(a) "Head of the agency" (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, including any deputy or assistant chief official of the agency; and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary.

(b) "Commercial component" means any component that is a commercial item.

(c) "Component" means any item supplied to the Federal Government as part of an end item or of another component.

(d) "Nondevelopmental item" means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (e)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (e)(1) or (e)(2) solely because the item is not yet in use.

(e) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

52.202-4001 DEFINITIONS (MAY 1995) EFARS Part 2.101

"Chief of Contracting Office" means the Chief of the Contracting Division at a District, or the Director of Contracting at a Division, Center, Laboratory, or other support activity.

"Command" means each USACE Division, each USACE District, The U.S. Army Engineering and Support Center (HNC), Transatlantic Programs Center (TAC), Transatlantic Programs Center (Europe) (TAE), Topographic Engineer Center (TEC), Cold Regions Research and Engineering Laboratory (CRREL), Construction Engineering Research Laboratory (CERL), Humphreys Engineering Center Support Activity (HECSA), and Waterways experiment Station (WES).

"Commander" means the commanding officer of each USACE district and each USACE division, and the director or commander of HNC, TAC, TAE, ETL, CRREL, CERL, HECSA and WES.

"Head of Contracting Activity (HCA)" for USACE means the Chief of Engineers.

Centers. For determining contracting authority levels for this regulation, Centers (HNC, and TAC) will equate to a Division. As a subordinate unit to TAC, TAE's contracting authority will therefore equate to that of a district.

Level higher than the contracting officer. When a District or TAE chief of contracting is the contracting officer, a "level higher than the contracting officer" means the Division or Center Director of Contracting. When an operating Division, Center or Laboratory Director/Chief of Contracting is the contracting officer a "level higher than the contracting officer" means the PARC.

Local Cooperation Agreements (LCAs). See Project Cooperation Agreements.

Project Cooperation Agreements. Formerly referred to as Local Cooperation Agreements, these are agreements under 31 U.S.C. 6305 and 42 U.S.C. 1962d-5b. They are not contracts as defined by the FAR.

"USACE and HQUSACE" means the United States Army Corps of Engineers and its headquarters, respectively.

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime

contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the

contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(3) A special Government employee, as defined in section 202, title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of

a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as

provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postconsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

Printed or copied double-sided means printing or reproducing a document so that information is on both sides of a sheet of paper.

Recovered material, for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet

minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price

redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

- (1) The proposal for the contract, subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the contract, subcontract, or modification; or
- (4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

- (1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and
- (2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

- (1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;
- (2) For which cost or pricing data are required; or
- (3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data for modifications under this contract, for price adjustments expected to exceed the threshold set forth at FAR 15.403-4 on the date of the agreement on price or the date of the award, whichever is later, the Contractor may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable--

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Information on modifications of contracts or subcontracts for commercial items. (A) If--

(1) The original contract or subcontract was granted an exception from cost or pricing data requirements because the price agreed upon was based on adequate price competition or prices set by law or regulation, or was a contract or subcontract for the acquisition of a commercial item; and

(2) The modification (to the contract or subcontract) is not exempted based on one of these exceptions, then the Contractor may provide information to establish that the modification would not change the contract or subcontract from a contract or subcontract for the acquisition of a commercial item to a contract or subcontract for the acquisition of an item other than a commercial item.

(B) For a commercial item exception, the Contractor shall provide, at a minimum, information on prices at which the same item or similar items have previously been sold that is adequate for evaluating the reasonableness of the price of the modification. Such information may include--

(1) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(2) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(3) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The Contractor grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this clause, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the Contractor's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the Contractor is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

As soon as practicable after agreement on price, but before award (except for unpriced actions), the Contractor shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

- (1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;
- (2) No material change in disadvantaged ownership and control has occurred since its certification;
- (3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

- (1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
 - (2) Whose management and daily business operations are controlled by one or more women.
- (d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

- (a) This clause does not apply to the unrestricted portion of a partial set-aside.
- (b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--
 - (1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.
 - (2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.
 - (3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

- (a)(1) The worker is paid or is in an approved work training program on a voluntary basis;
 - (2) Representatives of local union central bodies or similar labor union organizations have been consulted;
 - (3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and
 - (4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and
- (b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (SEP 2000)

- (a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.
- (b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage

determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written

notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing

work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988))

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

- (a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

- (a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
- (b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
- (c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
0.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is **Vernon County, Wisconsin**.

52.222-26 EQUAL OPPORTUNITY (FEB 1999)

(a) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with subparagraphs (b)(1) through (11) of this clause. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(b) During performing this contract, the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the

Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under

the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

- (i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;
- (ii) Including the policy in any policy manual and in collective bargaining agreements;
- (iii) Publicizing the policy in the company newspaper, annual report, etc.;
- (iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and
- (v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate

records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

(a)) Definitions. As used in this clause--

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Employment;

(ii) Upgrading;

(iii) Demotion or transfer;

(iv) Recruitment;

(v) Advertising;

(vi) Layoff or termination;

(vii) Rates of pay or other forms of compensation; and

(viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998)

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)(42 U.S.C. 11001-11050) and the

Pollution Prevention Act of 1990 (PPA)(42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

52.223-6 DRUG-FREE WORKPLACE (JAN 1997)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

- (3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;
- (4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--
- (i) Abide by the terms of the statement; and
- (ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.
- (5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;
- (6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:
- (i) Taking appropriate personnel action against such employee, up to and including termination; or
- (ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and
- (7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.
- (c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.
- (d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.
- (End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

- (a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.
- (b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--
- (1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

52.225-9 BUY AMERICAN ACT--BALANCE OF PAYMENTS PROGRAM—CONSTRUCTION MATERIALS (FEB 2000)

(a) Definitions. As used in this clause--

Component means any article, material, or supply incorporated directly into construction materials.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:
None

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act or Balance of Payments Program. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is noncompliant with the Buy American Act or Balance of Payments Program.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....
Domestic construction material...
Item 2			
Foreign construction material....
Domestic construction material...

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(a) Definitions. As used in this clause:

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitute a not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1542(c).

"Interested party" means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an

interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street, NW., MS 2626-MIB, Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of a cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee prime contract.

(iii) The target cost and ceiling price of a fixed-price incentive prime contract.

(iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101 to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least

30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.229-4 FEDERAL, STATE, AND LOCAL TAXES (NONCOMPETITIVE CONTRACT) (JAN 1991)

(a) "Contract date," as used in this clause, means the effective date of this contract and, for any modification to this contract, the effective date of the modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed tax," as used in this clause, means any new or increased Federal, State, or local tax or duty, or tax that was excluded on the contract date but whose exclusion was later revoked or amount of exemption reduced during the contract period, other than an excepted tax, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date.

"After-relieved tax," as used in this clause, means any amount of Federal, State, or local tax or duty, other than an excepted tax, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

"Excepted tax," as used in this clause, means social security or other employment taxes, net income and franchise taxes, excess profits taxes, capital stock taxes, transportation taxes, unemployment compensation taxes, and property taxes. "Excepted tax" does not include gross income taxes levied on or measured by sales or receipts from sales, property taxes assessed on completed supplies covered by this contract, or any tax assessed on the Contractor's possession of, interest in, or use of property, title to which is in the Government.

(b) Unless otherwise provided in this contract, the contract price includes all applicable Federal, State, and local

taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed tax, or of any tax or duty specifically excluded from the contract price by a term or condition of this contract that the Contractor is required to pay or bear, including any interest or penalty, if the Contractor states in writing that the contract price does not include any contingency for such tax and if liability for such tax, interest, or penalty was not incurred through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(d) The contract price shall be decreased by the amount of any after-relieved tax. The Government shall be entitled to interest received by the Contractor incident to a refund of taxes to the extent that such interest was earned after the Contractor was paid by the Government for such taxes. The Government shall be entitled to repayment of any penalty refunded to the Contractor to the extent that the penalty was paid by the Government.

(e) The contract price shall be decreased by the amount of any Federal, State, or local tax, other than an excepted tax, that was included in the contract price and that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to Federal, State, and local taxes and duties that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs. The contract price shall be equitably adjusted to cover the costs of action taken by the Contractor at the direction of the Contracting Officer, including any interest, penalty, and reasonable attorneys' fees.

(h) The Government shall furnish evidence appropriate to establish exemption from any Federal, State, or local tax when (1) the Contractor requests such exemption and states in writing that it applies to a tax excluded from the contract price and (2) a reasonable basis exists to sustain the exemption.

(End of clause)

52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered

by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

- (1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and
- (2) Deducted from the next available payment to the Contractor.

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

- (1) The date fixed under this contract.
 - (2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.
 - (3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.
 - (4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.
- (c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

- (a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.
- (b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.
- (c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes

such action in writing.

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in section 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments. (1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date shall be the 14th day after the date of the Contractor's payment request, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor, whichever is later. If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(2)(i) through (a)(2)(ix) of this clause. If the invoice does not comply with these requirements, it shall be returned within 7 days after the date the designated billing office received the invoice, with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing any interest penalty owed the Contractor in the manner described in subparagraph (a)(4) of this clause.

- (i) Name and address of the Contractor.
 - (ii) Invoice date. (The Contractor is encouraged to date invoices as close as possible to the date of mailing or transmission.)
 - (iii) Contract number or other authorization for work or services performed (including order number and contract line item number).
 - (iv) Description of work or services performed.
 - (v) Delivery and payment terms (e.g., prompt payment discount terms).
 - (vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).
 - (vii) Name (where practicable), title, phone number, and mailing address of person to be notified in the event of a defective invoice.
 - (viii) For payments described in subdivision (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.
 - (ix) Any other information or documentation required by the contract.
 - (x) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.
- (3) Interest penalty. An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.
- (i) A proper invoice was received by the designated billing office.
 - (ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.
 - (iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.
- (4) Computing penalty amount. The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority (e.g., tariffs). This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice principal payment amount approved by the Government until the payment date of such approved principal amount; and will be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice principal payment amount and will be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, the due date on the corrected invoice will be adjusted by subtracting from such date the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) Prompt payment discounts. An interest penalty also shall be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) Additional interest penalty. (i) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with subdivision (a)(6)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor--

(A) Is owed an interest penalty of \$1 or more;

(B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

(1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or

(2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty, except--

(1) The additional penalty shall not exceed \$5,000;

(2) The additional penalty shall never be less than \$25; and

(3) No additional penalty is owed if the amount of the underlying interest penalty is less than \$1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(4)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(6)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. (1) Due dates for recurring financing payments. If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the [insert day as prescribed by Agency head; if not prescribed, insert 30th day] day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(3) Interest penalty not applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

- (i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and
 - (ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.
- (3) Subcontractor clause flowdown. A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.
- (d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--
- (1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;
 - (2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and
 - (3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--
- (i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and
 - (ii) A copy of any notice issued by a Contractor pursuant to subdivision (d)(3)(i) of this clause has been furnished to the Contracting Officer.
- (e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--
- (1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;
 - (2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to subparagraph (e)(1) of this clause;
 - (3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under subparagraph (e)(1) of this clause;
 - (4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--
- (i) Make such payment within--
- (A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must

be recovered from the Government because of a reduction under subdivision (e)(5)(i) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under subparagraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under subdivision (e)(5)(i) of this clause.

(f) Third-party deficiency reports. (1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under subdivision (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under subdivision (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. A written notice of any withholding shall be issued to a subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying--

- (1) The amount to be withheld;
 - (2) The specific causes for the withholding under the terms of the subcontract; and
 - (3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.
- (h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.
- (i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.
- (j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.
- (k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

- (a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.
- (2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--
- (i) Accept payment by check or some other mutually agreeable method of payment; or
 - (ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).
- (b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.
- (c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.232-35 DESIGNATION OF OFFICE FOR GOVERNMENT RECEIPT OF ELECTRONIC FUNDS
TRANSFER INFORMATION (MAY 1999)

(a) As provided in paragraph (b) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration, the Government has designated the office cited in paragraph (c) of this clause as the office to receive the Contractor's electronic funds transfer (EFT) information, in lieu of the payment office of this contract.

(b) The Contractor shall send all EFT information, and any changes to EFT information to the office designated in paragraph (c) of this clause. The Contractor shall not send EFT information to the payment office, or any other office than that designated in paragraph (c). The Government need not use any EFT information sent to any office other than that designated in paragraph (c).

(c) Designated Office:

Mailing Address:

U.S. Army Corps of Engineers
St. Paul District
190 East Fifth Street
St. Paul, MN 55101-1638

Telephone Number:

651/290-5233

Person to Contact:

Mr. Wayne Scheffel, CEMVP-RM-F

Electronic Address:

wayne.scheffel@usace.army.mil

(End of clause)

52.233-1 DISPUTES. (DEC 1998)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. A

voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause

in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

52.236-13 ACCIDENT PREVENTION (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of

U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how

the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Government-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

- (1) the date, circumstances, and source of the order and
- (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)

(a) The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practical extent consistent with the objectives and requirements of the contract.

(b) If the Contractor is an approved mentor under the Department of Defense Pilot Mentor-Protege Program (Pub. L. 101-510, section 831 as amended), the Contractor may award subcontracts under this contract on a noncompetitive basis to its proteges.

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when

work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.247-34 F.O.B. DESTINATION (NOV 1991)

(a) The term "f.o.b. destination," as used in this clause, means--

(1) Free of expense to the Government, on board the carrier's conveyance, at a specified delivery point where the consignee's facility (plant, warehouse, store, lot, or other location to which shipment can be made) is located; and

(2) Supplies shall be delivered to the destination consignee's wharf (if destination is a port city and supplies are for export), warehouse unloading platform, or receiving dock, at the expense of the Contractor. The Government shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved before the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the Government acting in its contractual capacity. If rail carrier is used, supplies shall be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggyback") is used, supplies shall be delivered to truck tailgate at the unloading platform of the consignee, except when the supplies delivered meet the requirements of Item 568 of the National Motor Freight Classification for "heavy or bulky freight." When supplies meeting the requirements of the referenced Item 568 are delivered, unloading (including movement to the tailgate) shall be performed by the consignee, with assistance from the truck driver, if requested. If the contractor uses rail carrier or freight forwarded for less than carload shipments, the contractor shall ensure that the carrier will furnish tailgate delivery, when required, if transfer to truck is required to complete delivery to consignee.

(b) The Contractor shall--

(1)(i) Pack and mark the shipment to comply with contract specifications; or

- (ii) In the absence of specifications, prepare the shipment in conformance with carrier requirements;
- (2) Prepare and distribute commercial bills of lading;
- (3) Deliver the shipment in good order and condition to the point of delivery specified in the contract;
- (4) Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by the consignee at the delivery point specified in the contract;
- (5) Furnish a delivery schedule and designate the mode of delivering carrier; and
- (6) Pay and bear all charges to the specified point of delivery.

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) - ALTERNATE I (APR 1984)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--
 - (i) In deliverable end item quantities only; or
 - (ii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration

management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

- (1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
 - (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
 - (3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.
 - (4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
 - (5) A prediction of any effects the proposed change would have on collateral costs to the agency.
 - (6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
 - (7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.
- (d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.
- (e) Government action. (1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.
- (2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.
- (3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.
- (f) Sharing.
- (1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 45 percent for fixed-price contracts or (ii) 75 percent for cost-reimbursement contracts.
- (2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

- (i) Accept the VECP;
 - (ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and
 - (iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.
- (g) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(h) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract , shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(j) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer will be the sole determiner of the amount of collateral savings.

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

- (1) Stop work as specified in the notice.
- (2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

- (3) Terminate all subcontracts to the extent they relate to the work terminated.
- (4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
- (5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.
- (6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.
- (7) Complete performance of the work not terminated.
- (8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.
- (9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.
- (c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.
- (d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.
- (e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.
- (f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not

terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

(i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(2)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(2)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(3) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

- (iv) fires,
- (v) floods,
- (vi) epidemics,
- (vii) quarantine restrictions,
- (viii) strikes,
- (ix) freight embargoes,
- (x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers;
and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/>

52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

- (a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.
- (b) The use in this solicitation or contract of any **FAR** (48 CFR **1**) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

**252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-
CONTRACT-RELATED FELONIES (MAR 1999)**

(a) Definitions. As used in this clause—

(1) "Arising out of a contract with the DoD" means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

- (1) Employing a person under a prohibition specified in paragraph (b) of this clause; or
 - (2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.
- (e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

- (1) Suspension or debarment;
- (2) Cancellation of the contract at no cost to the Government; or
- (3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

- (1) The person involved;
- (2) The nature of the conviction and resultant sentence or punishment imposed;
- (3) The reasons for the requested waiver; and
- (4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr2000.com>.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the

actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

252.209-7003 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 37 U.S.C. 4212(d) (i.e., the VETS-100 report required by Federal Acquisition Regulation clause 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era), it has submitted the most recent report required by 38 U.S.C. 4212(d).

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

252.219-7009 SECTION 8(A) DIRECT AWARD (JUN 1998)

(a) This contract is issued as a direct award between the contracting office and the 8(a) Contractor pursuant to the Memorandum of Understanding dated May 6, 1998, between the Small Business Administration (SBA) and the Department of Defense. Accordingly, the SBA is not a party to this contract. SBA does retain responsibility for 8(a) certification, for 8(a) eligibility determinations and related issues, and for providing counseling and assistance to the 8(a) Contractor under the 8(a) Program. The cognizant SBA district office is:

[To be completed by the Contracting Officer at the time of award]

(b) The contracting office is responsible for administering the contract and for taking any action on behalf of the Government under the terms and conditions of the contract; provided that the contracting office shall give advance

notice to the SBA before it issues a final notice terminating performance, either in whole or in part, under the contract. The contracting office also shall coordinate with the SBA prior to processing any novation agreement. The contracting office may assign contract administration functions to a contract administration office.

(c) The Contractor agrees that--

(1) It will notify the Contracting Officer, simultaneous with its notification to the SBA (as required by SBA's 8(a) regulations at 13 CFR 124.308), when the owner or owners upon whom 8(a) eligibility is based plan to relinquish ownership or control of the concern. Consistent with Section 407 of Pub. L. 100-656, transfer of ownership or control shall result in termination of the contract for convenience, unless the SBA waives the requirement for termination prior to the actual relinquishing of ownership and control; and

(2) It will not subcontract the performance of any of the requirements of this contract without the prior written approval of the SBA and the Contracting Officer.

(End of Clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (AUG 2000)

(a) The Contractor agrees to deliver under this contract only such of the following articles that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico --

- (1) Food;
 - (2) Clothing;
 - (3) Tents, tarpaulins, or covers;
 - (4) Cotton and other natural fiber products;
 - (5) Woven silk or woven silk blends;
 - (6) Spun silk yarn for cartridge cloth;
 - (7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics;
 - (8) Canvas products;
 - (9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles); or
 - (10) Any item of individual equipment (Federal supply Classification 8465) manufactured from or containing such fibers, yarns, fabrics, or materials.
- (b) This clause does not apply --
- (1) To supplies listed in FAR section 25.104(a), or other supplies for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;
 - (2) To foods which have been manufactured or processed in the United States, its possessions, or Puerto Rico;
 - (3) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or
 - (4) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--
 - (i) The fabric is to be used as a component of an end item that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--
 - (a) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);
 - (B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;
 - (C) Upholstered seats (whether for household, office, or other use); and
 - (D) Parachutes (Federal Supply Class 1670); or
 - (ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.
- (End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

- (2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.
- (c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.
- (d) The Contractor's proposal shall include a justification for any time extension proposed.

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title	File	Drawing No.
-------	------	-------------

The contract drawings are listed on the sheet titled INDEX SHEET included in the drawing set (Drawing No. M-P9-00/006). Work shall also conform to any drawings added by amendment or modification.

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

 (Official's Name)

 (Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) Definitions. As used in this clause --

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.
- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.
- (6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.
 - (i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.
 - (ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.
- (7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.
 - (b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.
 - (2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--
 - (i) This contract is a construction contract; or
 - (ii) The supplies being transported are--
 - (A) Noncommercial items; or
 - (B) Commercial items that--
 - (1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);
 - (2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or
 - (3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.
- (c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --
 - (1) U.S.-flag vessels are not available for timely shipment;
 - (2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information --

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief --

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY
_____	_____	_____
_____	_____	_____
_____	_____	_____
TOTAL	_____	_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h), in all subcontractors under this contract that--

(1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and

(2) Are for a type of supplies described in paragraph (b)(3) of this clause.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

SECTION 00800 Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

52.000-4004 PARTNERING

The Government proposes to form a partnering relationship with the contractor. This partnering relationship will strive to facilitate communication and draw on the strengths of each organization in an effort to achieve a quality project, within budget, and on schedule. Participation will be totally voluntary. Partnering will not alter or supersede any provision of this contract nor will it provide either party with any additional contractual rights or obligations. Participation in partnering will not affect award of this contract. Any cost associated with this partnering will be agreed to by both parties and will be shared equally, with no change in contract price.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **10** calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 270 calendar days after receipt of Notice to Proceed. The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984)

(a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$470.00 per calendar day for each day of delay.

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

(End of clause)

52.212-4003 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSES: DEFAULT (FIXED-PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- 1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- 2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

**MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORKDAYS BASED ON (5) DAY WORKWEEK.**

GEOGRAPHIC LOCATION -- De Soto, Wisconsin

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	15	11	06	05	05	05	05	05	04	03	05	13

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the CONTRACT CLAUSES: DEFAULT (FIXED-PRICE CONSTRUCTION).

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.228-4002 INSURANCE

As referenced in Contract Clause: INSURANCE--WORK ON A GOVERNMENT INSTALLATION, the following types and amounts of insurance are required under this contract.

Type	Amount
Worker's Compensation and Employer's Liability Insurance:	
Coverage A Worker's Compensation	Compliance with State of Wisconsin Worker's Compensation Law
Coverage B Employer's Liability	\$ 100,000
General Liability Insurance:	
Bodily Injury	\$1,000,000 per occurrence
Property Damage	Not Required
Automobile Liability Insurance (Comprehensive Policy Form):	
Bodily Injury	\$ 500,000 per person and \$1,000,000 per occurrence
Property Damage	\$ 100,000 per occurrence

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

MAR 1995)—EFARS

- (a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.
- (b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region IV. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.
- (c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.
- (d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-4004 INVOICE PROCEDURES

In accordance with CONTRACT CLAUSE titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS", the contractor shall submit invoices as follows:

- a. In order to qualify for a periodic payment, the Contractor must submit a proper invoice (request for payment) to the Contracting Officer's Representative (COR) and a determination must be made that supplies or services conform to the contract requirements. This determination will be made for the sole purpose of processing progress payments and will not constitute formal acceptance. The due date for making progress payments shall be as stated in the contract clause: PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS.
- b. The submitted request for payment must be accompanied with documentation adequate to substantiate the amount requested. Substantiation shall be consistent with the clauses in the solicitation titled Quantity Surveys, Purchase Orders, Invoices, etc. satisfactory to the COR.
- c. The Contractor must also include with the payment request a certification as described in the Clause "PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS".

d. Payment requests will be reviewed for propriety by the COR. Defective invoices will be returned to the Contractor for resolution with defects identified. Along with the returned invoice, the COR may include, at its option, an ENG FORM 93-PAYMENT ESTIMATE reflecting the substantiated and uncontested payment amount. The Contractor will then be given the option of signing and returning the FORM 93 for payment along with the original invoice and certification or resubmitting a revised invoice and certification. To expedite payment, the Contractor may request in writing that the COR retain the defective invoice and immediately process the payment request at the amount determined to be acceptable to the Government.

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

- (a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys.
- (b) Weather conditions. Bidders/Offerors should satisfy themselves before submitting bids as to hazards from weather conditions. Complete weather records and reports may be obtained from the local U.S. Weather Service.
- (c) Transportation facilities. Before submitting a bid or offer, contractors should obtain necessary data as to access of highway and railroad facilities, including local road weight restrictions. The unavailability of transportation facilities shall not become a basis for claims for damages or time for completion of work.
- (d) Water Stage Conditions. The reservoir stages are not expected to affect the work. The contractor has the responsibility to schedule its operations to take advantage of the most favorable working conditions regarding perched water, ground water, and precipitation.

(End of clause)

52.236-4004 AVAILABILITY AND USE OF UTILITY SERVICES

The Government will make available to the Contractor, from existing outlets and supplies to the extent that they are available, all reasonably required amounts of electric power and water without charge. The Contractor, at his own expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and shall remove the same prior to final acceptance of the construction.

52.236-4014 PURCHASE ORDERS

Two legible copies of each purchase order issued by the Contractor or the Contractor's subcontractors for materials and equipment to be incorporated into the project, shall be furnished the Contracting Officer as soon as issued. Each purchase order shall (1) be clearly identified with applicable Department of Army contract number, (2) carry and identifying number, (3) be in sufficient detail to identify the material being purchased, and (4) indicate a definite delivery date. At the option of the Contractor, the copies of the purchase orders may or may not indicate the price of the articles purchased.

52.239-4001 YEAR 2000 COMPLIANCE (FAR 39.106) (JUL 1998)

The contractor shall ensure that, with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically, the contractor shall perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Year 2000 compliance requirement.

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

“Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

- (1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.
- (2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.
- (3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.
- (4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).
- (5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.”

(End of Clause)

SECTION 00830 - WAGE RATES

Attachment 1

General Decision Number W1010003

ATTACHMENT 1

General Decision Number WI010003

General Decision Number WI010003
 Superseded General Decision No. WI000003
 State: **Wisconsin**
 Construction Type:

BUILDING

County(ies):

CRAWFORD RICHLAND

LA CROSSE **VERNON**

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number Publication Date
 0 03/02/2001

COUNTY(ies):

CRAWFORD RICHLAND

LA CROSSE **VERNON**

ASBE0019A 06/01/2000

Rates Fringes

INSULATORS/ASBESTOS WORKERS

Includes the application of all insulating materials; protective coverings, coatings, and finishes to all types of mechanical systems

25.76 9.22

ASBE0205A 06/01/1999

Rates Fringes

ASBESTOS REMOVAL WORKER / HAZARDOUS MATERIAL HANDLER

Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not

16.55 3.45

BOIL0107A 07/01/2000

Rates Fringes

BOILERMAKERS

24.25 10.67

SMALL BOILER REPAIR

(Under 25,000 lbs/hour)

19.40 7.20

BRWI0001C 06/01/2000

Rates Fringes

CRAWFORD, LA CROSSE, AND **VERNON** COUNTIES

BRICKLAYERS; MARBLE SETTERS AND TILE LAYERS

22.69 7.90

BRWI0013C 06/01/2000

Rates Fringes

RICHLAND COUNTY

BRICKLAYERS	24.08	8.20
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 CARP0252D 06/01/2000

	Rates	Fringes
LA CROSSE AND VERNON COUNTIES		
CARPENTERS	22.11	6.93
MILLWRIGHTS	23.66	6.93
PILEDRIVERS	22.61	6.93

 CARP0264F 06/01/2000

	Rates	Fringes
CRAWFORD AND RICHLAND COUNTIES		
CARPENTERS	21.96	7.12
MILLWRIGHTS	23.61	7.12
PILEDRIVERS	22.46	7.12

 ELEC0014A 06/01/2000

	Rates	Fringes
ELECTRICIANS	22.80	27.8%+2.94

 ELEC0014F 06/01/1999

	Rates	Fringes
Low volatage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).		
TELEDATA TECHNICIAN I	17.34	2.53+3%
TELEDATA INSTALLER	14.78	2.53+3%

 ENGI0139B 06/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	25.57	10.00
GROUP 2	25.07	10.00
GROUP 3	24.57	10.00
GROUP 4	24.04	10.00
GROUP 5	21.97	10.00
GROUP 6	21.34	10.00

POWER EQUIPMENT OPERATORS CLASSIFICATIONS
 GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.
 GROUP 2: Backhoes (Excavators) having a manufacturer's rated capacity of 3 cu yd and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver
 GROUP 3: Backhoes (Excavators) under 3 cu yd; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter

Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs
 GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic
 Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over
 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and
 Paver Operator; Screed-Milling Machine; Roller over 5 tons;
 Concrete and Grout Pumps; Hydro Blaster, 10,000 psi and over;
 Rotary Drill Operator; Percussion Drilling Machine; Air Track
 Drill with or without integral hammer; Blaster; Boring Machine
 (vertical or horizontal); Side Boom; Trencher, wheel type or
 chain type having 8 inch or larger bucket; Rail Leveling Machine
 (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler;
 Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists;
 Mechanic and Welder

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers
 -Compactors, riding type; Stump Chipper, large; Roller, Rubber
 Tire; Backfiller; Trencher, chain type (bucket under 8 inch);
 Concrete Auto Breaker, large; Concrete Finishing Machine (road
 type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete
 Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers,
 small; Brooms and Sweepers; Lift Slab Machine; Roller under 5
 tons; Industrial Locomotives; Fireman (Pile Drivers and
 Derricks); Pumps (well points); Hoists, automatic; A-Frames and
 Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges
 and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial
 Tractor mounted equipment; Post Hole Digger; Auger (vertical and
 horizontal); Skid Steer Loader with or without attachments;
 Robotic Tool Carrier with or without attachments; Power Pack
 Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt
 Plants); Screed Operator; Stone Crushers and Screening Plants;
 Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines;
 Air Compressor, 400 CFM or over; Refrigeration Plant/Freeze
 Machine; Boiler Operators (temporary heat); Forklifts; Welding
 Machines; Generators, over or under 150 kw; Compressors, under
 400 CFM; Heaters, Mechanical; Combination small equipment
 operator; Winches, small electric; Oiler; Greaser; Conveyor;
 Elevator Operator

IRON0383B	06/01/2000	
		Rates Fringes
IRONWORKERS		23.30 9.86

LABO0140A	06/01/2000	
		Rates Fringes
LABORERS:		
General Laborer, Mason Tender, Mortar Mixer, Air Hammer, Jack Hammer, Air Spade Operator	18.64	5.81
Asbestos Abatement/Removal Worker [Preparation, Removal and Encapsulation of Hazardous Materials from Non-Mechanical Systems]	17.98	5.81

LABO0464H	06/01/2000	
		Rates Fringes

LANDSCAPERS	12.28	4.65

PAIN0259C 06/01/2000		
	Rates	Fringes
CRAWFORD, LA CROSSE, AND VERNON COUNTIES		
PAINTERS:		
Brush	18.40	2.30+5%
Spray, Sandblasting, and work more than 50 ft above ground	19.15	2.30+5%

PAIN0802D 06/01/2000		
	Rates	Fringes
RICHLAND COUNTY		
PAINTERS		
Brush	20.70	5.87
Structural Steel, Spray	21.70	5.87
Drywall Taper	21.00	5.87

PLAS0599F 06/01/2000		
	Rates	Fringes
CEMENT MASONS	20.25	8.50
PLASTERERS	20.75	7.40

PLUM0075K 06/01/2000		
	Rates	Fringes
RICHLAND COUNTY		
PLUMBERS	27.51	6.79

PLUM0434J 06/01/2000		
	Rates	Fringes
CRAWFORD, LA CROSSE, AND VERNON COUNTIES		
PLUMBERS	24.50	7.98

ROOF0011J 06/01/2000		
	Rates	Fringes
RICHLAND COUNTY		
ROOFERS	21.95	5.74

ROOF0096R 05/01/1998		
	Rates	Fringes
LA CROSSE AND VERNON COUNTIES		
ROOFERS	17.25	4.25

ROOF0182D 03/01/1999		
	Rates	Fringes
CRAWFORD COUNTY		
ROOFERS	15.00	4.10

SHEE0018H 06/01/2000		
	Rates	Fringes
SHEET METAL WORKERS	19.23	3%+7.62

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within

the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

 In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U. S. Department of Labor
 200 Constitution Avenue, N. W.
 Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N. W.
 Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U. S. Department of Labor
 200 Constitution Avenue, N. W.
 Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

SECTION 01000

GENERAL

1 GENERAL

1.1 ORGANIZATION OF SPECIFICATIONS

The specifications which govern the materials and equipment to be furnished and the work to be performed under this contract are listed in the Table of Contents. No attempt has been made in the specifications to segregate work to be performed by any trade, craft, or subcontractor. Any segregation between the trades or crafts shall be solely a matter for agreement between the Contractor, Contractor's employees, and subcontractors.

1.2 REFERENCES

Reference to the standards, specifications, or codes of any technical society, organization, or association, or local, state, or Federal authority shall mean the specific edition or revision listed.

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with SECTION 01330: SUBMITTAL PROCEDURES:

SD-04 Drawings

Utility As-Builts; FIO.

The Utility As-Builts are described under PARAGRAPH: SURVEYS.

SD-08

Accident Prevention Plan; FIO.

The accident prevention plan shall comply with the ACCIDENT PREVENTION Clause in Section 00700, and with EM 385-1-1, Appendix A - Minimum Basic Outline for Accident Prevention.

2 PRODUCTS

2.1 APPROVAL OF MATERIALS OR ALTERNATES

Requests for approval of materials and products, or substitutes thereof, will not be considered prior to award of the contract.

2.2 WARRANTIES

Any items that are submitted for review or approval of the Contracting officer should include a copy of the manufacturer's standard warranty if one is available.

3 EXECUTION

3.1 GROUNDS AND ROADWAYS

3.1.1 Availability of Grounds

The boundary limits of the grounds made available for the Contractor's use during the life of the contract are shown on the drawings. Any additional rights-of-way or grounds desired by the Contractor must be approved by the Contracting Officer.

3.1.2 Drainage Facilities

Insofar as natural drainage from the protected areas is obstructed by contract operations, it shall be the Contractor's responsibility to make adequate provision for accommodating such drainage in a satisfactory manner during the life of this contract, either by temporary means or by use of the permanent construction and operation of the permanent facilities.

3.1.3 Roadways

3.1.3.1 Traffic hazards

When continuous haul operations or other condition created by the Contractor's operations result in interference or hazard to traffic on streets and highways, beyond that of ordinary public usage, the Contractor shall erect warning signs and provide flagging services as necessary to safeguard the public as required in SECTION 01500: TEMPORARY CONSTRUCTION FACILITIES.

3.1.3.2 Haul routes

The Contractor shall be responsible for securing all permits required along haul routes. The Contractor shall be the sole permittee and shall be responsible for meeting all obligations of the permits. A copy of each permit shall be submitted to the Contracting Officer. The Contractor, as between the Government and the Contractor, has sole responsibility for damage or deterioration of the Contractor's haul routes. Dust control shall be provided as stated in SECTION 01410: ENVIRONMENT PROTECTION.

3.2 DISPOSAL OF DEBRIS AND WASTE

The Contractor's attention is directed to SECTION 01410: ENVIRONMENT PROTECTION and to the following CONTRACT CLAUSES: PERMITS AND RESPONSIBILITIES; PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, EQUIPMENT, AND IMPROVEMENTS; OPERATIONS AND STORAGE AREAS; and CLEANING UP. Burning will not be permitted at the project site and debris or waste shall not be left on the site. Disposal of clearing and grubbing debris shall be by one of the following methods:

3.2.1 Disposal offsite for useful purposes

In the interest of conservation, it is required that the Contractor make a reasonable effort to dispose of the material offsite for some useful purpose. Timber may be cut into convenient lengths and utilized for making saw logs, posts, cordwood, wood chips for paper making or other uses, or other similar use.

3.2.2 Disposal in a locally operated sanitary landfill

Contractor shall select the disposal site with the approval of the Contracting Officer. The Contractor shall secure the required permits for disposal and provide copies of the permit to the Contracting Officer.

3.2.3 Disposal of Solid Construction Debris and Waste

Disposal of Solid Construction Debris and Waste shall consist of removal from Government property and disposal in compliance with Federal, state, and local requirements for solid waste disposal. Contractor shall select the disposal site with the approval of the Contracting Officer.

3.3 EXISTING UTILITIES

3.3.1 General

The Contractor shall coordinate all utility connections with the utility companies. The Contractor shall be responsible for all costs related to protecting existing utilities. The Contractor shall coordinate with the utility representatives listed below:

Electric: Vernon Electric Cooperative
Monty
(608) 634-3121

Telephone: Vernon Telephone Cooperative
Bob
(800) 543-2029

Water: USACE - Blackhawk Park
Tom Novak
(608) 648-3314

3.3.2 Buried Utilities

The approximate locations of known existing buried utilities are shown on the drawings to the extent of available information at the time the drawings were prepared. (In general, no service connections are shown.) Prior to commencing excavation, the Contractor shall accurately locate all such installations. In the event the Contractor damages any existing utility lines, report thereof shall be made immediately to the Contracting Officer. If the Contracting Officer determines that repairs shall be made by the Contractor, such repairs shall be performed immediately.

3.3.3 Interruption of Services

Utility services shall not be interrupted except for brief periods to facilitate cut-ins. The Contractor shall provide temporary service and shall relocate existing utilities as required to construct the work shown and insure uninterrupted service. If interruption of services is unavoidable, the Contractor shall request approval in writing at least 30 calendar days prior to the proposed interruption. This submittal shall fully describe all details of proposed interruption and the reasons why alternatives are not feasible. The Contractor shall further coordinate with the owner of the utility and notify affected consumers at least 10 calendar

days in advance of interruption of services. The Contracting Officer will not in general approve proposals which require interruption of services for more than 4 continuous hours.

3.3.4 Wisconsin Diggers Hotline

For contract work performed within the State of Wisconsin, the Contractor shall meet the requirements of the Wisconsin Statute 182.0175 "Damage to Transmission Facilities. The Wisconsin Diggers Hotline notification center telephone numbers are:

Hotline	800-242-8511
Main Office	414-259-0676

3.4 SCHEDULING

3.4.1 General

It shall be the responsibility of the Contractor to schedule and execute the work, incorporating the necessary requirements set forth in these specifications. The Contractor shall develop and submit a schedule in accordance with SPECIAL CONTRACT REQUIREMENTS: SCHEDULES FOR CONSTRUCTION CONTRACTS.

3.4.2 Notification

The Contractor shall inform the Government in writing within 5 days after receipt of notice to proceed and before work begins as to which hours of the day and days of the week work under this contract will be performed. The Contractor shall notify the Government at least 24 hours before work is to be conducted on overtime or in multiple shifts.

3.4.3 Scheduling Restrictions

No work shall be performed on weekends and Federal Government holidays, unless authorized in writing by the Contracting Officer.

3.5 CONSTRUCTION RESTRICTIONS

3.5.1 Blasting

Blasting will not be permitted.

3.5.2 Protection of Trees

Trees to be protected shall be determined and staked by the Contracting Officer. The following measures shall be implemented for tree protection and shall be addressed in the Environmental Protection Plan required under SECTION 01410:

- a. The trees shall be protected from wounds to the bark and foliage.
- b. The critical root zone shall be protected from compaction and grading.
- c. Changes in temporary site drainage and ponding shall be minimized to the extent possible that it effects the protected trees.

The critical root zone of trees designated to be protected shall be surrounded by a high visibility fence 4 feet in height, supplied and erected by the Contractor. The critical root zone shall be defined by an area extending 1.5 feet radius from each tree for each inch of Diameter at Breast Height (DBH). The fence shall be securely erected and installed prior to any movement through the project site by construction vehicles or equipment, and remain in place until construction and clean-up are completed. The critical root zone shall remain free of all construction activities including trenching, staging, stockpiling and storage of materials. Vehicles and equipment shall not drive or park within the critical root zone. Variation to the critical root zone size or configuration will only be permitted where it is absolutely necessary for construction of the project, and requires approval of the Contracting Officer. Short duration alterations of the critical root zone involving wood chips and limited equipment travel shall be submitted in writing for approval.

The Contractor shall not operate equipment in vegetated areas outside the work limits.

3.5.2.1 Restoration of Damaged Trees

Any existing tree designated to be protected that is damaged by the Contractor's operations shall be replaced. Trees will be considered damaged if the critical root zone in cohesive soils is compacted, if there are significant wounds that could contribute to rot, or if distress (evident by reduced growth or other observations of distress documented by a forester) is observed prior to closing the contract. Trees shall be replaced in kind on a caliper inch per caliper inch basis (DBH) (i.e. one 6-inch red oak shall be replaced with two 3-inch red oaks, three 2-inch red oaks, or six 1-inch red oaks). Replacement tree size and location will be determined and staked by the Contracting Officer. Repair by pruning, aeration, soil conditioning, or other recommendation from a qualified forester will be considered as substitution for replacement by the Contracting Officer.

3.6 OTHER CONTRACTS

The Contractor shall coordinate with other contractors in the performance of the work and schedule such work to provide for a minimum of delays and interferences. Coordination shall be through the Contracting Officer. Work listed below is currently required under separate contract or is scheduled to be awarded as a separate contract prior to completion of work under this contract. These contracts will be considered in the application of CONTRACT CLAUSE: OTHER CONTRACTS.

3.6.1 Other contracts: None.

3.7 SHORING

3.7.1 General

At locations where shoring is not specifically required by the contract documents to safeguard adjacent structures, the Contractor may at its own option employ shoring for protecting work areas within excavations in lieu of performing excavation to safe and stable side slopes. The Contractor shall construct all shoring required in performing the excavations. Shoring shall be constructed in accordance with the safety requirements of EM 385-1-1.

3.7.2 Responsibility

The Contractor shall be responsible for design and maintenance of all shoring which the Contractor proposes to install.

3.7.3 Removal

Unless otherwise authorized, all sheeting and bracing shall be removed when backfill is completed.

3.8 SURVEYS

3.8.1 Field Layout

The Contractor shall layout the work from the Government established bench marks. The construction of each feature of work shall follow the alignments as indicated on the drawings. The Contractor shall have in place, at least 7 calendar days prior to commencing construction operations, sufficient stakes and markings to enable the Contracting Officer to observe the field layout of the alignment and limits of each feature of work. For each feature of work, these stakes shall define areal limits such that the Contracting Officer can easily determine, without additional surveys, if alignment and/or limit adjustments need to be made. For piping and similar work, these stakes shall define centerline, stationing and work limits. For buildings and similar work, the building corners and grid lines shall be staked. General site work shall be staked to define staging areas, storage areas, and other area limits as directed. The Contracting Officer may waive these requirements for certain areas. The layout shall be sufficient for the Contracting Officer to mark trees, vegetation and other features to be left undisturbed. No work shall take place without approval of field layout by the Contracting Officer.

3.8.1.1 Alignment Changes

The Government reserves the right to make changes in the alignment of any feature of work as may be found necessary during the course of the contract. If it becomes necessary, through no fault of the Contractor, to abandon a line, location or feature on which work has been done, an equitable adjustment for completed work will be made. No alignment changes or abandonment shall take place without prior written notice from the Contracting Officer.

3.8.2 Utility As-builts

An as-built field survey of all utilities shall be conducted after installation to determine the final locations and elevations of all utility structures such as manholes, catch basins, hydrants, gate valves, cleanouts, service connections, and other special controls or structures. Final elevations shall be determined for all sewer inverts and castings. Locations shall be shown using the same convention as the original contract drawings (typically stationing and offset from known centerline). If no convention is used in the contract drawings, locations shall be tied to at least 2 permanent landmarks.

SECTION 01330

SUBMITTAL PROCEDURES

1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows:

SD-01 Data

SD-04 Drawings

SD-06 Instructions

SD-07 Schedules

SD-08 Statements

SD-09 Reports

SD-13 Certificates

SD-14 Samples

SD-18 Records

SD-19 Operation and Maintenance Manuals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections

and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.5 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

2 PRODUCTS (NOT APPLICABLE)

3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. If requested, the Contractor will also be given the submittal register as a diskette containing the computerized ENG Form 4288 and instructions on the use of the diskette. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" and "s" through "u" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 7 calendar

days after Notice to Proceed. The Contractor shall keep the submittal register up-to-date and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. The submittal register shall provide for a reasonable timely distribution of shop drawings as they are prepared (particularly within a specific discipline, i.e.: structural, mechanical).

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

3.5.1 Submittal Copies

The Contractor shall submit 6 copies of each submittal (both government approved and for information only) unless otherwise indicated. Each transmittal shall address only one submittal item. Transmittals returned for resubmission shall be resubmitted in their entirety. When approved by the Contracting Officer, routine test reports and delivery tickets may be submitted with daily quality control reports in place of following submittal procedures under this section.

3.5.2 Schedule

Shop drawings shall be submitted with ample time to secure Government approval prior to the time the items covered thereby are to be delivered to the site. Additional time should be allowed for possible resubmittal. Materials fabricated or delivered without Government approval of the shop drawing will be subject to rejection. All submittals shall be made prior to commencement of applicable work, and allow adequate time for government review acceptable to the Contracting Officer.

3.5.3 Shop Drawings

Shop drawings shall be reproductions on high quality paper with clear legible print. Drawings shall generally be bordered a minimum of one inch and trimmed to neat lines. Shop drawing quality will be subject to

approval. Each shop drawing, including catalog data, shall be identified with a title block including the name of the Contractor, contract number, name and location of project, and name of the item of work or structure to which the shop drawing applies. Catalog data, including specifications and full descriptive matter, may be submitted as shop drawings. Catalog data must be supplemented as necessary to include all pertinent data to verify conformance to the contract documents. When catalog data includes non applicable data, the applicable data shall be clearly indicated.

3.5.4 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.5.5 Operation and Maintenance (O/M) Manuals

a. The Contractor shall submit five bound sets of operation and maintenance (O/M) manuals covering the equipment for which O/M data submittals are required. O/M manuals shall include the following:

1. Product literature, performance data, and ratings.
2. Installation instructions.
3. Operating instructions.
4. Maintenance instructions and address of authorized service center.
5. Wiring diagrams and parts lists.
6. Shop and setting drawings.
7. Test data and certifications.

b. Designate correct model number where literature covers more than one model.

c. Write and furnish duplicate operation and maintenance instructions for items fabricated or assembled by Contractor.

d. Data shall be folded or photographically reduced to 8-1/2" x 11" size and placed into 3-ring hard cover binders; group according to specification section and file with tab pages on which the following is to be typed: Item, Manufacturer, Contractor's Order No., Supplier's Order No., and Manufacturer's Order No.

e. Label binders as follows:

[Systems or Equipment Designation]
OPERATION AND MAINTENANCE MANUAL
[Project Name]
[Project Location]

f. Integrate general, mechanical, and electrical construction into same binder(s). Individual subcontract O/M manuals will not be acceptable, unless authorized by Contracting Officer.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five copies of the submittal will be retained by the Contracting Officer and 1 copy of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

<p>CONTRACTOR</p> <p>(Firm Name)</p> <p>_____ Approved</p> <p>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>
--

3.10 CONTRACTOR RECORD DRAWINGS

The Contractor shall maintain a separate set of marked-up full-scale contract drawings indicating as-built conditions. These drawings shall be maintained in a current condition at all times until completion of the work and shall be available for review by Government personnel at all times. All variations from the contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the contract drawings. Revisions shall be shown on all drawings and details related to the changed feature. These drawings shall be neatly prepared with clear legible print. Deleted items shall be indicated in red and added items or changed locations shall be shown in green. These drawings shall be furnished to the Contracting Officer within 30 days after the required contract completion date.

3.10.1 As-Built Shop Drawings

The Contractor shall record changes to shop drawings to indicate as-built conditions. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted.

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (<i>Specify</i>) |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SUBMITTAL REGISTER (ER 415-1-10)																	CONTRACT NO.									
TITLE AND LOCATION Blackhawk Park Administration Building De Soto, Wisconsin																	CONTRACTOR		SPECIFICATION SECTION							
A C T I V I T Y N O	TRANS- MITTAL NO.	I T E M N O	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL										CLASSI- FICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION		REMARKS			
					D R A W I N G S	I N S T R U C T I O N S	S T A T E M E N T S	C E R T I F I C A T E S	O & I N F O R M A T I O N	R E P O R T S	M E M O R A N D A	P H O T O G R A P H S	A R C H I T E C T U R E	C O M P U T E R G R A P H I C S		O T H E R	S U B M I T T E D B Y	A P P R O V A L N E E D E D B Y	M A T E R I A L N E E D E D B Y	C O D E	D A T E	S U B M I T T E D T O G O V E R N M E N T		C O D E	D A T E	
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	aa.
			01000-1.3	Utility As Builts	X										X											
			01000-1.3	Accident Prevention Plan				X							X											
			01410-1.2	Environmental Protection Plan				X								X										
			01451-1.2	Laboratory Quality Management Manual				X							X											
			01451-1.2	Contractor Quality Control Plan				X							X											
			01500-1.1	Site Plan	X										X											
			02300-1.03	Soil Test Reports				X							X											
			02540-1.02	Tank and Alarm Shop Drawings	X											X										
			02540-1.02	Alarm O/M Manuals									X		X											
			02735-1.03	Aggregate Test Reports				X							X											
			03300-1.03	Reinforcement Shop Drawings	X										X											
			03300-1.03	Concrete Accessories Product Data	X										X											
			03300-1.03	Concrete Mix Designs				X							X											
			03300-1.03	Concrete Delivery Tickets				X							X											
			03300-1.03	Concrete Test Reports				X							X											
			04200-1.02	Brick and CSMU Product Data	X										X											
			04200-1.02	Brick and CSMU Test Reports				X							X											
			04200-1.02	Brick and CSMU Samples							X				X											
			05500-1.03	Metal Fabrication Shop Drawings	X										X											
			06185-1.02	Laminated Lumber Shop Drawings	X										X											
			06190-1.02	Wood Truss Shop Drawings	X										X											
			06190-1.02	Wood Truss Design Calculations	X										X											
			06200-1.02	Millwork Drawings	X										X											
			06413-1.02	Wood Cabinet Shop Drawings	X										X											
			06413-1.02	Wood Cabinet Specifications	X										X											
			06413-1.02	Wood Cabinet Color Samples							X				X											
			06413-1.02	Wood Cabinet Warranty				X							X											
			07210-1.02	Insulation Product Data	X										X											

SUBMITTAL REGISTER (ER 415-1-10)																	CONTRACT NO.									
TITLE AND LOCATION Blackhawk Park Administration Building De Soto, Wisconsin																	CONTRACTOR		SPECIFICATION SECTION							
A C T I V I T Y N O	TRANS- MITTAL NO.	I T E M N O	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL													CLASSI- FICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION		REMARKS
					D R A W I N G S	I N S T R U C T I O N S	S T A T E M E N T S	C E R T I F I C A T E S	O & I N F O R M A T I O N	O I N F O R M A T I O N		O I N F O R M A T I O N	O I N F O R M A T I O N	S U B M I T	A P P R O V A L N E E D E D B Y	M A T E R I A L N E E D E D B Y	C O D E	D A T E								
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	aa.
			09680-1.02	Carpet O/M Instructions											X	X										
			09680-1.02	Carpet Warranty							X				X											
			09900-1.06	Paint Product Data	X											X										
			09900-1.06	Paint Color Charts							X					X										
			10440-1.02	Sign Shop Drawings		X										X										
			10440-1.02	Sign Color Charts							X					X										
			10800-1.02	Toilet Accessory Product Data	X											X										
			10900-1.02	Coat Rack Product Data	X											X										
			15100-1.E	Fixture and Trim Shop Drawings		X										X										
			15100-1.E	Drain, Cleanout, C.B. Shop Drawings		X										X										
			15100-1.E	Valve Shop Drawings		X										X										
			15100-1.E	Water Heater Shop Drawings		X										X										
			15100-1.E	L.P. Gas Storage Tank Shop Drawings		X										X										
			15100-1.E	Safety Device Shop Drawings		X										X										
			15100-1.E	Wall Hydrant Shop Drawings		X										X										
			15100-1.E	Thermometer Shop Drawings		X										X										
			15100-2.J	Equipment O/M Manuals										X	X											
			15500-2.L	Equipment O/M Manuals										X	X											
			15700-1.D	Motorized Damper Shop Drawings		X										X										
			15700-1.D	Manual Damper Shop Drawings		X										X										
			15700-1.D	Grille, Register, Diffuser Shop Drawings		X										X										
			15700-1.D	Gas-Fired Furnace Shop Drawings		X										X										
			15700-1.D	Condensing Unit Shop Drawings		X										X										
			15700-1.D	Flexible Ductwork Shop Drawings		X										X										
			15700-1.D	Duct Insulation Shop Drawings		X										X										
			15700-1.D	Electric Cove Heater Shop Drawings		X										X										
			15700-1.D	Exhaust Fan Shop Drawings		X										X										
			15700-1.D	Electric Fan Heater Shop Drawings		X										X										

SUBMITTAL REGISTER (ER 415-1-10)																	CONTRACT NO.									
TITLE AND LOCATION Blackhawk Park Administration Building De Soto, Wisconsin										CONTRACTOR					SPECIFICATION SECTION											
A C T I V I T Y N O	TRANS- MITTAL NO.	I T E M N O	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL										CLASSI- FICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION		REMARKS			
					D	R	A	C	E	S	R	I	O	&		N	G	S	U	M	I	T		D	A	T
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	aa.
			15800-3.B	Testing and Balancing Report						X					X											
			16000-1.16	Lighting Fixture and Lamp Shop Drawings	X										X											
			16000-1.16	Electronic Ballast Shop Drawings	X										X											
			16000-1.16	Panelboard Shop Drawings	X										X											
			16000-1.16	Hand Dryer Shop Drawings	X										X											
			16000-1.23	Lighting Fixture and Lamp O/M Manuals										X	X											
			16000-1.23	Electronic Ballast O/M Manuals										X	X											
			16000-1.23	Panelboard O/M Manuals										X	X											
			16000-1.23	Hand Dryer O/M Manuals										X	X											

SECTION 01410

ENVIRONMENT PROTECTION

1.1 GENERAL REQUIREMENTS

The Contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

1.1.1 Subcontractors

The Contractor shall insure that its subcontractors comply with the requirements of this section.

1.1.2 Definitions

For the purpose of this specification, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants.

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following items shall be submitted in accordance with SECTION 01330: SUBMITTAL PROCEDURES.

SD-08 Statements

Environmental Protection Plan; GA.

The environmental protection plan shall be prepared in accordance with Paragraph: Environmental Protection Plan.

1.3 ENVIRONMENTAL PROTECTION PLAN

1.3.1 Implementation.

Prior to ordering required materials/equipment or commencing construction work, the Contractor shall:

- a. Submit to the Contracting Officer an acceptable written Environmental Protection Plan;
- b. Obtain the Contracting Officer's written acceptance of the Environmental Protection Plan; and

c. Meet with representatives of the Contracting Officer for the purpose of developing an understanding of the requirements and methods of administration of the Contractor's Environmental Protection Plan.

1.3.2 Compliance.

Notwithstanding the requirements of this section and notwithstanding approval by the Contracting Officer of the Contractor's Environmental Protection Plan, nothing herein shall be construed as relieving the Contractor of all applicable Federal, State, and local environmental protection laws and regulations.

1.3.3 Contents.

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's on-site organization who is(are) responsible for ensuring that the Environmental Protection Plan is adhered to.
- b. Meeting times and personnel attendance for communication and notification of personnel and subcontractors regarding environmental requirements, and name(s) of person(s) responsible for this training.
- c. The Contractor shall prepare a listing of resources needing protection, (i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, and historical, archaeological, and cultural resources); and what methods will be used to protect these resources.
- d. Name(s) of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- e. Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the environmental protection plan.
- f. Methods and locations for waste disposal. Licenses or permits shall be submitted for solid waste disposal sites that are not an operating commercial facility. Evidence of disposal facility acceptance shall be submitted for any hazardous or toxic waste.
- g. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
- h. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
- i. Traffic control plans.
- j. Methods of protecting surface and ground water during construction activities.

- k. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.
- l. Drawing of borrow areas.
- m. Plans for restoration of landscape damage.

1.4 PERMITS

There are no Government furnished permits for this project. The Contractor is responsible for obtaining all applicable permits or licenses. The Contractor shall be responsible for implementing the terms and requirements of the permits held by the Contractor.

1.5 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action when approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping (suspending) all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions. Failure of the Contracting Officer to notify the Contractor of any noncompliance with Federal, State, or local laws or regulations does not relieve the Contractor of the obligation to be in conformance with those requirements.

1.6 PREVIOUSLY USED EQUIPMENT

The Contractor shall thoroughly clean all construction equipment previously used at other sites before it is brought into the work areas, ensuring that soil residuals are removed and that egg deposits from plant pests are not present; the Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

2 PRODUCTS (NOT APPLICABLE)

3 EXECUTION

3.1 ENVIRONMENTAL RESOURCES.

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine its activities to areas defined by the drawings and specifications.

3.2 LAND RESOURCES

Prior to the beginning of any construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without

permission from the Contracting Officer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

3.2.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

3.2.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

3.2.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
- b. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated or required. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.
- c. Sediment basins. Sediment from construction areas shall be trapped in temporary or permanent sediment basins. The sediment basins shall be constructed in accordance with basin plans when shown on

the drawings. The basins shall accommodate the runoff of a local 5 year storm, except that the design storm event required by the watershed district, watershed management board, or similar governing agency shall be used if available. After each storm, the basins shall be pumped dry and accumulated sediment shall be removed to maintain basin effectiveness. Overflow shall be controlled by paved weirs or by vertical overflow pipes. The collected topsoil sediment shall be reused for fill on the construction site, and/or stockpiled for use at another site. The Contractor shall institute effluent quality monitoring programs as required by State and local environmental agencies.

3.2.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

3.3 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

3.3.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water.

3.3.2 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

3.4 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with State air pollution statutes, rules, and regulations and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring

of air quality shall be the Contractor's responsibility. All air areas affected by the construction activities shall be monitored by the Contractor.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

3.4.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

3.4.3 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

3.4.4 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall use methods and devices to control noise emitted by equipment to within the levels specified in the "Safety and Health Requirements Manual" referenced in the clause "Accident Prevention" in SECTION: CONTRACT CLAUSES.

3.5 WASTE DISPOSAL

The Contracting Officer shall be informed of any waste disposal requirements identified during the work and not covered in the Environmental Protection Plan. Waste disposal plans shall be updated and submitted as required.

3.5.1 Solid Wastes

Solid wastes (excluding dredge material and clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.5.2 Chemical Wastes

Chemical waste shall be stored in corrosion resistant containers, removed from the work areas, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any have been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out. The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during excavation or other construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer.

3.7 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction.

3.8 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations outside the neat lines of project features. Such restoration shall be in accordance with the Environmental Protection Plan. This work shall be accomplished at the Contractor's expense and at no additional cost to the Government.

3.9 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities, devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

SECTION 01451

CONTRACTOR QUALITY CONTROL

1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1996) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following items shall be submitted in accordance with SECTION 01330: SUBMITTAL PROCEDURES.

SD-08 Statements

Laboratory Quality Management Manual; FIO.

The manuals as specified in paragraph: Tests - Testing Laboratories - Capability Check shall be submitted.

Contractor Quality Control Plan; FIO.

The plan as specified in paragraph: Quality Control Plan shall be submitted.

2 PRODUCTS (NOT APPLICABLE)

3 EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality

requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who may be the Contractor's on-site superintendent or foreman.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and

person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The CQC System Manager shall be an experienced construction person with a minimum of 5 years experience in related work. The CQC system manager shall be assigned as system manager but may have duties as project superintendent in addition to quality control.

3.4.3 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTAL PROCEDURES

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.

- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC

report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a testing laboratory meeting the requirements listed under PARAGRAPH: CAPABILITY CHECK, or establish a testing laboratory at the project site meeting those requirements. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be

submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in [ASTM D 3740](#) and [ASTM E 329](#). The Contractor shall submit a Quality Management Manual meeting the requirements of [ASTM D 3740](#) and [ASTM E 329](#) for each laboratory to be used, including on-site project laboratories.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$1000.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Contracting Officer. Coordination for each specific test, exact delivery location, and dates will be made with the Contracting Officer.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is

accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

The following sample forms are enclosed at the end of this section:

- a. Construction Quality Control Management Report
- b. CQC Report
- c. Preparatory Phase Checklist
- d. Initial Phase Checklist

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.12 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM FOR CONTRACTOR QUALITY CONTROL OF CONTRACT

The Contractor shall utilize the Contractor Quality Control (CQC) module of the Resident Management System (RMS). The RMS-CQC module is a computer program which is executable on IBM compatible computers with 80386, 80486 and Pentium processors. This module includes a daily CQC reporting form which must be used. The module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment and shall be updated as required. The Contractor shall complete module elements including:

- Prime Contractor staffing
- Subcontractor information, including name, address, trade, and point of contact
- Submittal information, including description, activity number, review period, expected procurement period
- Quality control testing
- Definable features of work
- Installed property listing
- Transfer property listing
- Pay activity and activity information
- Planned cumulative progress earnings
- Scheduled employee education required by the specifications
- Insurance expiration dates

3.12.1 Revisions

The Contractor shall acknowledge receipt of Government comments relating to the RMS-CQC module by specific number reference on his Daily CQC report. The daily CQC report shall also report when corrections are implemented.

3.12.2 Pay Activity

The sum of all pay activity values shall equal the contract amount. Bid items may include multiple activities, but activities shall only be assigned to one bid item.

CQC Report (Cont'd)

5. Submittals Reviewed:

(a) Submittal No. (b) Spec/Plan Reference (c) By Whom (d) Action

6. Off-site surveillance activities, including action taken:

7. Job safety: (Report violations; Corrective instructions given; Corrective actions taken).

8. Remarks: (Instructions received or given. Conflict(s) in Plans and/or Specifications)

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

CQC System Manager

PREPARATORY PHASE CHECKLIST

Contract No.: _____ Date: _____
Definable Feature: _____ Spec Section: _____

Government Rep Notified _____ Hours in Advance Yes _____ No

I. Personnel Present.

	Name	Position	Company/Government
1.			
2.			
3.			
4.			
5.			
6.			
7.			

(List additional personnel on reverse side)

II. Submittals.

1. Review submittals and/or submittal log 4288. Have all submittals been approved? Yes _____ No

If No, what items have not been submitted?

- a.
- b.
- c.

2. Are all materials on hand? Yes _____ No

- a.
- b.
- c.

3. Check approved submittals against delivered material. (This should be done as material arrives).

Comments:

III. Material Storage.

Are materials stored properly? Yes _____ No

If No, what action is taken?

Preparatory Phase Checklist (Cont'd)

IV. Specifications.

1. Review each paragraph of specifications.
2. Discuss procedure for accomplishing the work.
3. Clarify any differences.

V. Preliminary Work.

Ensure preliminary work is correct.
If not, what action is taken?

VI. Testing.

1. Identify test to be performed, frequency, and by whom.
2. When required?
3. Where required?
4. Review Testing Plan.
5. Has test facilities been approved?

VII. Safety.

1. Review applicable portion of EM 385-1-1.
2. Activity Hazard Analysis approved? Yes _____ No

VIII. Corps of Engineers comments during meeting.

CQC System Manager

INITIAL PHASE CHECKLIST

Contract No.: _____
Definable Feature: _____

Date: _____

Government Rep Notified: _____ Hours in Advance Yes _____ No

I. Personnel Present:

Name	Position	Company/Government
1.		
2.		
3.		
4.		
5.		
6.		

(List additional personnel on reverse side)

II. Identify full compliance with procedures identified at preparatory. Coordinate plans, specifications, and submittals.
Comments:

III. Preliminary Work. Ensure preliminary work is complete and correct. If not, what action is taken?

IV. Establish Level of Workmanship.

1. Where is work located?
2. Is a sample panel required? Yes _____ No
3. Will the initial work be considered as a sample? Yes _____ No
(If yes, maintain in present condition as long as possible).

V. Resolve any Differences.

Comments:

Review job conditions using EM 385-1-1 and job hazard analysis.
Comments:

CQC System Manager

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Site Plan; FIO.

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Temporary Electrical Facilities

The Contractor may use Government's existing power supply for construction purposes at no charge.

1.2.2 Sanitation

The Government will designate nearby existing sanitary facilities for use by construction personnel during the project. These facilities will include toilet, washing, and drinking water facilities.

1.2.3 Telephone

The Contractor shall make arrangements and pay all costs for their telephone facilities desired. Government personnel will not take or deliver messages for the Contractor.

1.3 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The

Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads.

1.3.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed.

1.3.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.4 CONTRACTOR'S TEMPORARY FACILITIES

1.4.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.4.2 Staging Area

The boundary limits of the grounds made available for the Contractor's use during the life of the contract are shown on the drawings as Work Limits. Trailers, materials, or equipment shall not be placed or stored outside the work limits.

1.5 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.6 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, generally located to encompass the active construction areas. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

2 PRODUCTS

2.1 BULLETIN BOARD AND PROJECT SIGN

2.1.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

2.1.2 Project Sign

The Contractor shall furnish and erect a Project sign in a location selected by the Contracting Officer at the project site within 15 days after receipt of the notice to proceed. The requirements for the sign and its content shall be as shown on the drawings at the end of this section. Sign shall be maintained throughout the construction period, and upon completion of the project, the sign shall be removed from the site. The PROJECT DESCRIPTION and PROJECT NAME shall be as follows:

PROJECT DESCRIPTION: BLACKHAWK PARK ADMINISTRATION BUILDING

PROJECT NAME: [None]

2.2 GOVERNMENT FIELD OFFICE

Not required.

3 EXECUTION

3.1 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored

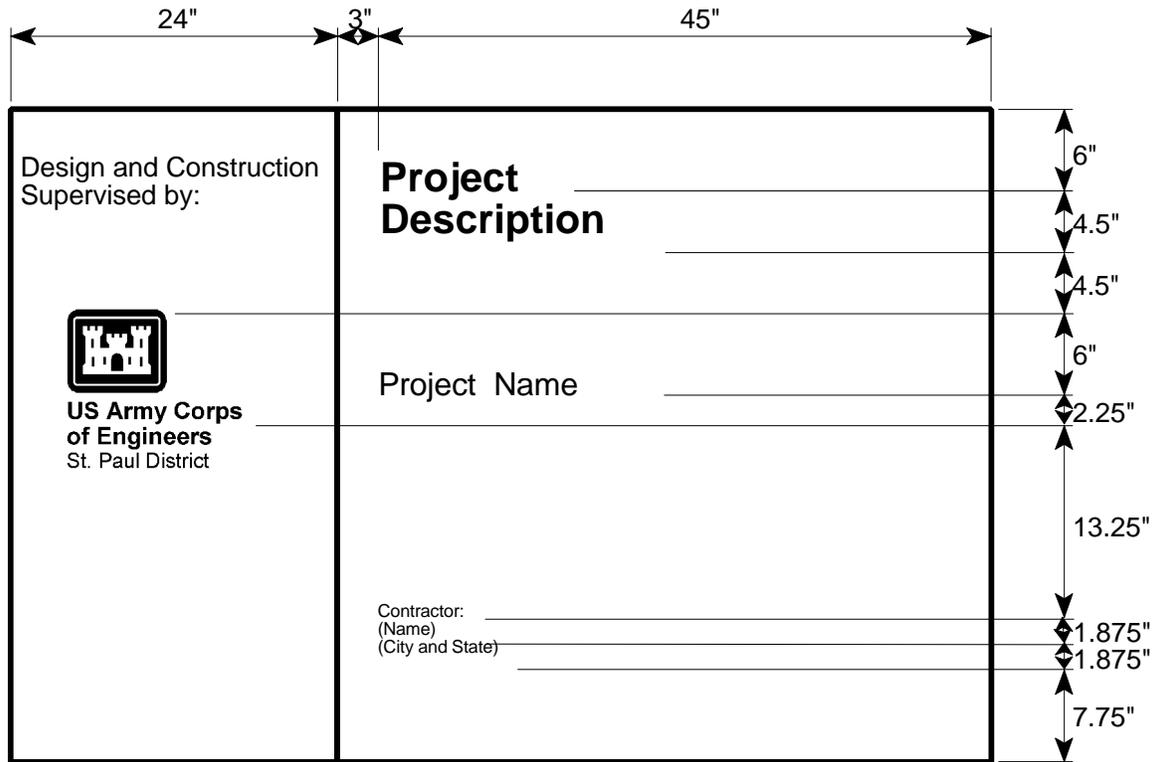
material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

3.2 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PROJECT SIGN

The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel on the right is to be white with black legend. A 2' x 4' decal provided by the Corps shall be placed on the left side of the sign panel.



Project Description:

One to three line project title legend describes the work being done under this contract.
 Color: Black; Typeface: 3" Helvetica Bold; Maximum line length: 42".

Project Name:

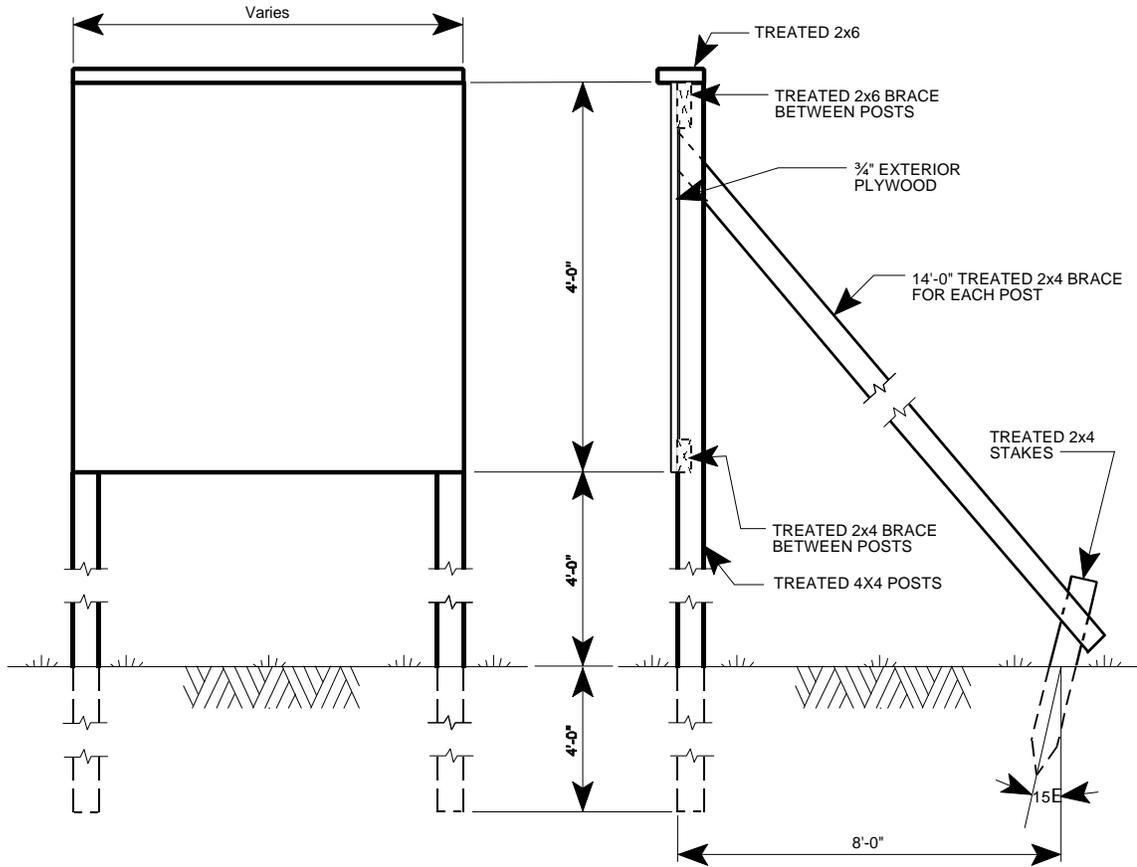
One to three line identification of project or facility.
 Color: Black; Typeface: 1.5" Helvetica Bold; Maximum line length: 42".
 Cross-align the first line of PROJECT NAME with the first line of the Corps Signature as shown.

Contractor:

One to five line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state.
 Color: Black; Typeface: 1.25" Helvetica Bold; Maximum line length: 21".

All typography is flush left and ragged right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

SIGN ERECTION DETAILS



SECTION 02200

SITE PREPARATION

PART 1 GENERAL

1.01 SUMMARY

- A. Provide site preparation as shown and as specified.
- B. Work includes, but is not limited to:
 - 1. Clearing and grubbing trees and vegetation.
 - 2. Topsoil salvage.
 - 3. Miscellaneous demolition.

PART 2 (Not Used)

PART 3 EXECUTION

3.01 SITE CLEARING

- A. Remove trees, stumps, snags, shrubs, brush, heavy growths of grass, weeds and other vegetation, improvements, rubbish and debris, and obstructions that interfere with proposed construction; remove items only as necessary for completion of work.
- B. Cut brush and vegetation flush with ground. Grub out stumps, roots having a diameter of 2 in. or larger, and root clusters to a depth of at least 2 ft below subgrade elevation for pavements, structures, and embankments and 6 in. below ground surface in other areas.
- C. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction. Cut back roots a minimum of 1 ft from concrete work, paving, and structures and to a depth of not less than 2 ft below structures, foundations, and embankments.

3.02 TOPSOIL STRIPPING

- A. Topsoil shall include all friable, fertile, organic clay loam soil suitable for grass and plants, found at surface to a depth of approximately 4 in., reasonably free of subsoil, clay lumps, stones, objects over 2-in. diameter, weeds, large roots, root clusters, and other objectionable material.
- B. Strip topsoil from project area to whatever depths encountered; prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping topsoil.
- C. Where trees are indicated to remain, terminate stripping a sufficient distance from such trees to prevent damage to root system.

- D. Stockpile topsoil in storage piles in areas where designated. Construct storage piles to freely drain surface water. Cover or sprinkle water on storage piles to prevent windblown dust.

3.03 DEMOLITION

- A. Remove miscellaneous structures, pavements, and improvements within construction limits as shown and as required for construction.

3.04 DEBRIS DISPOSAL

- A. Remove debris and excess materials from Government's property and legally dispose of it; do not burn debris.

SECTION 02300

EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

- A. Provide earthwork as shown and as specified.

1.02 CLASSIFICATION

- A. Excavation of materials encountered under this work will be unclassified without regard to type, difficulty to remove, or suitability for use in construction.

1.03 SUBMITTALS

- A. Test Reports: Submit reports for laboratory and field tests required under "Testing" article. Test reports for footing, slab, and pavement subgrades shall be submitted prior to placing concrete or paving materials. Make submittals in accordance with Section 01330.

1.04 TESTING

- A. Contractor shall arrange and pay for soil sampling and testing by a qualified testing agency, acceptable to Government and independent of Contractor. Test soil materials for suitability for intended purpose.
- B. Test subgrade and fill materials for gradation in accordance with ASTM C136 for conformance with ASTM D2487 gradation limits. Test materials for liquid limit and plasticity index in accordance with ASTM D4318. Analyze materials within 3 ft of finished grades of paved areas to determine frost susceptibility.
- C. Provide one optimum moisture-maximum density curve for each type of soil encountered in subgrade and fills under structure slabs and foundations and paved areas; determine maximum densities in accordance with ASTM D1557.
- D. During course of work, testing agency shall inspect and approve subgrades and fill layers before further construction work is performed on each layer. Perform field density tests in accordance with standard, recognized procedures. Take tests as follows:
 - 1. Footing Subgrade: Perform at least three field density test to verify that a minimum bearing capacity of 2000 psf is present.
 - 2. Structure Slabs and Paved Areas: Perform at least three field density tests on subgrade of structure slab and at least two field density tests on aggregate paved area. Perform three field density tests in each compacted fill layer in structure slab and paved area.
 - 3. Utility Trench Backfill (Pavement and Structure Areas): Perform at least two field density tests in random compacted backfill layers for every 400 linear feet of trench under pavements and structures.
 - 4. Foundation Wall Backfill: Perform at least 2 field density tests at locations and elevations as directed.

- E. If in opinion of Contracting Officer, based on reports of testing agency and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional cost to Government.

1.05 BLASTING

- A. Use of explosives is not permitted.

PART 2 PRODUCTS

2.01 SOIL MATERIALS, GENERAL

- A. Soil materials shall be free of organic matter, debris, frozen soils, ice, and other objectionable materials. Rock particles larger than maximum size specified shall be removed prior to placement of soil.
- B. Select existing material from required excavations may be used for fill or backfill if it meets the specified product requirements.
- C. If additional fill is needed for the work, Contracting Officer will identify a borrow area or stockpile at Blackhawk Park from which the material may be obtained.

2.02 GRANULAR FILL

- A. Select soils complying with ASTM D2487 soil classification groups GW (well-graded gravel), GP (poorly-graded gravel), SW (well-graded sand), or SP (poorly-graded sand). Aggregate shall pass a 1-1/2-in. sieve and not more than 35% shall be retained on a No. 10 sieve. Maximum 5% by weight shall pass a No. 200 sieve.

2.03 STRUCTURAL FILL

- A. Select soils complying with ASTM D2487 soil classification groups GW, GP, SW, or SP; or these groups in combination with groups GM, GC, SM, or SC (dual symbol soils). Aggregate shall pass a 1-1/2-in. sieve and not more than 35% shall be retained on a No. 10 sieve. Maximum 12% by weight shall pass a No. 200 sieve; plasticity index shall not exceed 5.

2.04 GRANULAR BEDDING AND BACKFILL

- A. Select soils suitable for use as Granular Fill, except coarse aggregate shall pass a 3/4-in. sieve.

2.05 BACKFILL

- A. Previously excavated soils, free of aggregate larger than 3 in., and suitable for intended purpose.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prepare site for work in accordance with Section 02200.
- B. Layout work to be performed.

3.02 EXCAVATION FOR STRUCTURES

- A. Excavate to achieve necessary dimensions, lines, and grades. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 ft, and extending a sufficient distance from footings and foundations as required for bracing and supports, concrete formwork, installation of services, other required construction, and for inspection.
- B. For footings and foundations, take care not to disturb bottom of excavation. Excavate to final grade just before concrete is placed. Trim bottoms to required lines and grades to leave solid, undisturbed base to receive granular fill, base course, or concrete as shown.

3.03 TRENCHING

- A. Excavate trenches so that pipe can be laid safely and accurately to required line and grade. Hand excavate for bells, fittings and projections to allow for proper jointing and to insure that pipe rests evenly along barrel and is not resting on bell.
- B. In sand and gravel soils, bottom of trench may be shaped to fit bottom 1/3 of pipe. In silt or clay soils, bottom of trench shall be 4 in. below pipe barrel and 3 in. below bell. In rock, bottom of trench shall be 6 in. below pipe barrel. Under foundations and footings, bottom of trench shall be 8 in. below pipe. Provide Granular Bedding as specified below.
- C. Trench widths in ordinary soil shall be limited at top of pipe to not less than a 6 in. clearance on either side of barrel to allow for installation of bedding material between pipe and trench wall. Maximum trench width at top of pipe shall be outside pipe diameter plus 24 in. (30 in. minimum). Trench above top of pipe may be sloped, stepped or vertical to comply with state and federal regulations regarding trenches.
- D. Minimum trench width in rock shall not be less than that for ordinary soil. Maximum trench width shall be outside pipe diameter plus 18 in. for an unsheathed trench, and outside pipe diameter plus 24 in. for sheathed trench.

3.04 EXCAVATION FOR PAVEMENTS

- A. Cut surface under pavement to comply with cross-sections, elevations, and grades as shown.

3.05 EXCAVATION FOR DITCHES

- A. Cut ditches to cross-sections and grades as shown. Keep ditches free of debris until final acceptance of the work.

3.06 UNAUTHORIZED EXCAVATION

- A. Unauthorized excavation consists of removal of materials beyond indicated elevations or side dimensions without specific direction of Contracting Officer. Unauthorized excavation, as well as remedial work, shall be at Contractor's expense. Notify Contracting Officer if unauthorized excavations are made.
- B. Under footings, foundations, underpinning, equipment bases, and retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete or compacted fill may be used to bring elevations to proper position when approved by Contracting Officer.
- C. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed.

3.07 ADDITIONAL EXCAVATION (OVER EXCAVATION)

- A. When excavation has reached required subgrade elevation, notify Contracting Officer who will make an inspection of conditions. Inform Contracting Officer of unsuitable, unconsolidated subgrade soils.
- B. If unsuitable bearing materials, such as poorly compacted fill, existing foundations, rubble, debris, or organic deposits, are encountered at required subgrade elevations, carry excavations deeper and replace excavated material with properly compacted Structural Fill as directed by Contracting Officer.
- C. Removal of unsuitable material and its replacement as directed will be paid for as extra work, unless a pay item is included in the Bid Schedule. Do not proceed with extra or unit price work until authorized.

3.08 STABILITY OF EXCAVATIONS

- A. Maintain sides and slopes of excavations in a safe condition until completion of backfilling. Slope sides of excavations to angle of repose of material excavated; otherwise, shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Take precautions to prevent slides or cave-ins when excavations are made in locations adjacent to backfilled excavations, and when sides of excavations are subjected to vibrations from traffic, machinery, or any other source. Comply with applicable codes and ordinances and EM 385-1-1.

3.09 SHORING AND BRACING

- A. Carry down shoring and bracing as required as excavation progresses. Maintain shoring and bracing while excavations are open. Comply with EM 385-1-1.
- B. Provide and maintain shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition. Use timbers that are sound and free of large or loose knots.
- C. Provide permanent steel sheet piling or pressure treated timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent structures. Cutoff tops as required and leave permanently in place.

3.10 DEWATERING

- A. Perform earthwork in a manner to prevent surface water and ground water from flowing into excavations. Promptly remove water from excavations using pumps, sumps, and dewatering system components necessary to convey water away from excavations. If underground springs are encountered, notify Contracting Officer before proceeding.
- B. Convey water removed from excavations and rain water to collection or run-off areas. Provide and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use foundation or utility trench excavations as temporary drainage ditches.

3.11 STOCKPILING

- A. Stockpile excavated materials meeting the requirements for fill and backfill where directed until required for the work. Place, grade, and shape stockpiles for proper drainage. Locate stockpiles a sufficient distance from edge of excavations, even though such excavations may be sheeted and braced, to prevent such material from falling or sliding into excavations and to prevent cave-ins.

3.12 COLD WEATHER PROTECTION

- A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 deg F by covering with dry insulating materials of sufficient depth to prevent frost penetration.

3.13 EXAMINATION OF SUBGRADE

- A. Examine subgrade prior to placement of fill or backfill. Do not place materials on frozen subgrade. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that material will bond with subgrade.
- B. Prior to placing fill materials, proofroll exposed subgrade with a loaded, tandem axle dump truck to detect soft or yielding areas. Notify Contracting Officer of unsuitable, unconsolidated subgrade soils.
- C. When subgrade has a density less than that specified for the particular area, breakup ground surface, pulverize, moisture-condition to optimum content, and compact top 12 in. to density specified in Part 4 Schedules.

3.14 FILLING AND BACKFILLING, GENERAL

- A. Do not place fill or backfill until required excavation and subgrade preparation have been inspected and approved by Contracting Officer.
- B. Place fill or backfill in approximately horizontal layers; do not exceed the maximum lift thickness specified in Part 4 Schedules before compaction. Spread piles and windrows uniformly.
- C. Adjacent to structures, place fill or backfill to prevent damage and allow structures to assume loads gradually and uniformly, at approximately the same rate on all sides of structure. Adjacent to earth-retaining structures, do not place fill or backfill until concrete has reached specified 28-day compressive strength (minimum 14 days). Do

not travel heavy equipment over cast-in-place concrete work until it has reached specified 28-day compressive strength (minimum 14 days), unless otherwise approved.

3.15 GRANULAR FILL

- A. Provide 6 in. of Granular Fill immediately below concrete slabs and elsewhere as indicated on Drawings.

3.16 STRUCTURAL FILL

- A. Provide Structural Fill under foundations and below Granular Fill of concrete slabs to achieve required lines and grades. Provide Structural Fill under pavements, walks, and other designated areas.

3.17 TRENCH BEDDING AND BACKFILL

- A. Bedding, haunching, and initial backfill for rigid pipes shall be in accordance with ASTM C12, Class C or better. Bedding, haunching, and initial backfill for flexible pipes shall be in accordance with ASTM D2321, Class II or better.
- B. Trenches dug in sandy or gravelly materials may use undisturbed earth for bedding provided surface is shaped to conform to pipe. Provide Granular Bedding in all other trenches from subgrade to a point supporting bottom 1/3 of pipe for rigid pipe and to springline (mid-height) for flexible pipe. Place and compact bedding so that it fills and supports pipe haunch area.
- C. Immediately after installation of pipe, provide tamped Granular Backfill up to a minimum depth of 1 ft above pipe. Take special care in placing and tamping initial backfill material so alignment and grade of pipe is not disturbed nor pipe damaged.
- D. Backfill more than 1 ft over pipe shall meet material requirements for area in which pipe is located.

3.18 BACKFILL

- A. Provide Backfill material to bring excavations to natural or designated grade, except where a higher class of material is required.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 - 1. Acceptance by Contracting Officer of construction below finish grade including, where applicable, perimeter insulation.
 - 2. Inspection, testing, approval, and recording locations of underground utilities.
 - 3. Removal of concrete formwork.
 - 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 - 5. Removal of trash and debris.
 - 6. Placement of permanent or temporary horizontal bracing on horizontally supported walls.
- C. Grade areas adjacent to structures to drain away from structures to prevent ponding.

3.19 FINAL GRADING

- A. Final grade area within project limits by cutting and/or filling as necessary to achieve lines and grades shown. Grade areas adjacent to structure lines to drain away from structure to prevent ponding. Finish surface to be reasonably smooth and free from irregular surface changes. Tolerance for areas to receive topsoil shall be 0.3 ft above or below established grade, less allowance for topsoil. Tolerance for areas to be paved shall be 0.1 ft above or below established pavement subgrade.

3.20 CONTROL OF MOISTURE CONTENT

- A. During placement and compaction, maintain moisture content of materials within optimum range.
- B. Apply water to fill materials by sprinkling materials at borrow site or after placement on fill if necessary. Obtain uniform moisture distribution by discing, blading or other approved methods prior to compaction of layer.
- C. If material is too wet when deposited on fill, remove or dry it to specified moisture content prior to compaction.
- D. If top surface of a preceding layer of compacted fill becomes too dry to permit suitable bond, scarify and moisten it by sprinkling to an acceptable moisture content prior to placement of next layer of fill.

3.21 COMPACTION

- A. Compact each layer of soil material to not less than the percentage of maximum density specified in Part 4 Schedules.
- B. Provide compaction equipment required to obtain specified compaction. Compaction by travel of grading equipment is not considered adequate for uniform compaction. Small vibratory compactors are required wherever fill is placed adjacent to foundation walls, footings, and piers. Pipe bedding and initial backfill shall be hand or mechanically tamped.

3.22 MAINTENANCE

- A. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.
- B. Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add fill or backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.23 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Excess excavated materials (if any) shall be disposed of at Blackhawk Park where indicated by Contracting Officer.

- B. Remove trash, debris, and other waste materials and legally dispose of them off Government's property.

PART 4 SCHEDULES

4.01 COMPACTION SCHEDULE

Material Type	Usage	Lift Thickness ⁽¹⁾	Compaction ⁽²⁾
Granular Fill	Below concrete slabs.	6"	92%
Structural Fill	Under foundations.	6"-8"	95%
	Below concrete slabs.	8"-10"	92%
	Below pavements, walks, and other designated areas.	8"-10"	90%
	Below pipe and conduit.	8"	85%
Granular Bedding	Below pipe and conduit.	6"	85%
Granular Backfill	Initial backfill around pipe and conduit.	6"	85%
Backfill	Unpaved areas 10 ft. or less outside structure line.	8"	90%
	Unpaved areas more than 10 ft. outside structure line.	12"	85%

(1) Place manually compacted materials in maximum 4 in. layers.

(2) Percent of maximum density determined in accordance with ASTM D1557 (Modified Proctor test).

SECTION 02540

WASTEWATER HOLDING TANKS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide wastewater holding tanks as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings for tanks and high water alarm.
- B. O/M Manuals: Submit O/M manuals for high water alarm.
- C. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 WASTEWATER HOLDING TANKS

- A. Wastewater holding tank components shall be as indicated on the Drawings.
- B. Provide products by the indicated manufacturers, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install tanks, equipment, and accessories in accordance with shop drawings and manufacturer's recommendations. Comply with requirements indicated on the Drawings.

3.02 SYSTEM TESTS

- A. Prior to acceptance, conduct an operational test, under observation of Contracting Officer, to demonstrate that installed equipment meets purpose and intent of Specifications. Performance shall be demonstrated throughout operating range.
- B. Demonstrate that equipment is not defective electrically, mechanically, or otherwise, and is in a safe and satisfactory operating condition.

SECTION 02735

CRUSHED AGGREGATE SURFACING

PART 1 GENERAL

1.01 SUMMARY

- A. Provide crushed aggregate surfacing as shown and as specified.

1.02 DEFINITIONS

- A. References to "WIDOT Std. Spec." shall mean Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction, 1996 edition, including current Supplemental Specifications.

1.03 SUBMITTALS

- A. Test Reports: Submit reports for laboratory tests and field density tests required under "Testing" article. Make submittals in accordance with Section 01330.

1.04 TESTING

- A. Contractor shall arrange and pay for aggregate sampling and testing by a qualified testing agency, acceptable to Government and independent of Contractor. Test proposed materials for compliance with specifications using standard, recognized procedures. Determine mechanical analysis, liquid and plastic limit, and moisture-density curve (ASTM D698).
- B. Perform at least three field density tests on aggregate. Density tests shall be at randomly selected locations and in accordance with ASTM D1556 or ASTM D2922. Where field testing indicates that aggregate is below specified density, provide additional compaction and testing at no additional cost to Government.

PART 2 PRODUCTS

2.01 AGGREGATE

- A. Hard durable particles of crushed stone or crushed gravel and a filler of natural sand, stone sand, or other finely divided mineral matter complying with the requirements of WIDOT Std. Spec., Section 304, Gradation No. 2.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place aggregate surfacing to line, grade, depth, and section shown. Comply with WIDOT Std. Spec., Subsection 304, except as otherwise specified.

- B. Aggregate shall be compacted to 95% of maximum density as determined by ASTM D698/AASHTO T99 (Standard Proctor test). If required compacted depth of aggregate exceeds 6 in., aggregate shall be constructed in two or more layers of approximately equal thickness.

SECTION 02995

LAWN REPLACEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Replace lawns and appurtenant improvements disturbed by construction as specified.
- B. Restore surfaces using designated seed mixture. Clean site and remove equipment, salvaged material, unused materials, cleared brush and trees, and debris resulting from construction. Repair or replace lawns, shrubs, trees, and other items within and beyond construction limits damaged or destroyed through carelessness or failure to follow reasonable safeguards.
- C. Topsoil and seed borrow and excess material disposal sites to prevent erosion.

1.02 RELATED SECTIONS

02200 Site Preparation: For topsoil removal.

1.03 DEFINITIONS

- A. References to WIDOT Std. Spec. shall mean the Wisconsin Department of Transportation, "Standard Specifications for Highway and Structure Construction," 1996 edition.

PART 2 PRODUCTS

2.01 TOPSOIL

- A. Fertile, friable, natural loam surface soil, reasonably free of subsoil, clay lumps, brush, weeds and free of roots, stumps, stones larger than 2 in., and other extraneous matter harmful to plant growth.
- B. Salvaged topsoil within work area will be insufficient for restoration work required. Obtain additional topsoil from local sources to supplement quantities at site in order to provide required depths.

2.02 GRASS SEED

- A. Deliver in bags tagged and labeled to show percent of purity and germination. Seed shall have been tested within one year prior to seeding and shall conform to latest seed laws of United States and of State. Seed mixture shall be as follows:
 - 1. WIDOT Std. Spec., Section 630, Mixture No. 40.

2.03 FERTILIZER AND LIME

- A. WIDOT Std. Spec., Section 629, Type A.

2.04 MULCH

- A. WIDOT Std. Spec., Section 627.

2.05 MULCH NETS

- A. Biodegradable twisted jute or spun-coir mesh, 0.92 lb per sq yd minimum, with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6-in. long.

PART 3 EXECUTION

3.01 SEEDING

- A. Place a minimum of 6 in. of topsoil and fertilize, lime, seed, and mulch in accordance with the applicable requirements of WIDOT Std. Spec.
- B. At Contractor's option; seed, fertilizer, lime, and mulch may be applied by hydroseed method. Mix components in water using equipment specifically design for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application. Include nonasphaltic tackifying agent in mixture.
- C. If hydroseeding is not used, anchor mulch on slopes of 3H:1V or steeper using mulch nets.

3.02 MAINTENANCE

- A. Maintain seeded areas for 30 days or until satisfactory growth has been achieved, whichever is longer. Maintenance shall include replacement of eroded areas, watering as needed to prevent burn off, and other work as necessary to establish healthy growth. Satisfactory growth for seeded areas shall be considered healthy grass growth with no bare spots larger than 6 in. square and total bare spots not exceeding 2 percent of total seeded area.
- B. Areas seeded after September 15 which fail to become established in the fall shall be reseeded and fertilized the following spring before June 1.

ySECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SUMMARY

- A. Provide cast-in-place concrete work, including finishing and curing, as shown and as specified.

1.02 CODES & STANDARDS

- A. Comply with provisions of following codes and standards, except as otherwise designated:
 1. ACI 301 Specifications for Structural Concrete for Buildings.
 2. ACI 304 Guide for Measuring, Mixing, Transporting and Placing Concrete.
 3. ACI 318 Building Code Requirements for Reinforced Concrete.
 4. ACI SP-2 Manual of Concrete Inspection.
 5. Wis. Adm. Code, Chapter COMM 53, Structural Requirements.

1.03 SUBMITTALS

- A. Shop Drawings: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315.
- B. Product Data: Submit product data for concrete accessories.
- C. Mix Designs: Submit proposed mix designs to Contracting Officer 10 days prior to beginning concrete work. Do not begin concrete production until mixes have been reviewed.
- D. Delivery Tickets: Submit delivery ticket to Contracting Officer for each load of concrete delivered to project.
- E. Test Reports: Testing agency shall submit copy of field and laboratory reports to Contracting Officer.
- F. Make submittals in accordance with Section 01330.

1.04 QUALITY ASSURANCE

- A. Prior to placing concrete, request review of reinforcement steel by Contracting Officer.

1.05 TESTING

- A. Contractor shall arrange and pay for services of a qualified testing agency acceptable to Government and independent of Contractor.
- B. Testing agency shall test concrete to measure slump, entrained-air content, and compressive strength to determine compliance with specifications. Furnish test

apparatus and cylinders, perform on-site sampling and testing, submit samples, and perform laboratory tests.

- C. During progress of work, prepare 3 test cylinders per 25 cu. yd. or fraction thereof for each class of concrete placed each day. Identify samples, moist cure at 70 deg. F. for five days, and ship samples to testing laboratory for one 7-day compressive strength test and two 28-day tests.
- D. Perform slump and air content tests on concrete from same batch as sampled for strength tests and whenever there is a change in consistency of concrete. If measured slump or air content falls outside specified limits, immediately check another portion of same batch. In event of a second failure, concrete shall be rejected.
- E. Test procedures shall be in accordance with ASTM C31, C39, C143, C172, and C231.
- F. Cost of tests, including materials and transportation, shall be paid by Contractor and shall be considered incidental to the various items of concrete work.

1.06 WEATHER CONDITIONS

- A. Protect concrete work from physical damage or reduced strength caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as specified below.
 - 1. When air temperature falls to or is expected to fall below 40 deg. F., uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 60 deg. F. (50 deg. F. for heavy sections) and not more than 90 deg. F. at point of delivery.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Ascertain that forms, reinforcing steel, and adjacent concrete surfaces are entirely free of frost, snow and ice before placing concrete.
 - 3. During seasons when atmospheric temperature may be expected to drop below 40 deg. F., concrete shall be protected by covering with impermeable paper and not less than 12" of loose dry hay or straw. Retain covering for ten days.
- B. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as specified below.
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg. F. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated in total amount of mixing water.
 - 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 - 3. Spray forms, reinforcing steel, and subgrade just before concrete is placed.
 - 4. Do not use set-control admixtures, unless approved by Contracting Officer.

PART 2 PRODUCTS

2.01 CEMENT

- A. Portland cement, ASTM C150, Type I; provide air-entrained Type IA as required.

2.02 AGGREGATES

- A. Fine and coarse aggregates, ASTM C33, consisting of clean, hard, durable sand and crushed rock, crushed gravel, or gravel. Coarse aggregate shall meet grading requirements for size number 67, 57 or 467 (see also Part 4 Schedules). Maximum coarse aggregate size shall not be more than one-fourth of slab thickness. Ratio of coarse aggregate to fine aggregate shall not be less than 1:1 nor more than 2:1.

2.03 WATER

- A. Mixing water shall be potable, free of oil, acid, excessive alkalinity, organic matter, and salts.

2.04 ADMIXTURES

- A. Admixtures which do not adversely affect strength and durability of concrete may be used with permission of Contracting Officer, if used in strict accordance with manufacturer's instructions. Care shall be exercised to assure that the admixture does not increase or decrease air content outside of allowable limits. Do not use salt or chemical anti-freeze admixtures.

2.05 REINFORCING STEEL

- A. ASTM A615, Grade 60, new billet steel bars.
- B. Provide metal chairs, stirrups, spacers, and hangers to support reinforcement and insure against displacement during placement of concrete. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are plastic protected (CRSI, Class 1) or stainless steel protected (CRSI, Class 2).

2.06 WELDED WIRE FABRIC

- A. ASTM A185, welded steel wire fabric.

2.07 VAPOR BARRIER

- A. Vapor barrier materials of width to minimize edge laps and resistant to decay in accordance with ASTM E154. Provide water resistant barrier paper consisting of heavy kraft papers laminated together with glass fiber reinforcement and overcoated with black polyethylene on each side or similar underslab vapor barrier product; Fortifiber "Moistop", Glas-Kraft "Ply-Bar Plus", Raven Industries "Rufco", Reef Industries "Griffolyn T-85", or approved equal.

2.08 BOND BREAKER

- A. 15-pound asphalt-impregnated felts.

2.09 EXPANSION JOINT FILLER

- A. Premolded joint filler (PJF), bituminous/fiber type or asphalt-impregnated felt type, ASTM D994; 1/2" thickness by depth of concrete, unless otherwise shown.

2.10 MOISTURE-RETAINING COVER

- A. Waterproof paper, polyethylene film, or polyethylene-coated burlap complying with ASTM C171.

2.11 CURING AND SEALING COMPOUND

- A. Liquid membrane-forming compound, ASTM C309. Provide white-pigmented Type 2 for exterior slabs and Type 1, Class B, for interior slabs.

2.12 CONCRETE MIXTURES

- A. Conform to minimum standards for class and usage in Part 4 Schedules.
- B. Prepare design mixes for each type of concrete on the basis of compressive strength by methods recommended in ACI 318. Use an independent materials laboratory for preparing and reporting proposed mix designs.

PART 3 EXECUTION

3.01 PREPARATION

- A. Wet forms with light oil.
- B. Prepare subgrade and place vapor barrier. Lap vapor barrier joints 6"; joints, edges at foundations, penetrations, and punctures shall be sealed.
- C. Separate old concrete and adjacent structures from new pour with expansion joint filler.
- D. Position reinforcement steel to provide min. concrete cover of 3" for footings, 2" for foundation walls, 3" for bottom of slabs on grade, and 1" for slabs exposed to dry interior spaces, and 2" for slabs exposed to water or wastewater.

3.02 JOINTS

- A. Expansion joints shall consist of expansion joint filler placed to full depth of concrete. Contraction joints shall consist of a slot or groove, at least 1" in depth and 1/4" wide formed in a manner approved by Contracting Officer.

3.03 MIXING CONCRETE

- A. "Ready-mix" concrete shall be produced, delivered and handled in accordance with ASTM C94. Concrete shall be deposited at job site within 1 hour after introduction of water in mix. Care shall be taken in transferring concrete from truck or mixer to avoid segregation of aggregates in mixture.

3.04 CONCRETE PLACEMENT (GENERAL)

- A. Place concrete as specified and in accordance with ACI 304. Maintain reinforcing steel in proper position.

- B. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints. Deposit concrete as near as practicable to final location to avoid segregation from rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.
- C. Screed concrete to proper level to avoid excessive skimming or grouting.
- D. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or which has been contaminated by foreign materials. Do not use retempered concrete. Remove rejected concrete from project site.
- E. Rock pockets or voids found after forms are removed shall be filled immediately with a well-mixed grout composed of one part of Portland cement and 3 parts of fine aggregate finished to true surface of concrete.
- F. Concrete shall not be placed around castings, frames, joints, and other embedded fixtures until they have been accurately adjusted and set to required alignment and grade. Prior to placing of concrete, castings, frames, and embedded metal fixtures shall be painted on their contact surface with a heavy coat of asphaltic mastic or separated with expansion joint filler.

3.05 PLACING CONCRETE INTO FORMS

- A. Deposit concrete in forms in horizontal layers not deeper than 18" and in a manner to avoid inclined construction joints.
- B. Remove temporary spreaders in forms when concrete placing reaches elevation of spreaders.
- C. Consolidate concrete in forms by mechanical vibrating equipment and supplement by hand-spading, rodding or tamping. Use vibrators designed to operate at a speed of not less than 6000 impulses per minute when submerged in concrete. Vibration of forms and reinforcing will not be permitted.
- D. Do not use vibrators to move concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visibly effective. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other items without segregation of mix.

3.06 PLACING CONCRETE SLABS

- A. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until panel or section is complete.
- B. Consolidate concrete during placing operations using mechanical vibrating equipment. Thoroughly work concrete around reinforcement and other embedded items and into corners. Consolidate concrete placed in beams and girders of supported slabs, and against bulkheads of slabs on ground, as specified for formed concrete structures. Consolidate concrete in remainder of slabs by vibrating bridge screeds, roller pipe

screeds, or other acceptable methods. Limit time of vibrating consolidation to prevent bringing an excess of fine aggregate to surface.

- C. Bring slab surfaces to correct level with straight edge and strike off. Use bull floats or darbies to smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on plastic surface. Do not disturb slab surfaces prior to beginning finishing operations.

3.07 FINISHING

- A. Thoroughly float surface after concrete has been struck off.
- B. Exterior walks, ramps, and slabs shall have a lightly broomed surface with grain perpendicular to direction of travel.
- C. Edges shall be neatly trimmed with 1/4" radius edging tool. Honeycombed areas shall be pointed with mortar.

3.08 CURING AND SEALING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Cure formed and unformed concrete at least seven days as follows:
 - 1. Apply membrane curing and sealing compound to concrete floors, equipment pads, and slabs not designated to receive toppings, bonded flooring, or other finish, in accordance with manufacturer's recommendations.
 - 2. Apply moisture-retaining cover to wet cure surfaces to receive bonded finishes, and surfaces where curing and sealing compounds would reduce bond of subsequent treatments.
- B. At completion of construction, exposed interior slabs shall be thoroughly cleaned and given a second application of curing and sealing compound.

3.09 CONCRETE SURFACE REPAIRS

- A. Request inspection of concrete surfaces immediately after removal of formwork. After inspection, repair and patch defective areas with cement mortar as soon as practicable.
- B. Cut out honeycomb, rock pockets, voids over 1/4" diameter, and holes left by tie rods and bolts. Remove defects down to solid concrete but, in no case, to a depth of less than 1". Make edges of cuts perpendicular to concrete surface or slightly undercut to provide a key at edge of cut. Thoroughly clean, dampen with water, and brush-coat area to be patched with bonding agent. Place cement mortar after bonding compound has set.
- C. Compact mortar in place and strike off slightly higher than surrounding surface. For exposed-to-view surfaces, patch shall match color of surrounding concrete.

PART 4 SCHEDULES

4.01 CLASSES OF CONCRETE

<u>Class</u>	<u>Min. Comp. Strength @ 28 days, p.s.i.</u>	<u>Max. Slump</u>	<u>Max. Agg. Size</u>	<u>Min. Cement, Bags/ C.Y.</u>	<u>Max. Water, Gal/ C.Y.</u>	<u>Max. Water-Cement Ratio</u>	<u>Air Content, % By Volume</u>
AA	4000	3-1/2"	3/4"*	6	30	0.45	5-7%*
A	4000	3-1/2"	3/4"	6	32	0.48	1-3%

* For 1-1/2 max. aggregate size, air-entrainment shall be 4-6%.

4.02 USAGE SCHEDULE

- A. Use class scheduled below, unless shown otherwise. Use air-entrained types for exterior walks, curbs, exposed walls, slabs, etc.

<u>Usage/Application</u>	<u>Min. Class</u>
Footings, 48" +/- foundation (frost) walls	A
Interior slabs-on-grade	A
Exterior slabs, ramps, walks	AA

SECTION 04200

UNIT MASONRY

PART 1 GENERAL

1.01 SUMMARY

- A. Provide concrete unit masonry as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit product data for brick masonry and calcium silicate units.
- B. Test Reports: Submit certified copies of laboratory test reports to show compliance with specified requirements.
- C. Samples: Submit small-scale samples of each type of brick and calcium silicate masonry unit showing full extent of colors and textures available. Samples for brick shall represent brick which matches the color requirement in "Face Brick" article below.
- D. Make submittals in accordance with Section 01330.

1.03 CODES AND STANDARDS

- A. Unit masonry work shall conform to Wis. Adm. Code, ch. COMM 53.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store cementitious materials and aggregates to prevent deterioration or contamination with foreign material.
- B. Store brick and concrete block in stacks to avoid damage; protect from dirt, stains, and wetting.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Protect partially completed masonry against weather; when work is not in progress, cover top of walls with strong, waterproof, non-staining membrane. Extend membrane at least 2 ft. down both sides of walls and anchor securely.
- B. Do not lay masonry when air temperature is below 40 deg. F. unless suitable means are provided to heat materials, protect work from cold, and insure mortar will harden without freezing. Warm units to at least 50 deg. F. before laying. To remove frost or excess moisture, heat units to a temperature not over 140 deg. F. Protect walls for not less than 48 hours after laying. Comply with "Recommended Practices for Cold Weather Masonry Construction", International Masonry Industry All-Weather Council.

PART 2 PRODUCTS

2.01 FACE BRICK

- A. Face brick shall be modular size and conform to ASTM C216, Type FBS, Grade SW. Brick shall be guaranteed by supplier to achieve a rating of "slightly effloresced" when tested in accordance with ASTM C67.
- B. Brick shall match brick used for Government's shower building at Blackhawk Park. Brick at shower building is Hemstock Block "B tan."

2.02 CALCIUM SILICATE MASONRY UNITS (CSMU)

- A. CSMU shall conform to ASTM C73, severe-weathering classification. Surface finish shall be smooth.
- B. Provide Arriscraft International/Renaissance Masonry Units, or approved equal.

2.03 ANCHORING DEVICES

- A. Straps, bars, bolts and rods of type and size shown, fabricated from not less than 16 ga. galvanized sheet metal and 3/8" dia. galvanized rod stock, unless otherwise shown. Where designated, flexible anchors shall provide lateral restraint while permitting horizontal and vertical movement of masonry.
- B. For anchorage of veneer to substrates other than steel studs, provide corrugated metal tie veneer anchors, min. 16 ga., 7/8" wide, with one end crimped for attachment to substrate, extending to within 1" of opposite face of masonry veneer.

2.04 CONCEALED FLASHINGS

- A. Composite flashing product consisting of a pliable and highly adhesive rubberized asphalt compound, minimum 32 mils thick, bonded completely and integrally to a high-density, cross-laminated polyethylene film, minimum 8 mils thick, to produce an overall thickness of 40 mils. Include primer recommended by flashing manufacturer for bonding flashing sheets to masonry and concrete.

2.05 REINFORCING BARS

- A. Deformed steel reinforcing bars, ASTM A615, Grade 60.

2.06 BOND BREAKER STRIPS

- A. 15 lb. asphalt roofing felt, ASTM D226; or 15 lb. coal-tar roofing felt, ASTM D227.

2.07 CONTROL JOINT

- A. Extruded solid rubber, ASTM D2000, M2AA-805, for use with standard sash block.

2.08 WEEPHOLES

- A. Provide one of the following. Do not intermix weephole types on the project, unless otherwise designated.
 - 1. One-piece polyester mesh, 2.5" x 4" x 0.5", weep vents by Mortar Net, or approved equal.
 - 2. One-piece, L-shaped aluminum unit made to fit in vertical mortar joint consisting of a vertical channel with louvers stamped in web and a flat horizontal, full height of brick, painted by masonry contractor to match cured mortar color prior to installation; Brock-White 4231, or approved equal.
 - 3. One-piece PVC molded unit, slotted design, weephole/ventilator, full height of brick, painted by masonry contractor to match cured mortar color prior to installation.
 - 4. Medium density polyethylene plastic tubing, 1/4" O.D. by 4".

2.09 MORTAR

- A. Comply with ASTM C270, Type S, 1800 psi.
- B. Use portland cement and lime, or mortar cement, to prepare mortar. Masonry cement may not be used.
- C. Antifreeze compounds shall not be used in mortar. Plasticizers, such as Master Builders "Omicron Om", Hydratite Plus, American Colloid Co. "Easy Spred", or approved equal, may be added to mortar for unit masonry.
- D. Use custom colored mortar for all brick.

2.10 MASONRY GROUT

- A. Mix grout in accordance with ASTM C476. Grout shall have a minimum compressive strength of 2000 psi at 28 days.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Build single-wythe walls to nominal thickness shown or specified.
- B. Coordinate with other trades for location and tolerances for building openings.
- C. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped edges. Provide wet-type saw or exhaust dust properly from enclosed areas. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full-size units without cutting wherever possible.
- D. Wet bricks as required to properly reduce suction.
- E. Do not use chipped, damaged, or discolored masonry units in exposed work. Do not use metal reinforcing or ties having loose rust, frost, or other coatings which will reduce or destroy bond.

3.02 MIXING MORTAR AND GROUT

- A. Mixing equipment shall be clean and free of hardened mortar, dirt, and foreign matter.
- B. Accurately measure materials to specified proportions.
- C. Mix mortar and grout in mechanical batch mixer for at least 3 minutes to produce a workable consistency. Hand mixing of mortar is not permitted.
- D. At temperatures below 40 deg. F., heat materials (not greater than 140 deg. F.) to achieve mixture temperature between 50 and 90 deg. F.

3.03 RETEMPERING MORTAR

- A. Mortars that have stiffened because of the evaporation of water from the mortar may be retempered by adding water to restore the required consistency. Mortar shall be used and placed in final position within 1-1/2 hours after initial mixing; discard mortar that has begun to set.

3.04 LAYING MASONRY UNITS

- A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to properly locate openings, movement-type joints, returns, and offsets. Avoid use of less-than-half-size units at corners and jambs, and wherever possible at other locations.
- B. Lay-up walls plumb and true, with courses level, accurately spaced, and coordinated with other work.
- C. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and foundation walls.
- D. Lay brick with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.
- E. Remove masonry units disturbed after laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.
- F. As work progresses, build-in items specified under this and other sections. Fill in solidly with masonry around built-in items.
- G. Fill space between hollow metal frames and masonry with mortar.

3.05 BOND PATTERN

- A. Lay exposed masonry in bond pattern as shown, or if not shown, lay in running bond with vertical joint centered on units in courses above and below. Bond and interlock each course of each wythe at corners. Do not use units with less than 4" horizontal face dimensions at corners or jambs.

3.06 JOINT TREATMENT

- A. Strike joints flush for masonry walls which are to be concealed or to be covered by other materials. Tool exposed joints slightly concave, except tool joints flush within 1" of outlet boxes. Rake out mortar in preparation for sealants. Maintain 3/8" joint width, except for minor variations required to maintain bond alignment.

3.07 ANCHORING

- A. Provide anchoring devices of type shown and as specified. If not shown or specified, provide manufacturer's recommended type for facing and back-up involved.
- B. Anchor masonry to structural members where masonry abuts or faces such members. Provide an open space not less than 1/2" in width between masonry and structural members, unless otherwise shown. Keep open space free of mortar or other rigid materials. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure. Space anchors as shown, but not less than one per 2 sq. ft.
- C. Anchor single-wythe masonry veneer to studs with veneer anchors. Provide an open space not less than 1/2" in width between veneer and sheathing. Space veneer anchors as shown, but not less than one per 2 sq. ft. Provide additional anchors within 12" of openings at intervals of not more than 8" around perimeter.

3.08 CONTROL AND EXPANSION JOINTS

- A. Unless otherwise shown, locate control vertical joints at 50 ft. o.c. and at points of natural weakness in masonry including the following:
 - 1. Above expansion or control joints in supporting structure.
 - 2. Where masonry abuts supporting structure.
 - 3. At a distance equal to 1/2 wall height from corners or intersections with other masonry.

3.09 FLASHING

- A. Provide concealed flashings in masonry work as shown. Prepare masonry surfaces smooth and free from projections which might puncture flashing. Place through-wall flashing on sloped bed of mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar. Terminate flashing 1/4" beyond face of wall, unless otherwise shown.
- B. Extend flashing beyond edge of lintels and sills at least 4" and turn up edge on sides to form pan to direct moisture to exterior.
- C. Provide vents/weep holes in head joints of first course of masonry immediately above concealed flashings. Space 32" o.c., unless otherwise shown.

3.10 REPAIR AND POINTING

- A. Remove and replace masonry units which are loose, chipped, broken, stained, or otherwise damaged, or do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

- B. During joint tooling, enlarge voids or holes, except weep holes, and completely fill with mortar.
- C. Point-up joints at corners, openings, and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
- D. Remove excess mortar as work progresses. Dry brush at end of each day's work.

3.11 FINAL CLEANING

- A. After mortar is thoroughly set and cured, clean sample wall area of approximately 20 sq. ft. in an inconspicuous location using methods described below. After acceptance of sample cleaning, clean remainder of masonry until clean and free of mortar stains.
- B. Dry clean to remove large particles of mortar using wood paddles and scrapers. Use chisel or wire brush if required.
- C. Presoak wall by saturating with water; flush off loose mortar and dirt. Scrub wall with stiff fiber brush using a solution of 1/2 cup of trisodium phosphate and 1/2 cup of detergent dissolved in one gallon of water. Acid cleaning of exterior masonry will not be permitted.
- D. Rinse walls by washing off all cleaning solution, dirt, and mortar crumbs using clean, pressurized water.

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide metal fabrications as shown and as specified.

1.02 FIELD MEASUREMENTS

- A. Take measurements prior to shop fabrication. Allow for trimming and fitting to make field adjustments. Correct defects resulting from failure to take proper measurements.

1.03 SUBMITTALS

- A. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal assemblies. Include product data, load tables, layouts, elevations, details of sections, connections, anchorage and accessory items. Provide templates for anchors and bolts installed under other sections.
- B. Make submittals in accordance with Section 01330.

1.04 SHOP ASSEMBLY

- A. Preassemble and fit items to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly identify units for reassembly and installation.

1.05 INSERTS AND ANCHORAGES

- A. Furnish inserts and anchoring devices to be embedded in concrete or masonry for installation of miscellaneous metal work. Provide setting drawings, templates, and instructions for installation of anchorage devices. Coordinate delivery with related work to avoid delays.

PART 2 PRODUCTS

2.01 STEEL SHAPES, PLATES, AND BARS

- A. ASTM A36; use hot-rolled bars unless cold-finished or cold-rolled stock is designated. Steel plate and sheet shall be ASTM A283, Grade C, or ASTM A570, Grade 36.

2.02 STEEL PIPE

- A. ASTM A53, Grade A, black finish unless galvanizing is designated, standard weight (Sch. 40) unless otherwise designated.

2.03 INSERTS AND ANCHORS

- A. Concrete inserts shall be threaded or wedge type, galvanized castings of malleable iron, ASTM A47, or cast steel, ASTM A27; provide hot-dip galvanized bolts, washers and shims.
- B. Concrete and masonry anchors shall be expansion type, FS FF-S-325, min. 1500 lb. pullout, unless otherwise indicated; ITW Ramset/Red Head, Rawl, Wej-it, or approved equal.

2.04 FASTENERS

- A. Unfinished bolts, nuts and washers shall conform to ASTM A307; unfinished high-strength bolts, nuts and washers shall conform to ASTM A325.

2.05 PRIMER

- A. Rust-inhibitive, lead and chromate free, alkyd or modified alkyd primer, unless otherwise designated in Section 09900. Primer shall be compatible with finish coats specified.

2.06 FABRICATION

- A. Use materials of designated type, size, and thickness or, if not shown, of required strength, stiffness, and durability. Work to field measurements and shop drawings, using proven details of fabrication and support. Miscellaneous framing and support members shall comply with AISC Specification.
- B. Where exposed to view, use materials that are smooth and free of surface blemishes such as pitting, seam marks, roller marks, rolled trade names, and roughness.
- C. Form work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32 in. unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or other impairment. Shearings and punchings shall be clean and true.
- D. Weld corners and seams continuously; comply with AWS recommendations. Grind exposed welds smooth and flush; match and blend with adjoining surfaces. Weld discoloration of exposed surfaces is not acceptable.
- E. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, Phillips flathead (countersunk) screws or bolts.
- F. Provide anchorage devices and fasteners for securing miscellaneous metal items to in-place construction, including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required. Cut, reinforce, drill, and tap miscellaneous metal work as required to receive hardware and connections required by other trades.

2.07 SHOP PAINTING

- A. Shop prime ferrous metal work in accordance with Section 09900, except portions of members to be embedded in concrete or masonry, surfaces and edges to be field

welded, and galvanized surfaces, unless otherwise designated. Prime contact surfaces between dissimilar metals. Coat aluminum in contact with concrete, masonry, and treated wood with primer or bituminous paint.

- B. Prepare steel surfaces exposed to exterior and wet environments by commercial blast cleaning (SSPC SP-6), unless otherwise designated in Section 09900. Prepare all other ferrous metal surfaces by removing scale, loose rust and other deleterious materials by power tool (SSPC SP-3) or commercial blast cleaning (SSPC SP-6). Remove oil, grease, and contaminants by solvent cleaning (SSPC SP-1).
- C. Immediately after surface preparation, apply primer at 2.0 mils dry film thickness in accordance with manufacturer's instructions. Fully cover joints, corners, edges, and exposed surfaces. Apply a second coat of primer (tinted) to surfaces that will be inaccessible after assembly or erection.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install anchorage devices and fasteners for adequate support. Perform cutting, drilling, and fitting, as required. Set work accurately in location, alignment, and elevation, plumb, level, true, and free of rack, measured from established lines. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.
- B. Fit exposed connections to form tight hairline joints. Field weld connections which cannot be shop welded because of shipping size limitations. Comply with AWS Code for manual shielded metal-arc welding, appearance and quality of welds, and methods for correcting welding work. Grind exposed joints smooth and touch-up with shop primer. Do not weld, cut, or abrade surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

3.02 TOUCH-UP PAINTING

- A. Immediately after erection, clean field welds, fasteners, and abraded areas; apply field primer by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Provide finish paint in accordance with Section 09900.

SECTION 06100

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SUMMARY

- A. Provide rough carpentry work as shown and as specified.

1.02 ABBREVIATIONS

ALSC - American Lumber Standards Committee.
APA - APA-The Engineered Wood Association.
AWPA - American Wood Preservers' Association.
SPIB - Southern Pine Inspection Bureau.
USDOC - U.S. Dept. of Commerce.
WCLIB - West Coast Lumber Inspection Bureau.
WWPA - Western Wood Products Association.

1.03 QUALITY ASSURANCE

- A. Wood products shall be factory-marked to identify type, grade, inspection agency, producing mill, and other qualities as specified.

1.04 COORDINATION

- A. Obtain measurements and verify dimensions shown and shop drawing details before proceeding with carpentry work, wherever possible. Correlate location of furring, nailers, blocking, grounds, and similar supports so that attached work will comply with design requirements. Fit carpentry work to other work. Scribe and cope as required for accurate fit.
- B. Time delivery and installation of carpentry work to avoid delaying other trades whose work is dependent on or affected by carpentry work and to comply with protection and storage requirements.
- C. Materials and installation requirements for other work, commonly assigned to carpentry trade, are specified in other sections of these specifications. Contractor is responsible for assignment of such other work to proper trade.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Keep carpentry materials dry during delivery. Store lumber and panels in stacks with provisions for air circulation within stacks. Protect bottom of stacks against contact with damp or wet surfaces. Protect exposed materials against weather. Do not store dressed or treated lumber or panels outdoors. Replace damaged materials.

PART 2 PRODUCTS

2.01 LUMBER

- A. Lumber shall comply with USDOC PS-20 for American Softwood Lumber and with rules of applicable manufacturer's association or authorized inspection bureau under which each species of lumber is produced.
- B. Nominal sizes shown and specified refer to undressed lumber dimensions. Dress lumber four sides (S4S), unless otherwise shown or specified, and work to shapes and patterns shown. Detailed dimensions show actual sizes required.
- C. Load bearing members: Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLIB), or Southern Pine (SPIB) meeting the following design values (in psi):
 - 1. Joists and headers: Not less than 1200 Fb.
 - 2. Studs: Not less than 550 Fc and 1,300,000 E.
- D. Non-load bearing members: "Standard" grade Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLIB), or Southern Pine (SPIB).
- E. Wood for support or attachment of other work such as cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members: "Standard" grade light framing or "No. 2 Common" grade boards of any WWPA, WCLIB, or SPIB species.
- F. Maintain 19% maximum moisture content for all pieces of construction lumber. Mark lumber "DRY."

2.02 PLYWOOD

- A. Plywood shall comply with USDOC PS-1 for Construction and Industrial Plywood.
- B. Plywood sheathing on exterior of building shall be exterior-type, APA Grade CDX, in thickness indicated.
- C. Plywood for interior exposure other than in cabinetry or shelving shall be interior-type, APA Grade A-D or better, in thickness indicated but not less than 1/2".
- D. Plywood for backing in stud walls shall be interior-type, APA Grade C-D Plugged, in thickness indicated but not less than 3/4".

2.03 WOOD PRESERVATIVE TREATMENT

- A. Lumber and plywood designated as "Treated" shall comply with the applicable requirements of AWPA C2 (lumber) and C9 (plywood) and shall bear quality mark of an inspection agency approved by ALSC's Board of Review.
- B. Pressure treat the following items with waterborne preservatives for above ground use to a minimum retention of 0.25 lb./cu. ft.
 - 1. Wood cants, nailers, blocking, stripping, and members in connection with roofing, flashing, concrete, masonry, vapor barriers, and waterproofing.
- C. If wood is cut after treatment, coat cut surfaces with heavy brush coat of same preservative used for treatment in accordance with AWPA M4.

2.04 ROUGH HARDWARE

- A. Provide nails, fasteners, anchors, and similar hardware as designated and as required for proper assembly and erection. Rough hardware shall be of size to rigidly secure members in place.
- B. Where rough carpentry wood is exposed to weather, in ground contact, or in areas of high humidity, provide hot-dip galvanized hardware (ASTM A153).

2.05 SILL SEALER

- A. Fiberglass, 1" thick by 3-5/8" or 6" wide as required to match sill plate width; Certainteed, or approved equal.

2.06 INSULATION BAFFLE

- A. 0.019" pre-molded polystyrene, ceiling insulation hold-back to maintain vent space, with end closure to seal against top plate; Pink Flash insulation baffle by Air Vent, or approved equal.

PART 3 EXECUTION

3.01 WORKMANSHIP

- A. Carpentry work shall be performed by skilled workers. Framing lumber shall be installed level, true, and plumb. Notches, cuts, holes, and other fabrication shall be made clean, even, and true. Carpenter shall inspect framing lumber before installation; lumber with defects that impair quality or safety shall be rejected.
- B. Carpentry exposed to view shall comply with workmanship standards of Section 06200.

3.02 INSTALLATION, GENERAL

- A. Use sound, thoroughly seasoned, well-manufactured materials of longest practical lengths and sizes to minimize jointing.
- B. Use materials free from warp which cannot be easily corrected by anchoring and attachment. Discard warped material and material with defects which impair the quality of work.
- C. Securely attach carpentry work to substrates by anchoring and fastening as shown. Provide washers under bolt heads and nuts in contact with wood. Nail panels to comply with the recommendations of APA. Countersink nail heads on exposed carpentry work and fill holes.
- D. Set carpentry work accurately to required levels and lines with members plumb and true and accurately cut and fitted. Shim with metal or slate for full-bearing on concrete or masonry substrates.
- E. Furnish and erect grounds for installation of other equipment that may be required to properly complete the work. Provide framing around items recessed into walls. Cooperate and coordinate with others of their needs for grounds and furring.

3.03 WOOD FRAMING

- A. Sole plates for walls and partitions shall be single (nom.) 2" thick members.
- B. Unless otherwise noted, studs shall be 2" x 4" @ 16", doubled at sides and heads of openings.
- C. Provide double 2" (nom.) top plates for bearing walls and partitions; provide single top plates for non-bearing walls and partitions.
- D. Plates shall be of same width as studs and shall form continuous horizontal ties. Sole plates shall be secured by anchor bolts to floor slab. Ends of sole plates shall be provided with suitable splice plates, securely nailed in place. Lower members of double top plates shall be nailed to studs and corner posts with two 16d nails at each stud and post. Double top plates shall be nailed together with 10d nails spaced 16" o.c. plus two 10d nails at ends of upper members. Arrange plates so no joint in upper member, including joints at corners of building, occurs over a joint in lower member. Provide trusses or lintels over openings in walls and bearings partitions. Splices in plates shall not occur over openings where plate forms part of a lintel.
- E. Trusses shall be straightened by nailing temporary spacers to top and bottom chords before application of roof sheathing.

3.04 ACCESSORY INSTALLATION

- A. Install appropriate width sill sealer under sill plates at all exterior walls.
- B. Provide insulation hold-back baffles at each truss/joist space with min. 1" clearance below roof deck, unless otherwise shown.

SECTION 06185

PREFABRICATED LAMINATED LUMBER

PART 1 GENERAL

1.01 SUMMARY

- A. Provide prefabricated laminated lumber as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings. Include the items listed below. Do not fabricate units until shop drawings have been reviewed.
 1. Layout drawing indicating location and spacing.
 2. Dimensions and size of members.
 3. Connection details.
 4. Allowable material stresses, wind loads, live loads, and dead loads.
 5. Camber and allowable deflection.
- B. Make submittals in accordance with Section 01330.

1.03 CODES AND STANDARDS

- A. Laminated lumber shall comply with Wis. Adm. Code, ch. COMM 53, and shall be approved for use in Wisconsin.

PART 2 PRODUCTS

2.01 LAMINATED LUMBER

- A. Laminated lumber shall be factory-manufactured utilizing 1/10" or 1/8" thickness Douglas Fir veneer glued up in a continuous process with all grain parallel to the length of the member. Each required member shall be a single one-piece length, free of finger joints, scarf joints, or mechanical connections within the member.
- B. Laminated lumber shall be designed to meet the dimensions.
- C. Provide Trus Joist Microlam, or approved equal.

2.02 ACCESSORIES

- A. Provide anchors, plates, bolts, shear devices, outriggers, and appurtenances to secure laminated lumber to structure.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install laminated lumber and accessories in accordance with shop drawings and manufacturer's instructions.
- B. Provide temporary bracing or false work to maintain safety and structural integrity of members until assembly is in place and final connections are made. Comply with manufacturer's recommendations for bridging and connections.

SECTION 06190

PREFABRICATED WOOD TRUSSES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide pre-engineered, shop assembled wood roof trusses as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings. Include the items listed below. Do not fabricate units until shop drawings have been reviewed.
 - 1. Layout drawing indicating location and spacing.
 - 2. Dimensions and size of members.
 - 3. Connection details.
 - 4. Allowable material stresses, wind loads, live loads, and dead loads.
 - 5. Camber and allowable deflection.
 - 6. Bridging size and spacing.
 - 7. Truss connectors.
- B. Design Calculations: Submit manufacturer design calculations prepared and sealed by a registered professional engineer.
- C. Make submittals in accordance with Section 01330.

1.03 CODES & STANDARDS

- A. Wood trusses shall comply with Wis. Adm. Code, ch. COMM 53.

PART 2 PRODUCTS

2.01 ROOF TRUSSES

- A. Trusses fabricated from stress-graded wood chord and web members as shown.
- B. Trusses shall support a live load of 30 psf and wind load of 20 psf. Determine and support weight of sub-roof, ceiling, and other dead loads. Trusses shall be cambered twice dead load or as recommended by manufacturer. Deflection shall not exceed 1/240 of span.

2.02 BRIDGING

- A. Provide wood diagonal and straight bridging as required to develop full load capabilities of trusses.

2.03 ACCESSORIES

- A. Provide anchors, plates, bolts, shear devices, outriggers, and appurtenances to secure trusses to structure.
- B. Provide 16 ga. galvanized truss connectors to attach trusses to top plate of wall; Simpson TC Truss Connectors, or equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install trusses and accessories in accordance with shop drawings and manufacturer's instructions.
- B. Provide temporary bracing or false work to maintain safety and structural integrity of members until assembly is in place and final connections are made. Straighten trusses by nailing temporary spacers to top and bottom chords before application of decking. Comply with manufacturer's recommendations for bridging and connections.

SECTION 06200

FINISH CARPENTRY

PART 1 GENERAL

1.01 SUMMARY

- A. Provide finish carpentry work as shown and specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings for millwork items.
- B. Make submittals in accordance with Section 01330.

1.03 QUALITY ASSURANCE

- A. Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency identification; except omit marking from surfaces to receive transparent finish, and submit mill certificate that material has been inspected and graded in accordance with requirements if it cannot be marked on a concealed surface.

1.04 QUALITY STANDARDS

- A. Softwood Lumber Standards: Comply with PS-20 and with applicable grading rules of the respective grading and inspecting agency for the species and product indicated.
- B. Hardwood Lumber Standard: Comply with National Hardwood Lumber Association (NHLA) rules.

1.05 DELIVERY, STORAGE & HANDLING

- A. Do not deliver lumber or trim until suitable storage is available on site; take care to avoid moisture buildup. Store in accordance with good practice to avoid warp, damage, soiling and deterioration.

PART 2 PRODUCTS

2.01 LUMBER

- A. Nominal sizes are indicated, except as shown by detailed dimensions. Provide dressed or worked and dressed lumber, as applicable, manufactured to actual sizes as required by PS-20 or to actual sizes and patterns as shown, unless otherwise indicated.
- B. Provide seasoned (KD) lumber having a moisture content from time of manufacture until time of installation not greater than values required by applicable grading rules of respective grading and inspecting agency for species and product indicated.

- C. Provide kiln-dried (KD) hardwood lumber having a moisture content from time of manufacture until time of installation within ranges required in referenced woodworking standard.
- D. Lumber for transparent finish (stained or clear): Use pieces made of solid lumber stock.
- E. Lumber for painted finish: At Contractor's option, use pieces which are either glued-up lumber or made of solid lumber stock.

2.02 WOOD TRIM & FRAMES

- A. Provide lumber complying with the following requirements:
 - 1. Trim, interior: Premium grade, plain sawn red oak.
 - 2. Trim, exterior: Western red cedar, grade B or better, 1 and 2 clear, one face saw-textured.
 - 3. Frames, interior: Clear red oak.
 - 4. Frames, exterior: Ponderosa pine or northern white pine.
- B. Mill to shapes indicated.

2.03 ALUMINUM CLADDING

- A. Aluminum cladding for exposed exterior trim shall comply with the requirements of Section 07710.

2.04 MISCELLANEOUS HARDWARE

- A. Furnish miscellaneous hardware including but not limited to nails, screws, bolts, toggle bolts, staples, masonry anchors, and appurtenances.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Condition woodwork to average prevailing humidity prior to installation.
- B. Install carpentry and woodwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Where woodwork abuts other finished work, scribe and cut for accurate fit. Before making cutouts, drill pilot holes at corners.
- C. Distribute defects (as permitted by specified quality grade) to best over-all advantage.

3.02 INSTALLATION - WOOD TRIM

- A. Install trim in single, unjointed lengths for openings and runs less than 10'. For longer runs, use only one piece less than 10' in any straight run. Stagger joints in adjacent members. Cope at returns and miter corners.
- B. Attach trim securely with uniform joints providing for building movements. Secure woodwork to anchors or blocking built-in or directly attached to substrates.

- C. Blind nail where possible. Use fine finishing nails where exposed. Set exposed nail heads for filling, except for exterior wood which receives natural finish (if any).
- D. Clean woodwork and fill nail holes in preparation for finishes specified under Section 09900. Where woodwork is to receive transparent finish, use matching wood filler.

3.03 CLEAN-UP & ADJUSTMENT

- A. Repair defective work. Adjust and lubricate hardware for proper operation. Clean exposed interior and exterior surfaces. Clean woodwork and touch-up finish as required. Replace damaged areas.

SECTION 06413

WOOD CABINETS - PLASTIC LAMINATED

PART 1 GENERAL

1.01 SUMMARY

- A. Provide plastic laminated wood cabinets and accessories as shown and as specified.
- B. Include countertops, back splashes, shelves, filler panels, and scribe pieces for a complete installation.
- C. Provide custom-built casework when required products are not of manufacturer's standard design.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings of cabinet work. Show layout of all component items in plan view, elevations of all exposed faces, and sectional view of each different type of casework and countertop. Indicate all materials, dimensions, accessories, finishes and fastening to other work. Include cross-references (by article number and paragraph letter) to this Section to facilitate A/E review.
- B. Manufacturer's Specifications: Submit casework manufacturer's specifications indicating compliance with this Section. Where necessary, manufacturer's standard specifications shall be modified to meet the requirements of this Section. Indicate on specification submittal cross-references (by article number and paragraph letter) to this Section to facilitate A/E review. Submit catalog product data sheets for all hardware and accessories. Indicate specific model numbers when applicable.
- C. Color Samples: Submit samples of manufacturer's standard plastic laminate and edging for A/E selection. Colors will be selected from manufacturer's standard stock textured finish colors consisting of both wood grain patterns and solid colors. Up to four different plastic laminate colors may be selected for the project.
- D. Warranty: Submit manufacturer's warranty. Warranty shall indicate commencement date and shall be signed by manufacturer.
- E. Make submittals in accordance with Section 01330. Submittals that do not show compliance with the Drawings and Specifications and/or do not contain required cross-referencing to this Section will be returned without review.

1.03 FIELD MEASUREMENTS

- A. Verify dimensions of cabinet locations in building prior to fabrication. Fabricate countertops for scribe fit.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Prior to delivery, inspect exposed surfaces for subgrade, defective, machine marked, or otherwise damaged pieces.

- B. Deliver to site only when proper storage conditions have been provided. Cabinet work shall be kept protected in delivery cartons or covered with polyethylene film until actual time of installation. Store in dry areas and allow free circulation of air with temperatures between 50 deg. and 75 deg. F.

1.05 WARRANTY

- A. Cabinets shall be warranted by manufacturer for 5 years against defects in materials and workmanship.
- B. Concealed hinges shall have hinge manufacturer's lifetime warranty.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the specified requirements, provide wood cabinets by the following manufacturers or approved equal:

- LSI Corporation of American (L44 series).
 - Compro.
 - Gray Wolf Manufacturing.
 - North American Caseline.

2.02 CABINENTRY PLASTIC LAMINATE

- A. High pressure plastic laminate for exterior cabinet surfaces shall be 0.030" and shall exceed NEMA LD-3 standards for vertical grade.
- B. If a wood grain pattern has been selected, direction of grain shall be vertical on doors, end panels, and exposed backs; horizontal on drawer faces, aprons, and top rails.
- C. Provide putty colored 0.020" gauge plastic laminate backing sheet with textured surface, meeting NEMA standards, and of a type and thickness to properly balance face finish.

2.03 COUNTERTOP PLASTIC LAMINATE

- A. High pressure plastic laminate for countertops shall be 0.050" textured finish or 0.042" post forming grade as detailed.
- B. Color will be selected from manufacturer's standard stock patterns and solid colors.
- C. Provide heavy gauge neutral colored backing sheet for balanced construction.

2.04 PRESSURE FUSED LAMINATE

- A. Pressure fused laminate shall be a melamine resin impregnated, 80 gram PSM minimum, surface laminated to core under pressure and shall meet NEMA LD3.3 GP28 standards and NEMA LD3 CL20 standards.
- B. Laminate shall be balanced at all concealed surfaces with phenolic backer. Unsurfaced coreboard is not allowed.

2.05 PARTICLE BOARD

- A. Particle board shall be of 45 lb. density and balanced construction with moisture content not exceeding 8%. 3-ply particle board shall conform to ANSI A208.1, Type M-3 and shall meet the following performance requirements (3/4" thick board):

Screw Holding, Face	290 lbs.
Screw Holding, Edge	250 lbs.
Modulus of Rupture	2,500 psi.
Modulus of Elasticity	480,000 psi.
Internal Bond	80 psi.
Surface Hardness	900 lbs.

- B. Particle board shall be Georgia Pacific "Microfine Novoply"; or approved equal.

2.06 FIBERBOARD

- A. Multidirectional fiberboard for drawer bodies shall be of uniform density and shall meet the following minimum requirements:

Screw Holding, Face	325 lbs.
Screw Holding, Edge	275 lbs.
Modulus of Rupture	4,500 psi.
Modulus of Elasticity	400,000 psi.
Internal Bond	105 psi.

- B. Fiberboard shall be Williamette Industries, (501) 337-4900; or approved equal.

2.07 HARDBOARD

- A. Hardboard shall meet or exceed Commercial Standard CS-251 and Fed. Spec. LLL-B-810 for tempered hardboard, 1/4" thick, smooth both sides.

2.08 PLYWOOD

- A. Plywood shall be 3/4", exterior grade, 5 ply, pressure treated to 0.40 retention, C/C plug, and touch sanded.

2.09 EDGING

- A. 0.020" Flat PVC: Solid, high impact, purified, color-thru, acid resistant, PVC edging, machine-applied with hot melt adhesives, automatically trimmed face, back, and corners for uniform appearance.
- B. 3 mm thick PVC: Solid, high impact, purified color-thru, acid resistant, pre-lamination primed edging, machine-applied with hot melt adhesives, automatically trimmed, inside/outside length-radiused for uniform appearance, buffed and corner-radiused for consistent design.
- C. Provide 0.020" flat PVC edging to match color of adjacent plastic laminate surface, unless otherwise designated. PVC T-edging will not be acceptable.

2.10 HINGES

- A. Heavy duty, five knuckle, 2-3/4" institutional type hinge. Mill ground, hospital tip, tight pin feature with all edges eased. Hinge shall be full wrap around type, of tempered steel 0.095" thick. Each hinge shall have minimum nine screws, #7, 5/8" FHMS to assure positive door attachment.
- B. At manufacturer's option, provide totally concealed hinges of heavy gauge all metal construction, 200,000 open/close cycle test, with hinge manufacturer's lifetime material replacement warranty. 170 degree swing. Fully adjustable for clockwise, counterclockwise, toe in and out door realignment. Provide base plates to maintain 1/8" reveals between door/drawers within the same cabinet, and between doors of adjoining cabinets. Doors shall be self-closing, and fitted with silencer bumpers.
- C. One pair per door to 48" height. One and one-half pair over 48" in height. Hinge shall accommodate 13/16" thick laminated door, and allow 270 degree swing.
- D. Finish shall be LH-301 dull chrome.

2.11 PULLS

- A. Brushed chrome wire pull, 4".

2.12 DRAWER SLIDES

- A. Standard Drawers: Knap & Vogt No. 1286, epoxy powder coated to match drawer body color, with positive in-stop, out-stop, and out-keeper to maintain drawer in 80% open position (unless full extension slides are indicated). Captive nylon rollers, both front and rear. Minimum 100 lb. dynamic load rating per pair. Provide adjuster cam to regulate body side sway.

2.13 CATCHES

- A. LH-340 6 lb. magnetic catch for base and wall cabinets. Provide two 6 lb. pull at each tall cabinet door. Catch housing to be molded in putty color to match cabinet interior.

2.14 ADJUSTABLE SHELF SUPPORTS

- A. LH-354 twin pin design with anti-tip-up shelf restraints for both 3/4" and 1" shelves. Design shall include keel to retard shelf slide-off, and slot for ability to mechanically attach shelf to clip. Load rating shall be minimum of 300 lbs. each support without failure. Cabinet interior sides shall be flush, without shelf system permanent projection.

2.15 ADJUSTABLE KEYBOARD PADS

- A. Adjustable keyboard pads for attachment beneath a work surface shall adjust from 17" to 22" wide, include a retaining backstop for 5-1/4" to 9" deep keyboards, slide forward 12-3/4" from leading edge of supporting work surface, pivot 360 deg. at support point, adjust 5-1/2" vertically, and have a 15 deg. tilting adjustment up or down from 0 deg. level.
- B. Provide keyboard pads by Haworth, Inc., (800) 344-2600; or approved equal.

2.16 GROMMETS

- A. Grommets shall be 1-1/2" diameter with slot cover unless otherwise noted. Finish shall be selected by A/E.

2.17 CABINET FABRICATION

A. Cabinet Sub-Base:

- 1. Separate and continuous (no cabinet body sides-to-floor), 3/4", water resistant exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type construction, of front, back, and intermediates, to form a secure and level platform to which cabinets are attached.

B. Cabinet Top and Bottom:

- 1. Base and tall cabinet bottoms shall be putty colored pressure fused laminated particle board on interior side, 3/4" thick, with phenolic neutral colored backer sheet on concealed side.
- 2. Solid sub-top shall be 3/4", putty colored, and furnished for all base and tall cabinets.
- 3. Wall cabinet and library stack bottoms and tops shall be 1" thick.
- 4. Exterior exposed wall cabinet bottoms shall be putty colored pressure fused laminate both sides. Assembly devices shall be concealed on bottom side of wall cabinets.
- 5. Exposed body edges shall be flat-edge type in color-matched laminate or PVC.

C. Cabinet Ends:

- 1. Putty colored pressure fused laminated particle board interior side, 3/4" thick, with phenolic neutral colored back sheet on concealed side. Library stack end panels shall be 1" thick. Holes drilled for adjustable shelves shall be 1-1/4" on center.
- 2. Exposed exterior cabinet ends shall be laminated with plastic laminate.
- 3. Exposed edges shall be flat-edge type in color-matched laminate or PVC.

D. Fixed and Adjustable Shelves:

- 1. Putty colored pressure fused laminated particle board two sides. Leading exposed edge of shelves shall be edged with 0.020" flat-edge type PVC, putty in color.
- 2. Standard shelving to 30" wide shall be 3/4" thick. Shelving 30" wide and over shall be 1" thick.
- 3. Shelving in open cabinets, regardless of width, shall be 1" thick.

E. Cabinet Backs:

- 1. Standard cabinet back shall be 3/8" thick, prefinished putty, for use on all cabinets with or without doors. Rear, unexposed, side of back shall receive continuous bead of hot melt adhesive at joint between back and sides/top/bottom for sealing against moisture and vermin, and to further contribute to case rigidity.
- 2. 3/4" thick hang rails shall be glued to rear of cabinet back and screwed to cabinet sides. Provide minimum of 2 at base, 2 at wall, and 3 at tall cabinets.
- 3. Exposed exterior backs shall be 3/4" particle board faced with high pressure plastic laminate.

F. Door and Drawer Fronts:

- 1. Plastic laminated doors and drawer fronts shall be 13/16" thick for all hinged and sliding doors. Core material shall be 3/4" thick particle board bonded on exterior with high pressure plastic laminate and with putty colored heavy gauge balancing

sheet on interior face. Drawer fronts and hinged doors shall overlay the cabinet body. Maintain a maximum 1/8" reveal between pairs of doors, between door and drawer front, and between multiple drawer fronts within cabinet.

2. Exposed edges shall be 3mm thick PVC. Corners shall be machine-radiused and buffed to a consistent 3mm radius. Both outer and inner edges of edging shall be machine-radiused and buffed for consistent profile.
3. Stile and rail doors shall be 13/16" thick plastic laminate door with 1/4" plate glass, hinged or sliding as indicated. All exposed lite-opening edges shall be trimmed and glazed with extruded vinyl glazing bead.

G. Drawers:

1. Drawer fronts shall be applied to separate drawer body component subfront.
2. Sides and back of drawers shall be 1/2" thick putty colored pressure fused laminated fiberboard. Sub-front shall be 5/8" thick of same material. Particle board drawer construction will not be accepted.
3. Exposed top edge shall be 0.020" flat-edge type PVC, putty in color.
4. Drawer sides shall be dadoed to receive front and back, machine squared and held under pressure while hotmelt glued and pinned together.
5. Drawer bottom shall be putty colored pressure fused laminate surface, 1/4" thick, housed into front, sides, and back. Underside of drawer shall receive continuous hot melt adhesive at joint between bottom and back/sides/front for sealing and rigidity. Reinforce drawer bottoms as required with intermediate spreaders.
6. All drawers shall have roller guides as specified above.
7. Drawers over 29" wide shall have two pulls.

H. Vertical and Horizontal Dividers (one of the following):

1. Tempered hardboard 1/4" thick, smooth both faces. Secured in cabinet with molded plastic clips.
2. Putty colored pressure fused laminated particle board 3/4" thickness. Secured in cabinet with molded plastic clips or dowels. Front edge shall be 0.020" flat-edge type PVC, putty in color.

I. Door/Drawer Spreaders:

1. Minimum 3/4" x 6" x full width putty finished cabinet body spreaders immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, and close off reveal. Front edge shall be 0.020" flat-edge type PVC, color to match cabinet body edge.

2.18 COUNTERTOPS - GENERAL PURPOSE

- A. High pressure plastic laminate bonded to particle board core. Thickness as indicated. Underside shall be properly balanced with heavy gauge backing sheet. Edges shall be high pressure plastic laminate to match horizontal surface color. Furnish countertops in design as shown on Drawings. Provide continuous tops for counter type cabinets fixed in a line.

2.19 WORKMANSHIP

- A. All exposed exterior cabinet surfaces shall be V32 decorative high pressure plastic laminate, color as selected from casework manufacturer's standards. Laminate surface/backer to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination. Natural-setting adhesives that

cure through chemical reaction are required. Methods requiring heat are not allowed; "contact" methods of laminating are not allowed.

- B. Cabinet parts shall be accurately machined and bored for premium grade quality joinery construction utilizing automatic machinery to insure consistent sizing of modular components.
- C. End panels shall be doweled to receive bottom and top. Back panel shall be fully housed into, and recessed 3/4" from back of cabinet sides, top, and bottom to insure rigidity and a fully closed cabinet.
- D. Drawer bottom shall be fully housed into, and recessed up 1/2" from bottom of sides, back, and subfront. Sides of drawer shall be fully dadoed to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners.
- E. 3/4" thick hang rails shall be glued to backside and screwed to end panels of all wall, base, and tall cabinets for extra rigidity and to facilitate installation.
- F. Rear of cabinet back and underside of drawer bottom joints shall receive a continuous bead of hotmelt adhesive to add to unit body strength and develop moisture and vermin seal.
- G. All cases shall be square, plumb, and true.
- H. Casework construction abutting adjacent construction shall have scribe strips allowing accurate field fitting of mating surfaces.

PART 3 EXECUTION

3.01 CABINET INSTALLATION

- A. Erect casework straight, level, and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc. Wall fasteners shall be within cabinet; exposed exterior fasteners are not permitted.
- B. Install all items completely and adjust all moving parts to operate properly.
- C. Leave surfaces clean and free from defects at time of final acceptance.

3.02 COUNTERTOPS

- A. Fabricate countertops in accordance with manufacturer's specifications. Countertops shall be supplied complete with intermediate and end supports fabricated and finished to match countertop and all surfaces covered with plastic laminate. Supply clip angles, anchor bolts, and screws required for mounting.

3.03 CLEAN UP

- A. Remove cartons, debris, sawdust, scraps, etc. and leave spaces clean, with casework ready for Owner's use.

SECTION 07210
BUILDING INSULATION

PART 1 GENERAL

1.01 SUMMARY

- A. Provide building insulation work as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for each type of insulation. Include data substantiating compliance with specified requirements.
- B. Make submittals in accordance with Section 01330.

1.03 REGULATORY REQUIREMENTS

- A. Comply with fire-resistance and flammability ratings indicated and as required by State Code. Comply with code interpretations by governing authorities.

1.04 DELIVERY, STORAGE & HANDLING

- A. Do not allow insulation materials to become wet or soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection.

PART 2 PRODUCTS

2.01 EXTRUDED POLYSTYRENE BOARD INSULATION (RIGID INSULATION)

- A. Extruded closed-cell polystyrene with integral high-density skin complying with ASTM C578, Type X, minimum 15 psi compressive strength, thermal resistance (R-value at 40 deg F) of 5.4 per 1 in. thickness.

2.02 FIBERGLASS BATT INSULATION

- A. Glass fiber blankets with integral kraft paper vapor barrier or separate vapor barrier as specified below, complying with ASTM C665, type I unfaced or type II faced; thermal performance of R-13 per 3-1/2 in. thickness. Unfaced blanket shall be non-combustible as determined by ASTM E136.

2.03 VAPOR BARRIER

- A. 6 mil sheet polyethylene, clear, for exterior wall and roof surfaces; vapor barrier may be integral with batt insulation (above).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Extend insulation full thickness as shown over entire surface. Cut and fit tightly around obstructions, and fill voids with insulation and mastic.
- B. Comply with manufacturer's recommendations for particular conditions of installation. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.
- C. Apply a single layer of insulation of required thickness, unless otherwise shown or as required to make up total thickness.
- D. Use extruded polystyrene where insulation is in contact with soil.
- E. Mastics used with polystyrene insulations shall be approved for use by insulation manufacturer.

3.02 VAPOR BARRIER INSTALLATION

- A. Install polyethylene vapor barrier on warm side of exterior wall and ceiling insulation. Vapor barrier shall be continuous and complete. Tape all projections thru barrier to form a seal. Lap all joints 6 in. Tape joints and edges at ceiling and at floor.

3.03 MISCELLANEOUS INSULATION

- A. Insulate miscellaneous voids and cavity spaces as designated. Apply vapor barrier where necessary to prevent infiltration of outside air.

SECTION 07310

SHINGLES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide shingles as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit product data and installation instructions for each major roofing product. Include manufacturer's certification or other data to substantiate compliance with these specifications.
- B. Samples: Submit actual samples of roof finish and exposed metal components; samples will be reviewed for color and texture only.
- C. Warranty: Submit written warranty as specified below.
- D. Make submittals in accordance with Section 01330.

1.03 QUALITY ASSURANCE

- A. Provide materials and roofing systems which have been tested, listed, and labeled by UL for "Class C" rating.

1.04 WARRANTY

- A. Shingles shall have a 25 year limited written warranty against manufacturing defects.

PART 2 PRODUCTS

2.01 SHINGLES

- A. Organic-felt-based asphalt roof shingles with ceramic mineral granule surface, ASTM D225, Type I, 12" x 36", 3 tab, min. 225#/square, 5" exposure, self sealing.

2.02 NAILS

- A. Large head, hot-dip zinc coated steel or aluminum roofing nails as recommended by shingle manufacturer; length shall be sufficient to penetrate deck min. 1/2".

2.03 MOISTURE BARRIER

- A. 40 mil polymer-modified asphalt membrane bonded to polyethylene sheeting; Grace/Ice and Water Shield, Owens-Corning/Deck-Dri, or approved equal.

2.04 ASPHALT SATURATED FELT

- A. ASTM D226, 30# type.

2.05 METAL ROOF EDGE

- A. Prefinished metal roof edge to support butt end of first row of shingles and to provide drip at roof perimeter.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Examine substrates and notify in writing of defects. Do not install shingles until defects are corrected.
- B. Install metal roof edge along eaves with moisture barrier on top. Along rakes, install moisture barrier first with metal edge on top.
- C. Install moisture barrier in accordance with manufacturer's instructions, with primer if required. Provide moisture barrier from eaves to a line not less than 24" inside of exterior wall. Provide 36" wide moisture barrier at valleys and ridges. Provide moisture barrier at junctions with higher walls only when moisture barrier is shown protected by metal counterflashing. Balance of roof shall receive single layer of underlayment felt lapping each course 2".
- D. Install shingles in accordance with manufacturer's printed instructions using nails. Stapling of shingles will not be allowed.

SECTION 07412

METAL WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide metal wall panels as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating areas to be covered with metal panels, fabrication details, and installation information. Include product data and instructions for metal panels and accessories.
- B. Color Samples: Submit samples of each type of metal panel. Samples shall show extreme range of exposed color and texture to be expected. Samples will be reviewed for the color and texture only. Compliance with other requirements is exclusive responsibility of the Contractor.
- C. Warranty: Submit written warranty for panel finish.
- D. Make submittals in accordance with Section 01330.

1.03 WARRANTY

- A. Furnish manufacturer's 10 year written warranty covering failure of factory-applied exterior finish on metal panels.

PART 2 PRODUCTS

2.01 METAL WALL PANELS

- A. Metal wall panels shall match wall panels on Government's adjacent maintenance building that was constructed in 1982. Maintenance building panels are Star Building Systems Dura-Rib panels in a "Buckskin" color. Equivalent panels of other manufacturers are acceptable.
- B. Panels shall be constructed of 24 ga galvanized or aluminum-zinc alloy coated steel, with a siliconized polyester finish.
- C. Panels shall be 36 in. wide and shall have 1-1/2 in. high (maximum) major ribs 12 in. o.c. with two minor ribs symmetrically spaced between the major ribs. Panel sidelaps shall be formed by lapping major ribs at panel edges. Underlapping rib shall have full bearing legs to support sidelap. Panels shall be fabricated to full height shown.
- D. Provide manufacturer's standard wall panel trim, including but not limited to base flashing, closure trim, sealants, and fasteners.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install metal panels in accordance with manufacturer's directions, shop drawings, and as shown. Provide integral system for control of expansion and contraction of panels. Panels shall be set plumb and secured so they do not rattle.

3.02 CLEAN-UP

- A. Upon completion, clean panels to remove construction staining and dirt, and repair defects which might detract from visual appearance of panels.

SECTION 07710

ROOF SPECIALTIES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide roof specialties as shown and specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit details of products to be furnished, including joints, attachments, connections to adjoining work, protrusions, and penetrations.
- B. Color Samples: Submit samples of prefinished metal products for color selection.
- C. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 FASCIA AND SOFFITS

- A. Fascia: 0.024" aluminum sheet with polyester baked enamel finish.
- B. Soffits: Preformed 0.019" aluminum with polyester baked enamel finish, ribs approximately 4" on center, and minimum 8.8 sq in net free area per lin ft.
- C. Trim and Accessories: Provide miscellaneous trim, accessories, and fasteners as required to complete installation of products. Fasteners shall be aluminum, factory finished on exposed surfaces to match fascia and soffit, sized to penetrate wood a minimum of 3/4 inch, type to suit conditions.

2.02 RAIN GUTTERS AND DOWNSPOUTS

- A. Residential-type, min. 0.019" aluminum gutters with prefabricated inside and outside corners, downspout outlet, end caps, joint connectors and hangars. Joints and end caps shall be made watertight with sealant as recommended by manufacturer.
- B. Min. 4" x 5" rectangular aluminum downspouts with elbows, tailpiece, and support devices. Use only non-rusting fasteners.
- C. Provide manufacturer's baked enamel finish.

2.03 RIDGE VENT

- A. Fabricate of 0.019" thick sheet aluminum with baffles to prevent snow and rain entering and weepholes to allow water to drain to roof. Vent shall have minimum net free area of 16 sq. in. per lin. ft. Provide splice plates and end caps as required.
- B. Vent shall be offered in a variety of colors to allow a close match to roof shingles.

2.04 MISCELLANEOUS CLADDING

- A. Fabricate miscellaneous cladding from 0.019 in. aluminum with polyester baked enamel finish.

2.05 CAULKING

- A. See Section 07900.

PART 3 EXECUTION

3.01 INSTALLATION - FABRICATED ITEMS

- A. Install fabricated work and appurtenances with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves, and avoidable tool marks, considering temper and reflectivity of metal. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant. Except as otherwise shown, fold back sheet metal to form a concealed hem on exposed edges.
- B. Conceal fasteners and expansion provisions wherever possible in exposed work and locate to minimize possibility of leakage. Cover and seal work as required for a tight installation.
- C. Install products with proper allowance for expansion and contraction of materials so as to prevent electrolysis between dissimilar metals and to provide a watertight construction.

3.02 INSTALLATION - MANUFACTURED ITEMS

- A. Install manufactured items in accordance with manufacturer's instructions. Meet or exceed performance criteria listed above for general sheet metal work.

3.03 JOINTS

- A. Provide for thermal expansion of items exposed for more than 15'-0" continuous length. Maintain a watertight installation at expansion seams. Locate expansion seams as shown or, if not shown, at 10'-0" intervals and 2'-0" each side of corners and intersections.
- B. Where sealant-filled expansion joints are used, embed hooked flanges of joint members not less than 1" into sealant. Form joints to completely conceal sealant. When ambient temperature is 40-70 deg. F., set joint members for 50% movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant type joints at temperatures below 40 deg. F.

3.04 CLEANING

- A. Upon completion, thoroughly clean exposed sheet metal by methods recommended by manufacturer.

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide joint sealer work as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, recommendations and installation instructions for each type of sealant, caulking compound and associated materials.
- B. Certificates of Compliance: Submit letter of certification or certified test laboratory report that each type of sealant complies with requirements and is intended for applications shown.
- C. Color Samples: Furnish color charts and actual material color samples; color will be selected from manufacturer's colors.
- D. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 GENERAL BUILDING SEALANT

- A. Urethane, one-part, air curing, elastomeric sealant, complying with ASTM C920, Type S, Grade NS, Class 25; Tremco Dymonic, Pecora Dynatrol I, Sika Sikaflex 1a, Sonneborn Sonolastic NP1, or approved equal.

2.02 TOILET ROOM SEALANT

- A. For plumbing fixtures, provide white silicone rubber, mildew-resistant; GE SCS 1702, Dow Corning 786, or approved equal.

2.03 ACCESSORIES

- A. Provide joint cleaner, primer/sealer, bond breaker tape, and sealant backer rod as recommended for the type of application by sealant manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide sealing and caulking to produce weathertight conditions throughout. Caulk around exterior and interior masonry openings. Seal construction joints as shown. Joints shall be caulked before painting adjacent work.

B. Comply with manufacturer's installation instructions.

SECTION 08110

STEEL DOORS & FRAMES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide steel doors and frames as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating location, elevation of door, frame type (wall thickness and corners), materials, methods of assembling, requirements for hardware, joints, and connections.
- B. Make submittals in accordance with Section 01330.

1.03 QUALITY ASSURANCE

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames" ANSI/SDI-100 and as herein specified.
- B. Wherever fire-resistance classification (hour rating or classification) is shown or scheduled, provide fire-rated steel doors and frames that are tested, listed, and labeled by Underwriters Laboratories, Inc. (UL). Identify each fire door and frame with UL labels indicating applicable fire rating of both door and frame.

PART 2 PRODUCTS

2.01 DOORS

- A. Interior steel doors shall be 1-3/4" thick, constructed of commercial quality cold rolled full pickled, sheet steel face panels (min. 18 ga.), spot welded to 20 ga. internal stiffeners. Fill inner core with manufacturer's standard core material. Top and bottom of doors shall have continuous steel channel welded to face plates. Provide min. 14 ga. steel reinforcement for locks and surface applied hardware, and 3/16" thick reinforcement for mortise hinges, with factory drilling and tapping for hardware. Joints shall be welded and ground smooth. Provide rigid vinyl top cap.
- B. Exterior doors shall be similar to interior doors with min. 16 ga. face panels, full thickness polystyrene insulated core, and integral seal, inverted channel or suitable shapes welded to face sheets at top and bottom edges to seal doors from weather, with door tops closed flush.
- C. Clearance for doors, except fire doors, shall be 1/8" at jambs and heads, 1/8" at meeting stiles of doors, 3/4" between bottom of doors and finished floor and 3/8" between bottom of door and top of threshold unless indicated otherwise. Verify clearance requirements for floor coverings. Provide clearance for fire doors as required by Underwriters' Laboratories.

2.02 WELDED STEEL FRAMES

- A. Provide welded steel frames for doors conforming to size and shape as shown.
- B. Fabricate frames of prime quality cold rolled steel, 16 ga., except 14 ga. for single openings exceeding 3'-6" in width and exterior frames.
- C. Frame joints shall be mitered or butted and continuously arc-welded for full depth and width of frame, with welds on exposed surfaces dressed smooth and flush.
- D. Frames shall be provided with removable spreaders securely fastened to bottom of jambs, 3/16" thick steel reinforcement for mortise hardware, and 12 ga. steel reinforcement prepared at factory for surface-applied hardware. Frame shall be punched for silencers and for hardware from templates furnished by hardware supplier. Cut-outs shall be protected with dust covers.
- E. Reinforce joints between members with concealed clip angles of same thickness as frame. See Drawings for additional reinforcing of frame.

2.03 STOPS

- A. Doors and frames receiving fixed glass shall be equipped with plain rectangular steel stops and trim as required. Screws shall be countersunk, flat Philips head type.
- B. Unless specifically shown otherwise, frames shall be designed with loose stops on interior or room side of frame.

2.04 FABRICATION

- A. Manufacturer shall provide cut-outs as required, closed with channel or plate, and reinforced as required. Confirm hardware requirements before fabrication and make adjustments required to accommodate hardware specified.
- B. Frames shall be mortised and reinforced for hardware. Mortised hardware reinforcements shall be factory-drilled and tapped. Surface applied hardware may be field drilled.

2.05 FINISH

- A. Clean steel doors and frames of rust, dirt, grease, oil and foreign substances. Apply and bake-on 1 coat of rust inhibitive primer. Fill irregularities and apply an additional coat of manufacturer's standard primer, baked on. Finish paint shall be applied under Section 09900.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Install frames and doors in accordance with shop drawings, manufacturer's recommendations, and as specified herein. Hardware shall be installed under Section 08710.

3.02 FRAMES

- A. Erect hollow metal frames in a straight, plumb, true, and secure manner. Provide bracing to hold frames in proper place until built into structure or partition where shown. No less than 3 anchors shall be installed at each jamb of each frame for securing frame to wall construction.
- B. Type of anchorage items shall be determined by wall and head construction and as recommended by frame manufacturer. Anchor each jamb and mullion to floor through standard or special attached clip angles, using 1/4" expansion bolt or 1/4" power driven stud. Do not remove angle spreaders until entire installation is complete.

3.03 DOORS

- A. Install doors with equal width spaces on each side, to fit snugly without binding. After doors are fitted, remove them to allow painter to finish tops and bottoms as well as faces and edges. Rehang doors in proper manner.

SECTION 08262

PREHUNG STEEL DOORS AND WOOD FRAMES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide prehung steel door and wood frame units as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating location, elevation of door, frame type (wall thickness and corners), materials, methods of assembling, requirements for hardware, joints, and connections.
- B. Make submittals in accordance with Section 01330.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Units shall be individually wrapped or cartoned for protection in transit and storage and shall be marked by tags matching shop drawings identification. Units with scratches, gouges, or other noticeable defects will be rejected and shall be replaced with acceptable units meeting these specifications.

PART 2 PRODUCTS

2.01 STEEL DOORS

- A. Provide 1-3/4" thick doors of design shown. Door slab shall be a laminated sandwich of polyurethane insulation and steel having a minimum R-value of 11.5. Door shall be surrounded on four edges by wood stiles and rails with additional wood blocking for lock and other hardware reinforcement. Steel skins shall be specially formed on edges to produce a thermal break to prevent thermal transmission from cold side to warm side. Steel shall be 24 ga. minimum, extra smooth, with both surfaces hot-dip zinc galvanized and bonderized. Top and bottom edges of door slab shall be turned back for additional rigidity. Bottom edge shall be covered with integral bottom sweep. Lock side door edge shall have 3 deg. bevel and hinge side door edge shall be drilled for fully-mortised hinges.
- B. Door shall have a factory-applied, rust-inhibitive primer.

2.02 WOOD FRAMES

- A. Provide kiln dried, toxic treated soft wood jamb and outside casing, compression type weatherstrip, and adjustable sill/threshold. Nominal frame width shall be 4-9/16" using jamb extenders between jamb and outside casing. Frame thickness shall be nominally 1-1/4" on all lock, head, and hinge jambs. Include exterior brick mould.
- B. Edges and sides of frame shall be factory primed.

2.03 HARDWARE

- A. Provide 1-1/2 pair butt hinges in a satin chromium, BHMA 626 finish; Stanley FBB 179 4-1/2 x 4-1/2, or equal.
- B. Sills shall be constructed of extruded aluminum with solid block of wood installed in sill cavity for extra support across entry. Exposed wood shall be prefinished oak. Sill shall have adjustable saddle which can be adjusted up or down.
- C. See Section 08710 for additional hardware.

2.04 DOOR GLASS

- A. Where indicated, doors shall receive insulating glass. Insulating glass shall be 5/8 in. total thickness, with inner and outer tempered panes and dehydrated air space.
- B. Tempered glass panes shall be ASTM C1048, Kind FT (fully tempered), Condition A (uncoated), Type I (transparent, flat), Class 1 (clear), Quality q3 (glazing select), in thickness as recommended by insulating glass manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Install frames and doors in accordance with shop drawings, manufacturer's recommendations, and as specified herein. Additional hardware shall be installed under Section 08710.

3.02 FRAMES

- A. Erect frames in a straight, plumb, true, and secure manner. Provide bracing to hold frames in proper place until built into structure or partition where shown. No less than 3 anchors shall be installed at each jamb of each frame for securing frame to wall construction.
- B. Type of anchorage items shall be determined by wall and head construction and as recommended by frame manufacturer.

3.03 DOORS

- A. Install doors with equal width spaces on each side and fit snugly without binding.
- B. After doors are fitted, remove them to allow painter to finish tops and bottoms as well as faces and edges. Rehang doors in proper manner.

3.04 HARDWARE

- A. Attach blocking as required to bottom of sill system to provide proper spacing between door bottom and top of finished floor. In cases where flooring material is other than 3/4" thickness, adjust to match sill to flooring.

3.05 PROTECTION

- A. Provide in-place protection for door and frame faces as required to prevent damage.

SECTION 08264

PREHUNG WOOD DOORS AND FRAMES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide prehung wood door and wood frame units as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating location, elevation of door, frame type (wall thickness and corners), materials, methods of assembling, requirements for hardware, joints, and connections.
- B. Make submittals in accordance with Section 01330.

1.03 QUALITY ASSURANCE

- A. Comply with the following standards:
 - 1. NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors", of National Wood Window and Door Association (NWWDA).
 - 2. AWI Quality Standard: "Architectural Woodwork Quality Standards", including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Units shall be individually wrapped or cartoned for protection in transit and storage and shall be marked by tags matching shop drawings identification. Units with scratches, gouges, or other noticeable defects will be rejected and shall be replaced with acceptable units meeting these specifications.

PART 2 PRODUCTS

2.01 SOLID CORE FLUSH WOOD DOORS

- A. Provide 1-3/4" thick doors of design shown.
- B. Door construction shall be PC-5 (particleboard core, 5-ply).
- C. Provide plain sliced red oak premium grade veneer faces of manufacturer's standard thickness.
- D. Cross bands shall be oven-dried hardwoods extending full width of door and laid with grain at right angles to face veneers.
- E. Stile edge bands shall be a 2-ply edge band laminated to core on four sides in accordance with AWI 1300-G-3, with water resistant adhesives. Outer stile shall be

compatible with face veneers. Provide 2-ply hardwood rails. Stiles and rails shall be minimum 1-3/8" after milling.

- F. Bond face veneers and crossbands to core with waterproof adhesive conforming to NWWMA.
- G. Door shall be factory prepped to receive hardware specified in Section 08710. Provide reinforcement as required to eliminate through bolting of hardware.

2.02 WOOD FRAMES

- A. Doors shall be prehung on a solid oak jamb, machined to receive a rabbeted stop with 1-1/2 pair of butt hinges. Jamb sections shall be dadoed and screwed in place, rabbeted stops shall be mitered and tacked in place. Frame shall be factory prepped to receive hardware specified in Section 08710.

2.03 DOOR LOUVERS

- A. Furnish and install door louvers (grilles) of size as indicated; see architectural Drawings and schedules.
- B. Louvers shall be 60 deg. chevron type, sight-proof, cold rolled steel, 20 ga. frame and blades in prime finish, flush face frame both sides of door and adjustable with a nominal 1-1/8" louver depth.

2.04 HARDWARE

- A. Provide 1-1/2 pair butt hinges in a satin chromium, BHMA 626 finish; Stanley FBB 179 4-1/2 x 4-1/2, or equal.
- B. See Section 08710 for additional hardware.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Install frames and doors in accordance with shop drawings, manufacturer's recommendations, and as specified herein. Additional hardware shall be installed under Section 08710.

3.02 FRAMES

- A. Erect frames in a straight, plumb, true, and secure manner. Provide bracing to hold frames in proper place until built into structure or partition where shown. No less than 3 anchors shall be installed at each jamb of each frame for securing frame to wall construction.
- B. Type of anchorage items shall be determined by wall and head construction and as recommended by frame manufacturer.

3.03 DOORS

- A. Install doors with equal width spaces on each side and fit snugly without binding.
- B. After doors are fitted, remove them to allow painter to finish tops and bottoms as well as faces and edges. Rehang doors in proper manner.

3.04 PROTECTION

- A. Provide in-place protection for door and frame faces as required to prevent damage.

SECTION 08360

SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide sectional overhead doors as shown and as specified.

1.02 DESIGN REQUIREMENTS

- A. Design doors to withstand 20 lbs. per sq. ft. wind load with a maximum deflection of 1/200 of door width in horizontal position.

1.03 SUBMITTALS

- A. Shop Drawings and Product Data: Submit shop drawings and product data for all assemblies and accessories; partial submittals will not be acceptable. Include complete wiring diagrams for required installation of conduit, boxes, and power wiring.
- B. O/M Literature: Submit manufacturer's operation and maintenance instructions.
- C. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the specified requirements, provide doors manufactured by Overhead Door Co., McKee Door Co., Wayne Dalton, or approved equal.

2.02 STEEL DOORS (FOAMED INSULATION)

- A. Doors shall be sectional, upward acting, 1-5/8" thick. Sections shall be constructed from galvanized corrosion-resistant embossed sheet steel no less than 0.016" (27 ga.) thick.
- B. Door sections shall be manufactured by a continuous foamed-in-place polyurethane lamination process resulting in a homogeneous sandwich of even-textured polyurethane insulation (density 3.12 lbs./ft.³) of metal/foam/metal construction to form a section of specified thickness. Sections shall be roll-formed incorporating a thermal break preventing heat or cold conductivity.
- C. Joints between sections shall be designed with round horizontal links to eliminate accumulated water from flowing down the inside of the door when opened.
- D. Sections shall be equipped with 16 gauge steel end caps for bracket and end hinge attachment.
- E. Provide bake-on polyester factory prime finish, white color.

2.03 TRACK, SUPPORTS AND ACCESSORIES

- A. Provide manufacturer's standard galvanized steel track system, sized for door size, weight and clearances shown. Provide normal headroom track assembly unless otherwise shown, including brackets, bracing and reinforcing for rigid support of ball bearing roller guides. Provide continuous wood jambs or steel angles mounted to wood or steel jambs as shown, fully adjustable for sealing door against jamb.

2.04 HARDWARE

- A. Provide heavy-duty, rust-resistant hardware, with galvanized or cadmium plated steel or stainless steel fasteners.
- B. Provide heavy wrought steel hinges at each stile.
- C. Provide heavy duty, case hardened steel, ball bearing type rollers of size to suit size of track.

2.05 WEATHERSTRIPPING

- A. Provide flexible neoprene or vinyl weatherstrip seal at bottom of door and at head and jambs.

2.06 COUNTERBALANCING MECHANISMS

- A. Counterbalance doors with adjustable medium duty tempered torsion springs on continuous ball bearings and steel cross header shaft. Provide tempered drums and galvanized steel lifting cables having minimum safety factor of 5.

2.07 ELECTRIC DOOR OPERATORS

- A. Provide trolley type electric operator at each overhead door, sized and rated for the door.
- B. Operator shall have roller chain drive, adjustable friction clutch, quick disconnect for emergency operation. Motor shall be separate from reduction mechanism for ease of maintenance.
- C. Limit switch shall be furnished to limit travel in the full open and closed position.
- D. Operator shall be powered by an instant reversing, high torque, totally enclosed motor of sufficient horsepower to satisfactorily operate door at a rate of 8" to 12" per second. Motor shall have permanently lubricated type bearings. Motor shall be protected against burn-out by an automatic resetting, inherent over-heat, over-current thermal protector.
- E. Motor shall be rated for min. 1/3 hp, 115 volts, 60 Hz., 1-phase; manufacturer shall verify motor horsepower.
- F. See Drawings and Division 16 for wiring requirements.

2.08 PUSH BUTTON STATIONS

- A. Provide surface-mounted three button momentary contact type for open-close-stop. Provide push button station at each door, where shown, with NEMA 4 push button enclosure.

2.09 SAFETY EDGE

- A. Provide switches at bottom edge of electric-operated doors for protection against unexpected interruption in door down cycle.

2.10 RADIO CONTROLS

- A. Provide radio control; 2 transmitters and 2-button interior safety control.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine substrates and conditions and notify in writing of conditions detrimental to proper and timely completion of work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports in accordance with shop drawings, manufacturer's recommendations, and as specified.
- B. Fasten vertical track assembly to framing at not less than 24" o.c. Hang horizontal track from structural overhead framing with angle or channel hangers, welded or bolt-fastened in place. Provide sway bracing, diagonal bracing, and reinforcing as required for rigid installation of track and door operating equipment.
- C. Electrical contractor will bring power to operator and make final power connection. This contractor shall be responsible for providing controls and low voltage (max. 24 v.) control wiring.
- D. Upon completion of installation, including appurtenant work by other trades, lubricate, test, and adjust doors to operate smoothly, free from warp, twist, or distortion and weathertight for entire perimeter.

SECTION 08620

PLASTIC-CLAD WOOD WINDOWS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide plastic-clad wood windows as shown and as specified.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings and product data. Include wall elevations, unit elevations, and half-size section details of every typical composite member including glazing.
- B. Color Samples: Submit color samples of exterior cladding and hardware for selection.
- C. Warranty: Submit written warranty as specified below.
- D. Make submittals in accordance with Section 01330.

1.03 WARRANTY

- A. Non-Glass Components: All non-glass portions of windows shall be warranted to be free from defects in manufacturing, materials, and workmanship for a period of 10 years from the date of first purchase.
- B. Glass: Glass in factory-glazed sash panels shall be warranted to be free from manufacturing defects for 10 years from the date of first purchase or from glass manufacturing date. Insulating glass shall be warranted not to develop, under normal conditions, any material obstruction of vision resulting from manufacturing defects or as a result of premature failure of the glass or organic seal.

PART 2 PRODUCTS

2.01 WINDOWS, GENERAL

- A. Frames and sash shall consist of water-repellant treated wood covered with rigid vinyl. Sash shall be factory glazed. Corners of sash shall be welded. No seams shall be allowed on frame units. Thickness of vinyl cladding as follows:
 - Sash - 0.045".
 - Frame - Min. 0.020".
 - Flanges - 0.040".
- B. Provide jamb extensions as required for type of wall construction. All exterior trim shall match finish of frame and sash. Windows shall be furnished with hardware attached.
- C. Provide metallic screen in aluminum frame for all operable sash.

- D. Units shall be factory glazed with high performance Low-E double pane insulating glass.

2.02 WINDOWS - OPERATING

- A. Provide casement windows in quantities and sizes as indicated on Drawings. Hardware shall be manufacturer's standard roto-operator and sash lock.

- B. Provide the following or approved equal:

Andersen "Perma-Shield" Casement.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install wood window units, hardware, accessories, and other components of the work in accordance with manufacturer's recommendations and approved shop drawings.
- B. Set units plumb, level, and true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place. Refer to other sections of joint filter and sealants required for installation.
- C. Adjust operating sash and hardware to provide a smooth operation with tight, weatherproof closure. Lubricate hardware and moving parts.

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.01 SUMMARY

- A. Provide door hardware as shown and as specified.
- B. The extent of door hardware is shown on drawings and in schedules. Door hardware is defined to include all items known commercially as finish or builders' hardware which is required for doors, except special types of hardware specified in same section as door and frame. Examine drawings and other sections of specifications for related work.

1.02 SUBMITTALS

- A. Product Data: Submit 2 copies of manufacturer's product data for each item of door hardware. Include information to show compliance with specified requirements.
- B. Hardware Schedule: Submit 4 copies of final hardware schedule. Final hardware schedule shall be based on door hardware requirements as indicated. Coordinate hardware with doors, frames, and related work to ensure proper size, thickness, swing, function, and finish of hardware. Organize hardware schedule into "hardware sets", indicating complete designation of every item required for each door or opening. Submit schedule at earliest possible date, in order to facilitate fabrication of other work (such as steel frames).
- C. Keying Schedule: Submit 4 copies of separate key schedule showing how Government's instructions on keying of locks has been fulfilled.
- D. Templates: Furnish hardware templates to each fabricator of doors, frames, and other work to be factory-prepared for installation of hardware. Upon request, check shop drawings of such other work to confirm that adequate provisions are made for proper installation of hardware.
- E. Make submittals in accordance with Section 01330. Hardware schedules are intended for coordination of the work. Review and acceptance by Contracting Officer does not relieve Contractor of its exclusive responsibility to fulfill requirements as shown and as specified.

1.03 FIRE RATED OPENINGS

- A. Provide hardware for fire-rated openings in compliance with NFPA 80. Provide only hardware which has been tested and listed by UL for types and sizes of doors required, and complies with requirements of door and door frame labels.

1.04 PRODUCT HANDLING

- A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions in package. Deliver individually packaged hardware items at proper times and locations (shop or field) for installation.

- B. Provide secure lockup for hardware delivered to project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of work will not be delayed by hardware losses.

1.05 GUARANTEE

- A. Closers, overhead holders, and locksets shall be guaranteed for a period of 2 years from date of substantial completion. Other items shall have standard 1 year guarantee.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Products identified in this Section by reference to a specific manufacturer and product name/number are identified for the purpose of establishing a standard of quality, type, and function. Unless otherwise indicated, products of the following manufacturers, or approved equal, may be substituted for those listed, provided the substitution is equal in quality, type, and function and meets the specified requirements:

Butts and Hinges: Stanley, Hager, McKinney.

Closers: Corbin Russwin, LCN, Norton, Sargent, Yale.

Locksets, Dead Locks: Corbin Russwin, Sargent, Schlage, Yale.

Thresholds and Weatherstripping: Zero, Reese, Pemko.

Kickplates: Corbin Russwin, Schlage, Hiawatha, Brookline, Quality, Ives, Burns, Rockwood.

2.02 BASE METALS

- A. Produce hardware units of basic metal indicated, using manufacturer's standard metal alloy, composition, temper and hardness.

2.03 FORMING

- A. Form base metal into required shapes and sizes by manufacturer's standard production method for class or quality of hardware units required.

2.04 FASTENERS

- A. Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- B. Furnish screws for installation with each hardware item. Provide Phillips flathead screws, except as otherwise indicated. Finish exposed screws to match hardware finish.
- C. Provide concealed fasteners for hardware units which are exposed when door is closed. Do not use through bolts for installation where bolt head or nut on opposite face is exposed under any condition.

- D. Provide fasteners which are compatible with both unit fastened and substrate, and which will not cause corrosion or deterioration of hardware, base material or fastener.

2.05 FINISHES

- A. Match finish of hardware units at each door or opening to greatest extent possible. In general, match finish of latch and lockset (or push-pull units if no latch-lock sets) for color and texture.
- B. Designations used in schedules and elsewhere to indicate hardware finishes are those of ANSI/BHMA A156.18 "Materials & Finishes" and traditional U.S. finishes used by certain manufacturers.

2.06 KEYING

- A. Hardware supplier shall meet with Contracting Officer to develop a keying schedule. Key locks in accordance with Government's instructions. Provide 2 keys with each lock and furnish 6 master keys.

PART 3 EXECUTION

3.01 HARDWARE MOUNTING HEIGHTS

- A. Mount hardware units at heights recommended in "Recommended Locations for Builders Hardware" by the Door and Hardware Institute, except as otherwise specifically indicated or required to comply with governing regulations.

3.02 INSTALLATION

- A. Install hardware items in compliance with manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished, install each item completely and then remove and store in a secure place. After completion of finishes, reinstall each item.
- B. Provide solid wood blocking behind wall stops, magnetic holders, and other hardware items mounted on adjacent studwall partitions.
- C. Adjust and check each operating item of hardware and each door, to ensure proper operation or function. Lubricate moving parts with type of lubrication recommended by manufacturer; use graphite-type if no other type is recommended. Replace units which cannot be adjusted and lubricated to operate freely and smoothly.
- D. Instruct Government's personnel in proper operation and maintenance of hardware and hardware finishes during final adjustment of hardware.

PART 4 SCHEDULES

4.01 HARDWARE SCHEDULE

Note: Identical items of hardware shall be furnished by one manufacturer.

Group 1 – Exterior

1-1/2 Pair Butts: By Section 08262	
1 Deadlock: Corbin Russwin DL2013	626
1 Passage Set: Corbin Russwin CL3310 x AZD	626
1 Closer: Corbin Russwin DC2210 x A5	689
1 Threshold: By Section 08262	
1 Set Weatherstrip: By Section 08262	
1 Sweep: By Section 08262	
1 Kickplate: 8" x 2" L.D.W.	630
1 Latch Guard: Precision Hardware No. 1627 (or equal by Latch-Gard)	Prime

Group 2 – Interior Garage

1-1/2 Pair Butts: By Section 08262	
1 Lockset: Corbin Russwin CL3355 x AZD	626
1 Threshold: By Section 08262	
1 Set Weatherstrip: By Section 08262	
1 Sweep: By Section 08262	
1 Kickplate: 8" x 2" L.D.W.	630
1 Wallstop	

Group 3 – Office, Dayroom, Equipment

1-1/2 Pair Butts: By Section 08264	
1 Lockset: Corbin Russwin CL3351 x AZD	626
1 Wallstop	

Group 4 – Private Restroom

1-1/2 Pair Butts: By Section 08264	
1 Privacy Lock: Corbin Russwin CL3320 x AZD	626
1 Wallstop	

Group 5 - Utility Room

1-1/2 Pair Butts: Stanley FBB 179 4-1/2 x 4-1/2	626
1 Lockset: Corbin Russwin CL3355 x AZD	626
1 Threshold: Reese S204A	Alum.
1 Set Weatherstrip: Reese 961 (jambs); Reese 755 (head)	DUR
1 Sweep: Reese 967	DUR
1 Kickplate: 8" x 2" L.D.W.	630
1 Wallstop	

SECTION 09260

GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide gypsum board systems as shown and as specified.

1.02 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery to minimize storage periods at project site. Deliver materials in accordance with manufacturer's instructions; ship unopened containers or packages, fully identified with manufacturer's name, brand, type and grade. Store boards flat with uniform support. Protect from weather and damage as recommended by manufacturer.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - GYPSUM BOARD

- A. Products identified in this Section by reference to a specific manufacturer and product name/number are identified for the purpose of establishing a standard of quality, type, and function. Unless otherwise indicated, gypsum board products and accessories of the following manufacturers or approved equal may be substituted for those listed, provided the substitution is equal in quality, type, and function and meets the specified requirements:
Georgia-Pacific (G-P).
National Gypsum/Gold Bond Building Products Div.
U. S. Gypsum (USG).

2.02 GYPSUM BOARD - INTERIOR

- A. Exposed Board Surface: 5/8" thick gypsum wallboard unless otherwise indicated, complying with ASTM C36, with paper face surface suitable to receive decorated finish and long edges tapered to receive standard joint treatment, in lengths as required for minimum number of joints.

2.03 GYPSUM BOARD - FIRE RATED

- A. Gypsum wallboard, ASTM C36, Type "X", 5/8" thick, unless otherwise indicated, with paper face surface suitable to receive decorated finish and long edges tapered to receive manufacturer's standard joint treatment, unless otherwise shown.

2.04 GYPSUM BOARD FASTENERS

- A. Provide type and size recommended by manufacturer for applications shown. Review fire-rated assembly requirements for fastener spacing. In general, fasten gypsum board with self-drilling screws designed for gypsum board, ASTM C1002.

- B. Screws shall be self-tapping when used with metal framing up to 12 gage. Heads shall be designed for covering with finishing compound if exposed in face layers.

2.05 GYPSUM BOARD METAL TRIM ACCESSORIES

- A. Provide trim accessories of sizes required for applications shown, fabricated of galvanized steel, complying with ASTM C1047 as follows:
 - B. External Corners: Metal corner bead with smooth rigid nose and perforated and knurled metal flanges.
 - C. Control Joints: Where shown and as required in Part 3 Execution, one-piece joint assembly of non-corrosive metal or extruded vinyl with continuous unperforated V-slot for insertion into joint and perforated flanges for attachment to face of gypsum board with slot opening covered with removable strip.
 - D. Where face panels abut dissimilar materials, at reveals, and where designated: Shaped metal trim designed to be concealed by taping operations; USG No. 200-B metal trim, Fry Reglet FDM-625, or approved equal.
 - E. Exposed panel edges and where designated: J-shape casing beads designed to be concealed by taping.

2.06 JOINT TREATMENT MATERIALS

- A. Joint Tape: Plain or perforated paper, ASTM C475.
- B. Joint Compound: Factory-prepackaged vinyl based products, ASTM C475. Provide in dry powder form for mixing with water at jobsite or factory pre-mixed, for single or two-compound treatment.
 - 1. Taping compound shall be formulated for embedding tape and first coat over fasteners and flanges of corner beads and edge trim.
 - 2. Topping compounds shall be formulated for fill (second) and finish (third) coats.
 - 3. All purpose compounds shall be formulated for use as both taping and topping compounds.

2.07 GYPSUM BOARD PRIMER

- A. USG "Sheetrock First Coat", Gold Bond "Drywall Primer", or approved equal. Paint primers, as specified in Section 09900 Painting, will not be accepted as equal to this product.

PART 3 EXECUTION

3.01 INSTALLATION OF GYPSUM BOARD

- A. Comply with ASTM C840, unless otherwise recommended by gypsum board manufacturer.
- B. Examine substrates and conditions; notify of detrimental conditions. Do not proceed until unsatisfactory conditions are corrected.

- C. Do not exceed 1/8" in 8'-0" variation from plumb or level in line or surface; except at joints between units, do not exceed 1/16" variation between planes of abutting edges or ends. Shim as required to comply with specified tolerances.
- D. Provide additional framing and blocking as required to support gypsum board at openings and cutouts, and to support built-in anchorage and attachment devices for other work.
- E. Form control joints in gypsum board construction where indicated below. Allow 1/2" continuous opening between edges of adjacent drywall boards to allow for insertion of control joint trim accessory.

3.02 SINGLE LAYER GYPSUM BOARD APPLICATIONS

- A. Partition/Walls: For heights of 8'-1" or less, apply gypsum board vertically or horizontally at contractor's option. For heights greater than 8'-1" or for areas less than 4' wide, apply vertically. Use floor-to-ceiling length boards for vertical applications and locate edge joints over supports, but offset at least one stud on opposite faces of partition/walls. Use maximum practical length boards for horizontal applications and locate end joints over supports and stagger in alternate courses of board.
- B. Ceilings: Apply gypsum board with long dimension at right angles to supports with end butt joints located over supports. Use maximum practical length boards to minimize end butt joints. Stagger end joints in alternate courses of boards and locate as far away from center of ceiling as possible.
- C. Supports: Fasten gypsum board with screws. Comply with manufacturer's instructions for fastening, but do not exceed 12" o.c. spacing.

3.03 CONTROL JOINTS

- A. Gypsum panel surfaces shall be isolated with control joints where:
 - 1. Partition abuts a structural element (excepts floor) or dissimilar wall or ceiling.
 - 2. Ceiling abuts a structural element, dissimilar wall or partition, or other vertical penetration.
 - 3. Construction changes within plane of partition or ceiling.
 - 4. Partition or furring run exceeds 30 ft.
 - 5. Wings of "L", "U" and "T"-shaped ceiling areas are joined.

3.04 GYPSUM BOARD FINISHING

- A. Do not install joint treatment compounds unless conditions comply with minimum temperature and ventilation requirements recommended by manufacturer. Finish exposed gypsum board surfaces with joints, corners, and exposed edges reinforced or trimmed as specified, and with joints, fasteners, accessory flanges, and surface defects filled with joint compound in accordance with manufacturer's recommendations for a smooth, flush surface. Gypsum board finishing work will not be considered acceptable if corners or edges do not form true, level, or plumb lines, or if joints, fastener heads, flanges of accessories, or defects are visible after application.

3.05 GYPSUM BOARD PRIMER

- A. Apply full coverage coat of gypsum board primer to all painted walls and ceilings in accordance with manufacturer's instructions. For both smooth surface finished and textured walls and ceilings, gypsum board primer shall be applied to equalize porosity and surface texture differences between finished joint compound and gypsum board face paper. Apply primer evenly, free of runs, sags and other blemishes.
- B. This contractor shall be responsible for providing additional sanding as required after gypsum board primer has dried. This additional sanding is required to eliminate any surface texture differences that may have been caused by oversanding joint compound areas and raising nap on gypsum board paper facings. This contractor shall be solely responsible to provide a uniform texture surface on all gypsum surfaces ready for application of paint primer by painting contractor.

3.06 PROTECTION

- A. Comply with proper procedures for protection of completed gypsum board work from damage or deterioration until acceptance of work.

SECTION 09340

PORCELAIN TILE PAVERS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide porcelain tile pavers as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit product data and installation instructions. Include certifications and other data to show compliance with these specifications.
- B. Samples: Submit samples of each type, class, and color of tile and trim. Samples will be reviewed for color, pattern and texture only; compliance with all other requirements is Contractor's responsibility.
- C. Make submittals in accordance with Section 01330.

1.03 QUALITY ASSURANCE

- A. Provide tile pavers certified by Tile Council of America (TCA) to equal or exceed ANSI A137.1, "Standard Grade". Comply with TCA specifications for installation of ceramic tile.
- B. Provide materials obtained from one source for each type and color of tile paver.

1.04 DELIVERY & STORAGE

- A. Deliver materials and store on site in original containers with seals and labels intact until used.

1.05 EXTRA MATERIALS

- A. Supply an extra 2% of total quantity of each tile and trim. Place in clean marked cartons for Owner's use.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Tile shall be of domestic manufacture unless noted otherwise. Products identified in this Section by reference to a specific manufacturer and product name/number are identified for the purpose of establishing a standard of quality, type, and function. Unless otherwise indicated, products of the following manufacturers or approved equal may be substituted for those listed, provided the substitution is equal in quality, type, and function and meets the specified requirements:

American Olean.
 Daltile.
 U.S. Ceramic Tile.

2.02 UNPOLISHED CERAMIC TILE PAVERS

- A. 8" x 8" porcelain tile, unpolished speckled color, American Olean Terra-Paver.
- B. Tile shall have a wet and dry coefficient of friction of not less than 0.60.
- C. Provide trim to match tile as follows:
 - 1. Base: 6" high x 8" surface cove base, American Olean S-3689T.
 - 2. Base, inside corners: 6" high x 1" surface cove in corner, American Olean SB-3689T.
 - 3. Base, outside corners: 6" high x 1" surface cove out corner, American Olean SC-3689T.

2.03 SETTING MATERIALS

- A. Dry Set Mortar: Comply with ANSI A118.1, gray or white as required; American Olean Dry-Set Mortar, or equal.

2.04 GROUTING MATERIALS

- A. Tile Paver Floors and Base: Commercial, sanded portland cement grout; color to be selected.

2.05 PROTECTIVE MATERIALS

- A. Neutral cleaner such as American Olean General Purpose Cleaner, Hillyard Super Shine-All or equal.
- B. Heavy duty non-staining construction paper with compatible masking tape.

PART 3 EXECUTION

3.01 EXAMINATION OF SURFACES

- A. Inspect substrates for condition and maximum variations shown below:

	<u>Walls</u>	<u>Floors</u>
Dry-Set Mortar	1/8" in 8'	1/8" in 10'

- B. Report unacceptable surfaces. Surfaces to be tiled shall be free from coatings, curing membranes, oil, grease, wax, and dust. Do not proceed until unsatisfactory conditions are corrected.

3.02 LAYOUT

- A. Determine location of movement joints. Lay out tile work to minimize cuts less than one-half tile in size. Locate cuts in both walls and floors to be least conspicuous. Extend tile wainscots to next full tile beyond dimensions shown.
- B. Align wall joints to give straight uniform grout lines, plumb and level. Floor joints shall form straight uniform grout lines, parallel with walls. Make joints between tile sheets same width as joints within sheets so extent of each sheet is not apparent in finished work.

3.03 TILE INSTALLATION, GENERAL

- A. Use products in strict accordance with manufacturer recommendations. Proportion mixes in accordance with applicable ANSI 108-series standards.
- B. Extend tile work into recesses and under equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disruption of pattern or joint alignments.
- C. Smooth exposed cut edges; clean cut edges before installing tiles. Fit tile carefully against trim and around pipes, electric boxes, and other built-in fixtures so that escutcheons, plates, and collars will completely overlap cut edges.
- D. When using glazed tile sheets, minimize tearing sheets apart by drilling pipe holes as much as possible.

3.04 SETTING METHODS

- A. Provide setting beds as shown or, when not indicated, use applicable TCA installation specifications for setting and grouting materials specified.

3.05 GROUTING

- A. Grout in accordance with manufacturer's recommendations.

3.06 CLEANING

- A. Clean tile surfaces thoroughly after grouting. Remove grout film, observing tile manufacturer's recommendations for chemical cleaners. Rinse tile work thoroughly with clean water before and after using chemical cleaners. Polish surface of tile work with soft cloth.

3.07 PROTECTION

- A. Protect tile work with heavy duty construction paper or other material to prevent damage. Prohibit construction traffic from using newly tiled areas.
- B. Upon Substantial Completion, tile work shall be complete and free from defects. Repair damaged work to match adjacent surfaces.

SECTION 09663

VINYL BASE

PART 1 GENERAL

1.01 SUMMARY

- A. Provide vinyl base as shown and as specified.

1.02 SUBMITTALS

- A. Color Samples: Submit color samples of vinyl base. Color will be selected by A/E from manufacturer's standard colors.
- B. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 VINYL BASE

- A. FS SS-W-40, Type II, matte finish, homogeneous vinyl, 4" high, min. 0.080" thick, with integral cove.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prior to installation of vinyl base work, broom clean or vacuum surfaces to be covered and inspect substrates. Prepare substrates as recommended by flooring manufacturer. Notify in writing of unsatisfactory conditions. Start of installation indicates acceptance of substrate conditions.
- B. Maintain space at min. 70 deg. F. for 48 hours prior to installation. Cure concrete min. 28 days and until dry. Maintain 70 deg. F. temperature during and until 48 hours after installation.
- C. Fill voids, cracks, and depressions with appropriate material and remove ridges as recommended by manufacturer to achieve a smooth, level, and uniform installation.
- D. Tightly cement resilient work to substrates without open cracks, voids, raising, and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections.
- E. Remove exposed adhesive and blemishes using neutral type cleaners as recommended by manufacturer. Protect installed materials from damage by construction traffic.

3.02 INSTALLATION - BASE

- A. Apply base to walls, columns, pilasters, casework, and other permanent fixtures where base is required. Install base in lengths as long as practicable. Fabricate corners from base material. Neatly scribe to casings and trim. Tightly bond base to backing throughout length of each piece, with continuous contact at horizontal and vertical surfaces.
- B. On masonry and other irregular surfaces, fill voids along top edge of base with manufacturer's recommended adhesive/filler material.

SECTION 09680

CARPET

PART 1 GENERAL

1.01 SUMMARY

- A. Provide carpet and accessories as shown and as specified.

1.02 SUBMITTALS

- A. Samples: Submit complete colorways and samples of accessories for color selection.
- B. Certificate of Compliance: Submit certification from manufacturer that carpet meets specified static, flame, and smoke density requirements.
- C. O/M Instructions: Submit 2 copies of manufacturer's written instructions for maintenance and care of carpeting.
- D. Warranty: Submit manufacturer's written warranty.
- E. Make submittals in accordance with Section 01330.

1.03 WARRANTY

- A. Carpet shall be warranted as follows:
 - 1. Wear: No more than 10% face yarn loss by weight in normal use. 10 years (minimum).
 - 2. Static: Meets specified static requirements. Lifetime of carpet.
 - 3. Edge Ravel: Guaranteed no lengthwise seam edge ravel in normal use (no seam sealers required). 10 years (minimum).
 - 4. Delamination: Guaranteed no delamination in normal use (no chair pads required). 10 years (minimum).
 - 5. Tuft Bind: Guaranteed 20 lb. average tuft bind, wet or dry, as tested in accordance with ASTM D1335. Lifetime of carpet.

1.04 EXTRA MATERIALS

- A. Furnish an additional 90 sq. ft. of each type and color of carpet installed. Individual pieces shall have a minimum size of 3 ft. x 3 ft. Securely wrap and label each type and color.

PART 2 PRODUCTS

2.01 CARPET

- A. Provide carpet in quantities and width to fit spaces as shown, free from defects, with uniform color and texture.

- B. Carpet shall be Lees "Faculty Classics", Karastan-Bigelow "Stati-Tuft Weldlok", or approved equal constructed as follows:
 - 1. Construction: Tufted level loop.
 - 2. Fiber: 100% DuPont Antron Legacy nylon with Dura Tech soil protection.
 - 3. Dye Method: Yarn.
 - 4. Face Weight: 26 oz./sq. yd. (min.).
 - 5. Total Weight: 64 oz./sq. yd. (min.).
 - 6. Gauge: 1/8".
 - 7. Stitches Per Inch: 8.3 (min.).
 - 8. Pile Height: 0.187" (min.).
 - 9. Primary Backing: Woven polypropylene.
 - 10. Secondary Backing: Woven polypropylene.
 - 11. Width: 12 ft.

- C. Carpet shall meet the following performance requirements:
 - 1. Static : 3.5 KV (max.) when tested under the Standard Shuffle Test at 70 deg. F. and 20% R.H.
 - 2. Flammability: Passes DOC-FF-1-70 Pill Test.
 - 3. Flame Radiant Panel Test: Meets NFPA Class 1 when tested under ASTM E648 glue down.
 - 4. Smoke Density: NBS Smoke Chamber NFPA 258, less than 450 Flaming Mode.

- D. Carpet color will be selected from a minimum of ten (10) standard colors. A maximum of 1 color will be selected.

2.02 CARPET EDGE GUARD

- A. Manufacturer's standard extruded solid vinyl or rubber carpet edge guard at all carpet terminations adjacent to other floor finishes.

- B. Provide integral color finish, as selected from manufacturer's standard finishes.

2.03 ADHESIVE FOR CARPET

- A. Adhesive as recommended by manufacturer, complying with manufacturer's warranty requirements. Provide adhesive which complies with flame spread rating required for carpet installation, if any.

2.04 MISCELLANEOUS MATERIALS

- A. Provide types of seaming tape, thread, nails, adhesives, and other accessories recommended by carpet manufacturer for conditions of installation and use, without failure during life of carpet.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

- A. Inspect subfloor; notify of defects. Do not proceed until conditions are acceptable.

- B. Sweep and vacuum substrate immediately prior to carpet installation, and remove all deleterious substances which would interfere with installation or be harmful to work.

Remove oil and grease using commercial cleaner. Review substrate with straight-edge device. Remove ridges and protrusions; fill cracks and depressions in substrate over 1/16" with latex filler or patching sealer.

- C. Comply with manufacturer's instructions and recommendations. Place seams as indicated on shop drawings. Maintain direction of pattern and texture, including lay of pile. Do not seam weft to warp, unless otherwise approved.
- D. When abutting existing carpet, recut existing carpet edge as required to provide a tight seam to new carpet.
- E. Extend carpet under open-bottom and raised-bottom obstructions, and under removable flanges of obstructions. Extend carpet into closets and alcoves of rooms indicated to be carpeted, unless another floor finish is indicated for such spaces. Extend carpet under all movable furniture and equipment, unless otherwise indicated.
- F. Provide cutouts as indicated for removable access devices in substrate. Bind edges neatly and secure both sides of cuts to substrate. Use double-faced tape on carpet cutouts which must be lifted from the substrate to gain access to devices, unless otherwise indicated. Cut only three sides wherever it is feasible to provide a carpet flap in lieu of a fully removable cutout.
- G. Install carpet edge guard at every location where edge of carpet is exposed to traffic, except where another device, such as an expansion joint cover system or threshold, is indicated with an integral carpet binder bar.

3.02 GLUE-DOWN INSTALLATION

- A. Cut and fit sections of carpet into each space prior to application of adhesive.
- B. Apply adhesive in accordance with manufacturer's instructions. Butt carpet seams and edges tightly together, eliminate air pockets, and roll to ensure uniform bond everywhere. Cement edges of backing together in accordance with manufacturer's instructions.
- C. Remove adhesive from face of carpet and adjacent surfaces promptly upon exposure.

3.03 CLEANING AND PROTECTION

- A. Remove debris from installation, carefully sorting pieces to be saved from scraps to be disposed of.
- B. Vacuum carpet with a commercial machine with rotating agitator in nozzle. Remove soiled spots.
- C. Protect carpet from soil and damage until Substantial Completion. Recommend type of non-staining cover material that should be used for protective cover.

SECTION 09900

PAINTING

PART 1 GENERAL

1.01 SUMMARY

- A. Provide painting as shown and as specified.

1.02 RELATED SECTIONS

Primer for miscellaneous metals - Div. 5.
Primer for steel doors & frames - Div. 8.

1.03 WORK INCLUDED

- A. Work includes painting and finishing items and surfaces throughout the project as designated on Drawings, in Schedules, and in Specifications.
- B. Paint all surfaces exposed to view whether or not colors are designated in "schedules", except where natural finish is obviously intended or specifically noted. Where items or surfaces are not specifically mentioned, finish to match adjacent similar materials or areas.
- C. Work includes field painting of bare and covered pipes and ducts, hangers, exposed ferrous metal work, and primed and prefinished metal surfaces of equipment installed under mechanical and electrical work in finished areas only, except as otherwise specified.
- D. Examine work of other trades and become thoroughly familiar with provisions regarding painting of their work. Paint or finish all exposed surfaces and equipment left unfinished by other provisions of these specifications.

1.04 WORK NOT INCLUDED

- A. Shop Priming: Unless otherwise specified, shop primer coats are included under various sections for miscellaneous metal, steel doors and frames, and shop-fabricated or factory-built mechanical and electrical equipment, accessories, and similar items.
- B. Prefinished Items: Unless otherwise indicated, do not paint factory-finished or prefinished items, such as (but not limited to) metal toilet enclosures, acoustic materials, light fixtures, and non-public utility area mechanical and electrical equipment.
- C. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces in concealed inaccessible areas such as foundation spaces, furred areas, pipe spaces, and duct shafts.
- D. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials do not require finish painting, except as otherwise indicated.

- E. Operating Parts: Do not paint moving parts of operating units, sliding and bearing surfaces, and mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, and motor and fan shafts, unless otherwise indicated.
- F. Labels: Do not paint over code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.05 DEFINITIONS

- A. "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.
- B. SSPC - Steel Structures Painting Council.
ASTM - American Society for Testing & Materials.

1.06 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, including label analysis and application instructions for each material specified.
- B. Color Charts: Furnish color charts of proposed products for selection.
- C. Make submittals in accordance with Section 01330.

1.07 DELIVERY, STORAGE & PROTECTION

- A. Deliver materials in original, unopened packages and containers bearing labels as follows:
 - Name or title of material.
 - Fed. Spec. number, if applicable.
 - Manufacturer's stock number.
 - Manufacturer's name.
 - Contents by volume, for major pigment and vehicle constituents.
 - Thinning instructions.
 - Application instructions.

PART 2 PRODUCTS

2.01 PAINT & COATINGS

- A. Subject to compliance with the specified requirements, provide products by one of the following, or approved equal:
 - Pratt and Lambert Paints (P & L).
 - Sherwin-Williams Paints.
 - Benjamin Moore Paints.
 - PPG Industries, Inc. (Pittsburg Paints).
 - Coronado Paints.
- B. Contractor shall submit a specific list of products it wishes to use if manufactured by a company other than that noted in Painting Schedules.

- C. Refer to Drawings and Painting Schedules for finishes and coating systems to be applied to various surfaces throughout project.
- D. Contractor shall bear responsibility for compatibility of shop primers and field-applied finish coatings. When shop primer and finish coats are products of different manufacturers, manufacturer of finish coats shall certify in writing to the compatibility of products, or shall recommend a suitable barrier or intermediate tie coat to be applied prior to finish coats. Otherwise, provide recommended undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and within recommended limits.
- E. Provide best quality grade of coatings as regularly manufactured by approved paint manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

PART 3 EXECUTION

3.01 SUBSTRATE EXAMINATION

- A. Examine substrates and surfaces and conditions under which work is to be performed. Notify in writing of any conditions detrimental to performance of this work. Do not proceed with this work until unsatisfactory conditions have been corrected; starting of painting work will be construed as acceptance of surface and conditions within any particular area.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.02 SURFACE PREPARATION

- A. Perform preparation procedures for each substrate in strict accordance with paint manufacturer's instructions and as specified.
- B. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove mounted accessories if necessary for complete painting of items or adjacent surfaces. Following completion of painting of each space or area, reinstall removed items using workmen skilled in trades involved.
- C. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.
- D. Prepare cementitious surfaces of concrete block to be painted by removing all efflorescence, chalk, dust, dirt, grease, oils and by roughening as required to remove glaze.
- E. Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other approved sealer, before application of priming

coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried. Wipe off adhering dust.

- F. Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of SSPC, unless blast cleaning is indicated elsewhere.
- G. Clean galvanized surfaces with nonpetroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

3.03 MATERIAL PREPARATION

- A. Prepare painting materials in accordance with manufacturer's directions. Mix materials before application to produce uniform density. Stir as required during application of materials. Do not stir surface film into material; remove film and, if necessary, strain material before using.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.

3.04 APPLICATION

- A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for type of material being applied.
- B. Apply additional coats when undercoats, stains or other conditions show through final coat of paint; paint film shall be of uniform finish, color and appearance.
- C. Paint surfaces behind movable equipment and furniture to match exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
- D. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
- E. Finish exterior doors on tops, bottoms and side edges the same as exterior faces, unless otherwise shown.
- F. Sand lightly between each succeeding enamel or varnish coat.
- G. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise specified.

3.05 PROTECTION

- A. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damages by cleaning, repairing or replacing, and repainting.

- B. 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.

3.06 CLEAN-UP

- A. During progress of work, dispose of discarded paint materials, rubbish, cans and rags. Upon completion of painting work, clean all paint-spattered surfaces by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

PART 4 SCHEDULES

4.01 PAINTING SCHEDULES, GENERAL

- A. Provide the following coating systems for the various substrates indicated. Named products are specified to establish a standard of type and quality. See article "Paint & Coatings" for acceptable manufacturers.
- B. Contractor shall include in its bid the painting of an accent colored wall in each room or space. Contracting Officer will indicate accent painted walls on color schedule when issued to Contractor during construction. Contracting Officer will select from one to three different accent colors for this project.

4.02 EXTERIOR PAINTING SCHEDULE

Ferrous Metal & PVC - Unprimed, Galvanized & Prefinished, including metal and PVC stacks & vents, galvanized flashings, equipment supports, mechanical piping, conduit, electrical equipment, panelboards, meter boxes, miscellaneous metal items:

1 coat P & L Effecto Rust Inhibiting Primer*.

2 coats P & L Effecto Enamel (alkyd, flat).

*For galvanized surfaces, use 1 coat P & L Galvanized Metal Latex Primer. Omit primer on prefinished surfaces, unless required as barrier coat.

Ferrous Metal - Primed & Prefinished, including miscellaneous metal fabrications, steel doors, overhead doors, guard posts:

Touch up bare metal with primer.

2 coats P & L Effecto Enamel (alkyd, gloss).

Wood - Painted, including trim:

1 coat P & L Permalize Exterior Primer.

2 coats P & L Vapex House Paint (latex, flat).

4.03 INTERIOR PAINTING SCHEDULE

Gypsum Board, including walls, soffits, and ceilings:

- 1 coat P & L Vapex Wall Primer.
- 2 coats P & L Aqua-Satin (latex-enamel, satin).

Ferrous Metal - Adjacent or Near to Painted Surfaces, including factory-primed and baked-enamel-prefinished, grilles, louvers, ductwork, conduit, piping, electrical panel covers, baseboard radiation, convector cabinets, access covers, equipment enclosures, raceways and similar appurtenances:

Paint to match adjacent or near surfaces, except as designated below.

Ferrous Metal - Primed & Prefinished, including steel doors, steel frames, overhead doors, miscellaneous steel fabrications:

- Touch up primer.
- 2 coats P & L Effecto Enamel (alkyd, gloss).

Hardwood - Stained, including unfinished doors and frames hardwood trim:

- 1 coat P & L Tonetic Wood Stain.
- 1 coat P & L Sanding Sealer.
- 2 coats P & L 38 Clear Finish (alkyd-natural/stain, satin).

SECTION 10440

SIGNS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide sign work as shown and as specified.
- B. Provide signs as designated on Drawings.

1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings, product data sheets, and schedules. Indicate type of sign, materials, dimensions, colors, graphics, and method of attachment.
- B. Color Charts: Submit chart of color combinations for selection.
- C. Make submittals in accordance with Section 01330.

1.03 REGULATORY REQUIREMENTS

- A. Signs shall comply with the Americans with Disabilities Act (ADA) of 1990.

1.04 DELIVERY, STORAGE & HANDLING

- A. Ship sign materials including attachment devices carefully packaged to prevent surface damage. Include shop drawings to insure correct installation and arrangement of all materials.

PART 2 PRODUCTS

2.01 SIGNS, GENERAL

- A. Signs which designate permanent rooms and spaces shall meet the following general requirements:
 - 1. Characters shall be raised 1/32" and shall be accompanied with Grade 2 braille.
 - 2. Raised characters shall be of height designated or shown, but not less than 5/8" (16 mm), nor more than 2" (50 mm).
 - 3. Pictograms, where designated, shall be accompanied by equivalent verbal description placed directly below pictogram. Border dimension of pictogram shall be 6" (152 mm) minimum in height.
- B. All signs shall meet the following general requirements:
 - 1. Characters and background of signs shall be eggshell, matte, or other non-glare finish.
 - 2. Characters shall contrast with their background - either light characters on a dark background or dark characters on a light background.

- C. Where specific text height and sign size requirements are specified below, those specific requirements shall govern over these general requirements.

2.02 SIGNS

- A. Machine-cut copy characters and symbols from matte-finish opaque acrylic sheet and chemically weld onto the opaque acrylic sheet forming sign panel face. Produce precisely formed characters with square cut edges free from burrs and cut marks.
- B. Pictogram/copy signs shall be 6" x 8" with rounded corners and 3/4" high helvetica medium, upper case characters. Provide international symbol of accessibility, graphics, and directional arrows as shown.

2.03 ATTACHMENT DEVICES

- A. Provide adhesive suitable for attaching signs to exterior of building.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install signs in accordance with shop drawings and manufacturer's recommendations.
- B. Mounting heights and locations shall comply with ADA requirements.

SECTION 10522
FIRE EXTINGUISHERS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide fire extinguishers as shown and as specified.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the specified requirements, provide fire extinguishers by one of the following manufacturers, or approved equal:

J.L. Industries
Larsen's Mfg. Co.
Modern Metal Products, Div. of Technico
Potter-Roemer
Walter Kidde

2.02 FIRE EXTINGUISHERS

- A. Provide fire extinguishers for locations as shown. Provide new fire extinguishers approved and labeled by Underwriters' Laboratories.
- B. Provide manufacturer's standard wall mounting brackets with bottom support for extinguishers.
- C. Fill and service extinguishers as required.
- D. Provide the following fire extinguisher type:
 - 1. ABC Dry Chemical: 10 lb. capacity, enameled steel container with pressure indicating gauge, for Class A, B, and C fires.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install extinguishers in locations shown.
- B. Mount top of extinguishers at 46" above floor.
- C. Securely fasten to structure, square and plumb, in accordance with manufacturer's instructions.

SECTION 10800

TOILET AND BATH ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide toilet and bath accessories as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit product data, installation instructions, and maintenance recommendations for each toilet accessory. Provide setting drawings, templates, location of recesses and reinforcement, and instructions for installation of anchorage devices.
- B. Make submittals in accordance with Section 01330.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Products identified in this Section by reference to a specific manufacturer and product name/number are identified for the purpose of establishing a standard of quality, type, and function. Unless otherwise indicated, products of the following manufacturers or approved equal may be substituted for those listed, provided the substitution is equal in quality, type, and function and meets the specified requirements:
Accessory Specialties.
American Specialties.
Bobrick Washroom Equipment.
Bradley/Washroom Accessories Div.
General Accessory Mfg.
McKinney/Parker.
Tubular Specialties.
- B. Provide products of same manufacturer for each type of accessory unit and for units exposed in same areas, unless otherwise approved.
- C. Stamped names or labels will not be permitted on exposed faces of units, unless otherwise specified.

2.02 MIRRORS

- A. 1/4" thick, No. 1 (mirror glazing) quality, clean polished plate/float mirror glass electrolytically copper plated, guaranteed against silver spoilage for 15 years.
- B. Backing shall be resilient, non-absorbent filler material, with not less than 22 ga. galvanized steel backing plate attached to frame with concealed screws, one-piece construction, full height and width of mirror frame. Corrugated cardboard or other moisture absorbent filler material is not acceptable.

- C. Construct metal backing with hanger slots for concealed "tamper-proof" mounting. Provide manufacturer's standard hanger to engage with backing for concealed installation.
- D. Use one piece roll formed frames, not less than 22 ga., satin finish, type 304 stainless steel, with square corners heli-arc welded and ground smooth.
- E. Mirrors Without Shelf: Provide of size as designated; Bobrick B-290 series.

2.03 PAPER TOWEL DISPENSER

- A. Min. 22 ga., satin finish, type 304 stainless steel, with tight seams and rolled exposed edges. Hinge front of unit with continuous piano hinge or not less than two 1-1/2" pin hinges of same metal as cabinet. Provide a tumbler lockset with a spring latch bolt.
- B. Provide surface mounted towel dispenser cabinet to hold 400 C-fold or 525 multi-fold paper towels; Bobrick B-262.

2.04 SOAP DISPENSER - WALL MOUNT

- A. Vertical or horizontal tank style, as shown, liquid unit with refill indicator, 40 fl. oz. capacity, stainless steel finish; Bobrick B-111 or B-112.

2.05 GRAB BARS

- A. Satin finish, type 304 stainless steel, 1-1/4" dia. x 18 ga. wall thickness, length as shown on Drawings, inserted into stainless steel flange and continuously heli-arc welded. When mounted, space between bar and wall shall be 1-1/2".
- B. Provide grab bars with concealed mountings; Bobrick B-5507, Tubular Specialties, Saferail, or approved equal.

2.06 TOILET PAPER HOLDER

- A. Surface-mounted, double-roll without controlled delivery; Bobrick B-2740.

2.07 MOP AND BROOM HOLDER

- A. Satin finish stainless steel, with 3 anti-slip holders with spring loaded rubber cam, 24" long; Bobrick B-223.

2.08 INSERTS AND ANCHORAGES

- A. Furnish inserts and anchoring devices for installation of toilet accessories.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine conditions under which toilet and bath accessories are to be installed. Notify of detrimental conditions. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Use concealed fastenings wherever possible, and as designated. Provide anchors, bolts and other necessary fasteners, and attach accessories securely to walls and partitions in locations as shown and in accordance with manufacturer's instructions.
- B. Install concealed mounting devices and fasteners fabricated of same material as accessories or of galvanized steel.
- C. Install exposed mounting devices and fasteners finished to match accessories.
- D. Provide theft-resistant fasteners for all accessory mountings.

SECTION 10900

WARDROBE & CLOSET SPECIALTIES

PART 1 GENERAL

1.01 SUMMARY

- A. Provide wardrobe and closet specialties as shown and as specified.

1.02 SUBMITTALS

- A. Product Data: Submit product data and finish samples in accordance with Section 01330.

PART 2 PRODUCTS

2.01 COAT RACK & SHELVES

- A. Coat rack and shelves shall be Vogel Peterson, Customline AA202E; Emco, Model 1R2; Magnuson, Architectural Series, Model WH-02A; or approved equal.
- B. Uprights: 19-1/2" long, extruded aluminum with anodized finish or steel channel with baked enamel finish.
- C. Brackets: Cast aluminum with baked enamel finish or die-formed and welded steel.
- D. Shelves: Two shelves consisting of four 18 gauge x min. 5/8" oval steel tubes or four 0.065" x 3/4" diameter round anodized aluminum tubes.
- E. Hanger Bar: 1" diam. x 0.065" anodized aluminum tube or 1" diam. x 16 gauge chrome plated steel tube.
- F. Hangers: 17" removable, open hook, 3/16" diam. plated wire or open hook with high impact colored polystyrene shoulder design. Provide four hangers per foot of hanger bar.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install specialties in accordance with shop drawings and manufacturer's recommendations. Mount at height shown on Drawings.

DIVISION 15
MECHANICAL

SECTION 15100
PLUMBING

1. GENERAL

A. Scope. Applicable provisions of Division 1 shall govern work under this section. The contractor shall provide all items, articles, materials, operations or methods listed, mentioned or scheduled on the drawings and/or herein specified, including all materials, equipment and incidentals necessary to produce a complete and operating system.

B. Index

- 1) General
 - A. Scope
 - B. Index
 - C. Description of System
 - D. Related Work Elsewhere
 - E. Shop Drawings
- 2) General Provisions
 - A. Codes and Standards
 - B. Permits
 - C. Drawings
 - D. Materials
 - E. Execution
 - F. Sleeves and Inserts
 - G. Identification
 - H. Escutcheons
 - I. Tests and Adjustments
 - J. Requirements for Substantial Completion
 - K. Penetrations of Fire Resistive Assemblies
 - L. Guarantee
- 3) Materials and Methods
 - A. Piping Systems
 - B. Pipe Hangers
 - C. Valves
 - D. Insulation
 - E. Plumbing Specialties
 - F. Equipment
 - G. Fixtures and Trim

C. Description of the System

- 1) Provide and install fixtures, specialties, equipment and all related piping as shown on floor plans, scheduled and/or specified for a complete working system.
- 2) Provide and install all necessary sanitary waste, vent, and water piping as shown on floor plans, scheduled and/or specified for a complete working system.

- 3) Provide and install electric water heater as shown on floor plans, scheduled and/or specified.
- 4) Provide and install all sanitary waste and vent piping as shown from septic system outside building to all fixtures and/or appliances.
- 5) Provide and install water service from existing pressure tank in maintenance building. Extend water service to new administration building. Provide control valve and extend to all fixtures and appliances. Bury water service a minimum of 7'-0" BFG to prevent freezing.
- 6) Provide and install connections to exterior LP gas storage tank (lease from local co-op), valving and primary regulator. Extend gas piping from tank to secondary gas regulator on building. Extend gas piping from secondary gas regulator into building to all equipment requiring gas to operate as shown on floor plans, schedules, and/or specified for a complete system. Install all LP gas piping, tank and equipment as per NFPA-58 code.

D. Related Work Elsewhere

- | | | |
|----|-------------|----------------------------|
| 1) | Division 2 | - Section 02300, Earthwork |
| 2) | Division 3 | - Section 03300, Concrete |
| 3) | Division 15 | - Mechanical |
| 4) | Division 16 | - Electrical |

E. Shop Drawings

- 1) The Contractor shall review all shop drawings and mark each item with his approval before submitting to Contracting Officer.
- 2) The Contractor shall provide shop drawings for review in accordance with the requirements of the General Conditions.
- 3) Shop drawings shall contain complete dimensional, operational, material quality and manufacturer information on all fixture, specialty and equipment items.
- 4) Contractor shall provide sufficient copies of shop drawings for his own needs, supplier needs, the requirements of other trades affected by the fixture, specialty and equipment and two (2) copies to be retained by the Contracting Officer.
- 5) The Contractor shall be responsible for transmitting copies of the approved shop drawings to the other affected trades, such as the Electrical Trade for wiring connections, Heating Trade for piping connections and General Trade for supports, drains and equipment bases.
- 6) Shop drawings are required on the following items:
 - a) Fixtures and Trim
 - b) Drains, Cleanouts, and Catch Basin
 - c) Valves
 - d) Water Heater
 - e) LP Gas Regulators and Valves
 - f) Water Heater/Storage Tank Safety Devices
 - g) Wall Hydrant
 - h) Thermometers

2. GENERAL PROVISIONS

A. Code and Standards

- 1) All work specified in this section and applicable provisions of Division 1 shall conform to all applicable codes and to the standards for materials and workmanship of the nationally recognized approval agencies and trade associations such as the American Society of Mechanical Engineers, the American Society for Testing and Materials, The American Standards Association, National Fire Protection Association.

B. Permits

- 1) All permits and fees required by regulatory agencies or utilities for plumbing work shall be secured and paid for by the Contractor.

C. Drawings

- 1) Plans of piping and fixtures shown on scale drawings, are diagrammatic only. They are intended to indicate size and/or capacity where stipulated, approximate location and/or direction and approximate general arrangement of one phase of work to another, but not to the exact detail or arrangement of construction. Plans are based on equipment scheduled. Contractor shall be responsible for changes resulting from equipment other than scheduled.
- 2) If it is found before installation, that a more convenient, suitable or workable arrangement for any or all phases of the project would result by varying or altering the arrangement indicated on the drawings, the Contractor may change the location or arrangement of his work without additional cost to the Government but only after obtaining a written approval by the Contracting Officer.
- 3) Mechanical systems are shown on drawings that were closely coordinated with the Architectural drawings, however, minor variations may occur. Contractor shall verify dimensions, heights, door swings, and any other information critical to the placement of devices, with the architectural drawings to assure proper installation. Field measurements shall take precedence over drawing dimensions and shall be verified. Plans shall not be scaled to locate equipment.

D. Materials

- 1) Each major component of the equipment shall have the manufacturer's name, address, catalog and serial number permanently attached in a conspicuous place.
- 2) The same brand or manufacturer shall be used for each specific application of fixtures, pumps, valves, fittings, controls and other equipment.
- 3) All materials shall be new and of the quality specified and meet approval as per COMM 84.10 (2).

- 4) All equipment shall be listed, approved or rated by a nationally recognized testing and rating bureau or the recognized manufacturers association responsible for setting industry standards. All electrical equipment and apparatus shall be U.L. listed. Examples of recognized associations are:

American Concrete Pipe Association
American Gas Association
American Pipe Fitting Institute
American Water Works Association
Plastic Pipe Institute
Thermal Insulation Manufacturers Association

5) Equipment Substitutions

- a) It is the intent of this specification to permit the use of the materials of any nationally recognized manufacturer so long as they are fully equal to the quality and performance of the named item in the opinion of the Contracting Officer. Materials or equipment of other manufacturers may be used upon the following conditions:
- a.1) The proposed substitute is equal in design, materials, construction and performance in the opinion of the Contracting Officer. No compromise in quality level will be allowed.
- a.2) The service capabilities, availability of service parts and stability of the manufacturer are adequate in the opinion of the Contracting Officer.
- a.3) The Contractor assumes responsibility for any modifications required for the installation of substitute equipment and for the accommodation of such substitution by work of other contractors. Any additional expense on the part of other trades or the Government due to substitution of equipment shall be borne by the Contractor making such substitution.
- b) Approval of materials and equipment will be by review and approval of project shop drawings.

E. Execution

- 1) Workmanship. All work shall be done by qualified licensed plumbers that are knowledgeable and experienced in the operations they are performing. Fabrications and installation methods, procedures and materials shall be in accordance with accepted industry practice and with the standard of manufacturing and contracting associations applicable to the work. All work shall be neatly done with special emphasis on the appearance of work exposed to view. All piping shall be run plumb and square unless otherwise required for a functional reason. Gradients of pitched lines shall be continuous.
- 2) Painting. Furnish all equipment completely finished unless specifically noted otherwise. Touch up all abrasions, nicks, scratches or other paint defects to restore equipment to its original condition. Severely marred equipment shall be factory refinished if so desired by Contracting Officer. Clean all surfaces to make them suitable for painting, on all equipment furnished, which are to be painted by other.

- 3) Excavation and Backfill
- a) Refer to Section 02300, Division 2 "Earthwork" which is applicable; especially note references to "Site Information, Protection, Excavation, Unforeseen Obstacles, Filling and Grading, Compaction Tests, Disposal of Excess and Waste Materials, Dewatering, Etc.
 - b) The Contractor shall perform all excavation required for related underground piping inside building and for all exterior underground piping. Include all necessary clearing of excavated area, and all trenching, tunneling, sheet piling, shoring, underpinning, pumping, bailing, transportation of earth, fill and backfilling.
 - c) Reference is made to the Working Drawings for subsurface soil data, contours, site conditions, etc.
 - d) Excavate whatever material is encountered to depth required. Excavation shall extend one foot out from each side of pipe. Bottom of trench or excavation shall be level and solidly compacted to assure firm foundation.
 - e) All excavated materials shall be removed from site or deposited as directed by the General Construction Trade.
 - f) Protect excavation from caving or washing and erect necessary barricades, complying with regulations set forth in General Orders on "Safety in Construction" and Tunnelling, Caisson and Trench Construction", issued by the State Department of Commerce or other governing authority.
 - g) Lay all pipe in open trenches unless Contracting Officer gives written approval for tunneling.
 - h) Trenches:
 - (1) Trenches for sewers and water shall have a minimum of 8 feet of space between each service.
 - (2) Water and sewer lines may be laid in the same trench as per COMM 82.40 (8) (b).
 - (3) Gas lines shall always be placed in separate trench.
 - (4) All underground piping shall be supported on a bedding of sand or granular material at least 4 inches thick.
 - i) Backfill with sand to one foot above top of piping and thoroughly compacted with earth free of cinders, stones and debris. Remove forms, shoring, etc., as backfill is placed. All backfilling under footings must be compacted within 8 feet of all footings.
 - j) When running a pipe below a footing and parallel to it, same shall in all cases be at least one foot greater in distance away from footing than below its bottom. Where possible, run lines at center point between two parallel footings and maintain above mentioned distances at minimum. When running under a footing, disturb as little of the soil under footing as possible. Provide concrete fill under all footings where excavations wider than 18 inches are required.
 - k) Backfilling shall not be placed until the work has been inspected, tested and approved.

- l) Concrete, asphalt or gravel paved areas, sidewalks, curb, gutters and lawn areas which are disturbed shall be replaced and restored to original condition by Contractor unless specifically stated to the contrary.
- 4) Cutting and Patching. Skilled tradesmen shall be employed to do cutting and patching. Each trade shall be responsible for cutting and patching new openings for their use, in existing or previously constructed walls, ceilings, floors, roofs, etc., unless otherwise designated. Provide personnel protection under coring operations in occupied areas. Submit methods of supporting and sealing floor sleeves for approval. Holes cut in roof and exterior wall shall be weatherproofed immediately. Provide temporary dust barriers for cutting operations in occupied spaces. Refer to Architectural drawings for lintels provided by General trades. When lintels are not indicated in other division of the work, they shall be provided by the trade requiring the opening. All piping penetrations through masonry structure shall be drilled or core drilled. All penetrations for access panels, etc. shall be saw cut before removal. Jack hammering without saw cutting is prohibited.
- 5) Access. All plumbing fixtures and/or equipment shall be located so that parts requiring service and/or adjustment, fixture traps and valves shall be readily accessible. Provide access doors or panels to make service convenient. Doors by Milcor or as per architectural specifications. Provide by Contractor unless designated otherwise.
- 6) Equipment and Piping - below 7'-6" above finished floor shall have a resilient material (foam rubber, etc.) attached to all potentially dangerous edges.
- 7) Blocking. The Contractor is responsible for any additional blocking materials required for the attachment or suspending of plumbing related piping, components, fixtures, equipment related to plumbing work. Reference Section 06100 - Rough Carpentry.

F. Sleeves and Inserts

- 1) At all fire rated penetrations only use UL listed, tested, and approved materials and methods that meet Department of Commerce Plumbing Approval.
- 2) All pipes passing through masonry walls, floors, ceilings or partitions shall be provided with sleeves having internal diameters at least 1/4 inch greater than the outside diameter of uninsulated pipes and/or outside diameter of the insulation of insulated piping. Sleeves for pipes passing through fire rated floor slabs and fire rated walls shall be schedule 40 steel pipe extending 1 inch above the finished slab and sealed. If holes must be cut through finished construction they must be core drilled to avoid damage to construction. Exterior wall sleeves shall be caulked weathertight. Sleeves through equipment room also shall be filled with glass fiber insulation. Where chases are formed for passage of several pipes, they shall have a 1 inch high curb above finished slab and sealed. Whenever sleeves occur as penetrations of rated construction, the void space shall be sealed with U.L. rated foam sealant similar to Chase Foam, CTC PR855; 3M Fire Barrier Caulk CP25 and putty 303; Dow Corning Fire Stop 2000 or Specified Technologies, Inc. Spec Seal Firestop Products installed in strict accordance with the manufacturer's instructions. Use sealant thickness as required to provide the full fire protection rating of the structure. Insulation shall not pass through rated assemblies. Insulation shall butt tight against the rated assembly after the sealant is installed and inspected. Refer to section COMM 51.049 (1)(3) of the Wisconsin Building Heating, Ventilating and Air Conditioning Code.
- 3) Inserts in floor slabs shall be galvanized individual type with accommodation for removable nuts and threaded rods up to 3/4 inch diameter, permitting lateral adjustment. Any fastener in a beam shall be midway above the bottom of the beam.

- 4) Piping that passes through outside walls below grade and above grade shall be permanently sealed with a water-tight rubber compression seal between the pipe and the sleeve equal to Link-Seal modular wall and casing seal as manufacturer by Thunderline Corporation. The pipe sleeve and seal must meet UL listed, tested, and approved materials and methods that meet Department of Commerce Plumbing Approval.

G. Identification

- 1) Identify all mechanical equipment with nameplate bearing equipment name and number, using 1-1/2 inch white bakelite with 1/2 inch black letters permanently mounted in a conspicuous place. Use mechanical fasteners instead of adhesive to mount nameplates wherever possible.
- 2) Markings. Each piping system furnished and installed shall be identified. The direction of flow shall be identified by means of stenciled legends and flow arrows. The marking shall be applied after all painting and cleaning of the piping and insulation is completed and before ceilings are installed.
- 3) Location. The legend and flow arrow shall be applied at all valve locations at all points where piping enters or leaves a wall, partition, bulkhead, cluster of piping, or similar obstruction and at approximately 30 foot intervals on pipe runs with at least one in each space or room. Color shall be black with stencils sized as follows: Over 2" -1" high; 2" under - 1/2" high. The marking shall be located so as to be conspicuous and legible at all times from any reasonable point. Install markings before ceilings are installed.
- 4) Valve Identification. Valve charts shall be provided for each piping system which shall identify each valve with a numbered 1-1/4 inch round brass metal tag, stating valve number, valve location and describe valve function. Upon completion of the project, provide two copies of each chart enclosed in a glass front metal frame and shall be mounted in the mechanical room in a place as directed by the architect. Tags shall be attached with metal "S" hooks or by metal chain. Tags shall be equal to Seton #2960. Provide valve identification charts in each Government's service and maintenance manual.
- 5) Identification Symbols

DCW	Domestic Cold Water
DHW	Domestic Hot Water
LP	Liquid Petroleum Gases
- 6) Concealed Valves and Equipment Identification. All valves, controls, or other equipment requiring service located above removable ceilings, shall have the ceiling tile directly below identified with a colored tack inserted into the tile or a colored sticker applied to grid system designating a valve above.

H. Escutcheons

- 1) Escutcheons shall be installed on all exposed pipes wherever they pass through floors, ceilings, walls, or partitions.
- 2) Escutcheons for pipes passing though floors in unfinished areas shall be split hinged type designed to fit the pipe and to cover the projecting pipe sleeve. Escutcheons for pipes exposed to view in finished areas shall be chrome plated brass.

- 3) Escutcheons shall be properly sized to fit snugly around the pipe and shall be sized to completely cover the wall or floor opening.

I. Tests and Adjustments. The Contractor shall conduct tests of systems as required by codes, regulatory agencies and this specification. Tests shall be made with the medium and under pressure as stated in the test requirements. Notify the Contracting Officer and/or regulatory agencies prior to conducting tests. The Contractor shall complete the attached certification form and submit to the Contracting Officer when tests have been completed and include in O&M Manuals.

1) Tests

<u>Type of System</u>	<u>Gauge Pressures</u> (lbs. per sq. inch, or vacuum in inches)	<u>Test Medium</u>
Building Sewers, Building Drains, All Branches, Vents and Stacks of Sanitary, Storm or Clear Water Piping Systems	Minimum of 10 foot head on each joint for a minimum of 15 minutes with no head loss.	Water
Water	Uniform gauge pressure of 3 psi for a minimum of 15 minutes without adding air.	Air
Service and Bldg. Distribution Piping.	100 psi gauge pressure for a 2 hour period	Water
Fuel Gas	25	Air

- a) The pressure in pounds per square inch, or inches of vacuum, gauge, are given as an initial pressure to be applied to lines being tested, together with test medium. Tests are to be applied for a minimum period of four (4) hours and until tests are complete. Final pressures at the end of test period may vary only by that caused by expansion of the test medium due to temperature changes.
- b) Check of systems during application of test pressures should include visual check for water medium leakage, soap bubble or similar for air and nitrogen medium.
- c) Start-Up of Piping Systems. Potable water system shall be cleaned and disinfected in accordance with state and local codes or in the absence of such codes shall be treated by accepted methods to provide a system free of harmful contaminants and acceptance to regulatory agencies. All lines shall be thoroughly flushed to remove dirt and construction debris. See COMM 82.40(8) (I).

CERTIFICATION OF TESTS AND ADJUSTMENTS - PLUMBING

Contractor Name: _____

Project Name _____

Project Number _____

The Contractor named above certifies that the tests and adjustments indicated below have been completed in accordance with the specifications on the date indicated.

TESTS	DATE
Building Sewers, Building Drains, Branches, Vents and Stacks	_____
Sanitary Waste and Vent	_____
Water:	
1) Building Service	_____
2) Building Distribution	_____
Fuel Gas	_____
Start-up of Piping System and Pumps	_____
Flushing and Disinfection of Potable Water System	_____
Potable Well Test, Samples, and Report as pr NR812.41 (see Section 15400)	_____

Contract _____

Signed By the Contractor _____

Date _____

Signed By Project Manager _____

Date _____

J. Requirements for Substantial Completion

1) Cleaning Equipment and Premises

- a) Thoroughly clean all parts of the piping, valves and fixtures. Exposed parts which are to be painted shall be thoroughly cleaned of cement, plaster and other materials and all oil and grease spots removed. Such surfaces shall be carefully wiped and all cracks and corners scraped out. Exposed metal work shall be carefully brushed down with steel brushes to remove rust and other spots and left smooth and clean.
- b) Remove all construction debris, excess materials and equipment.
- c) Caulk around all plumbing fixtures at walls and around base of water closets, service sinks, etc.

2) Operating and Maintenance Manuals

- a) The Contractor shall furnish to the Contracting Officer two operating manuals for furnished equipment. Information sheets shall be bound in standard 3-ring binders labeled to show the contractor's name, address, regular business phone number, emergency phone number and date. Operating manuals shall be submitted prior to completion of the work to allow time for review. The manual shall contain the following information:
- b) The Certification of Tests and Adjustments completed and signed.
- c) A list (keyed with identification numbers used) of each item of equipment, which required service giving the name of the item, model number, manufacturer's name and address and the name address and phone number of the nearest representative or authorized service organization.
- d) A copy of the approved shop drawing for each item.
- e) A complete operating and maintenance manual with parts listed, wiring diagrams, lubrication requirements, and service instructions for each major item including faucet and mixing valve repair.
- f) Complete control diagrams with description of all operating sequences and control devices.
- g) Properly executed and registered manufacturer's warranties.
- h) A copy of valve chart.
- i) Provide a minimum of 2 hours training on operations of major equipment with Government maintenance staff.
- j) Provide a warranty letter on the plumbing contractor's letterhead stating that, "All material and workmanship shall be guaranteed for a period of one year after substantial completion."

- K. Penetrations of Fire Resistive Assemblies. Plumbing piping systems that penetrate fire rated assemblies shall be installed in accordance with COMM 51.049 or current acceptable methods. Also refer to requirements for sleeves.
- L. Guarantee. All material and workmanship shall be guaranteed for a period of one year after substantial completion. Where warranties are required, they shall be provided by the manufacturer or contractor as specified.

3. MATERIALS AND METHODS

A. Piping Systems

1) Exterior Water

- a) Type "K" soft temper copper pipe with a working pressure of 150 psig at 73.4° F. and in accordance with ASTM B42 and ASTM B88 standards.

a.1) Fittings:

- 1. Wrot copper solder joint fittings in accordance with ANSI Std. B16.22; B16.29; B16.43.
- 2. Cast copper alloy solder joint fittings in accordance with ANSI std. B16.18; B16.23; B16.26; B16.32

a.2) Soldered Joints:

- 1. Clean all surfaces per manufacturers installation recommendations.
- 2. Apply non-toxic flux to all joint surfaces.
- 3. Jointing shall be made with lead-free solder conforming to ASTM B32.

- b) All pipe and fittings shall be installed per manufacturers recommendations.

- c) All outside water piping shall have a minimum burial of seven feet below finished grade.

2) Interior Water

- a) Piping Below Floor Slab. Type "K" soft temper copper with wrot copper solder joint fittings and jointing material shall be lead free solder and non-toxic flux.

- b) Piping Above Floor. Type "L" hard tempered copper with wrot copper solder joint fittings and jointing material shall be lead free solder and non-toxic flux.

3) Exterior Sanitary Building Sewer. Underground piping shall be:

- a) PVC Pipe (ASTM-D3034) with rubber gasket joints (ASTM-D3212)
- b) Schedule 40 PVC (ASTM-D2665) with solvent cement joints (ASTM-D2564)
- c) Fittings required shall meet specifications for respective piping.

- d) Provide cleanouts as required per COMM 82.35.
- 4) Frost Protection - Sanitary Sewers.
- a) Piping shall be protected per COMM 82.30 (11) (b) and tables 82.30-5, 83.30-6 and 82.30-7.
 - b) The insulation shall be built up with 1 inch extruded polystyrene insulation to required thickness with staggered joints.
- 5) Interior Sanitary and Vent
- a) Cast iron no-hub pipe (CISPI-301) with mechanical sleeve joints (CISPI-310).
 - a.1) Tyler pipe and fittings.
 - b) Galvanized steel pipe, above ground only, (ASTM-A53; ASTM-A120) with screwed or cast iron drainage pattern fittings.
 - c) Schedule 40 PVC pipe (ASTM-D2665) with socket solvent cemented joints (ASTM-D2855). PVC piping shall not run in air plenum ceilings, air shafts or ducts.
 - d) Fittings required shall meet specifications for respective piping.
 - e) Extend vents 12 inches above finished roof or above normal snow depth.
 - f) Provide approved roof flashing to correspond with roof covering being installed or with existing roof covering. Verify with roof installer so as to not void warranty or roof.
- 6) Horizontal Soil and Storm Lines. Lines shall pitch down a minimum of 1/8 inch per foot in the direction of flow, or as indicated on the drawings. Soil and waste branch piping shall pitch down 1/4 inch per foot. All vent piping shall drip back into waste piping. Stacks shall be run vertically. Changes of direction 45° or more from vertical to horizontal shall be made with long sweep elbows. Horizontal changes in direction shall be made with "Y" or "Y" and 1/8 bend combination fitting.
- 7) Gas Piping
- a) Design, materials, methods and installation as per NFPA-54 for Natural Gas Piping and NFPA-58 for Liquefied Petroleum Gases.
 - b) Piping above ground shall be schedule 40, welded or seamless A53 black steel pipe. Piping 2-1/2 inch and larger shall be welded. Piping 2 inch and smaller may be screwed. Fittings for 2 inch and smaller may be threaded 150# black malleable iron. Fittings for 2-1/2 inch and larger shall be seamless standard weight steel weld fittings.
 - c) Exterior underground piping shall be Schedule 40 X-Tru-Coat conforming to A.P.I. - 51 continuous weld specification, with high density polyethylene coating and of operating temperature range of -40°F. to 150°F. Fittings shall be 3000# forged steel socket weld. Fittings to be wrapped with plastic tape manufactured for this purpose.

- d) Unions shall be equal to Stockham 592-T Teflon O-ring type. Insulating union shall be provided at gas service entrance on service side of meter.

- e) Gas Pressure Regulator. Provide and install where shown on drawings and/or details regulators sized per loads of equipment being served. Regulators shall be of diaphragm, spring operation type with cast iron body, aluminum diaphragm case and vent valve with threaded connection for atmosphere disposal. Regulators sized within load requirements which are equipped with leak limiter venting may be used in lieu of the atmosphere venting type. Regulators by Maxitrol, Rockford or Fisher are acceptable.
- f) Gas regulator relief vents shall be extended full size to outside of building, thru wall or roof and provide weather cap.
- g) Provide shut-off valve, dirt leg and union at each piece of equipment.
- h) Purge with gas to remove all air from distribution piping to make ready for service.
- i) Gas piping may be installed in or above accessible ceiling spaces. Valves shall not be located in such spaces.
- j) Gas piping shall be installed with swing joints to relieve the thrust on the pipe at point where it pierces building wall. The annular space between the pipe and sleeve, where pipe pierces building walls, shall be grouted airtight with an elastomeric compound.
- k) Doormont. Gas-fired appliance connector.
 - k.1) The connector shall be stainless steel and A.G.A approved.

B. Pipe Hangers

- 1) Furnish and install suitable hangers and supports for all horizontal lines. Hangers and supports shall be Grinnell, Mason, F&M, Michigan or equal. Heavy pipes shall be carried by pipe hangers supported by rods secured to structure. No piping shall be hung from other piping or ductwork. In no case shall hangers be supported by means of vertical expansion bolts.
 - a) Support Spacing. Piping shall be supported at distances not to exceed those specified.

Pipe Material	Maximum Horizontal Spacing (fee)	Maximum Vertical Spacing (feet)
Cast Iron	5 ^a	15
Copper or Copper-Alloy Pipe	12	10
Copper or Copper-Alloy Tubing		
? 1-1/4" diameter	6	10
? 1-1/2" diameter	10	10
Galvanized Steel	12	15

Polyvinyl Chloride	4	10
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Note a: The maximum horizontal spacing for supports may be increased to 10 feet when 10-foot lengths of pipe are employed.

Note b: " ? " means less than or equal to.
" ? " means greater than or equal to.

C. Valves

- 1) Provide all valves shown on the plans and as required by applicable state and local codes. Valves manufactured by Milwaukee, Nibco, Jomar, Watts or Apollo are acceptable. All valves shall be suitable for 125 PSIG working pressure unless otherwise specified.
- 2) A control valve for water supply piping 3/4 inches through 4 inches in diameter which serves 2 or more plumbing fixtures shall have a nominal diameter at least equal to the piping.
- 3) Hot and Cold Water
 - a) Ball Valves; 4" and smaller. Two or three piece bronze body, full port, blow out proof stainless steel stem, brass ball with hard chrome plating, TFE seat rings, plated steel handle.
- 4) Gas (L.P. and Natural)
 - a) Ball Valves - 3" and smaller bronze body, chromium plated ball, reinforced TFE stem packing and seats, 600 psi WOG, 250 psi LP gas, lever handle and UL listed.

D. Insulation

- 1) General Requirements. The work covered by this specification consists in furnishing all labor, equipment, accessories and materials and in performing all operations necessary for the installation of all insulation for the plumbing piping systems in strict accordance with the insulation section of this specification and applicable drawings, subject to the terms and conditions of the contract. All insulation shall be installed in a workmanlike manner by skilled workmen regularly engaged in this type of work. Insulation shall be Johns-Manville, Armstrong, Fiberglass, Knauph, or products of equal quality and performance.
 - a) All insulation shall have composite (insulation, jacket, or facing, and adhesive used to adhere the facing or jacket to the insulation) fire and smoke hazard ratings as tested by procedure ASTM C84, NEPA 225, and UL 723 not exceeding: Flame spread 25; Smoke developed 50; fuel contributed 50; UL fire hazard classification 1. Accessories, such as adhesives, plastics, cements, taps or glass fabric for fittings shall be the same component ratings as listed above.
 - b) Insulation thickness specified herein is based on a conductivity of .22 BTU/SQ.Ft>/Deg. F/HR. at 75° F. mean temperature. If insulating materials with substantially different thermal properties are used the thickness of insulation shall be adjusted to provide the overall insulating efficiency of the material specified.

- c) Insulation on all cold surfaces where vapor barrier jackets are used shall be applied with a continuous, unbroken vapor seal. Hangers, supports, anchors, etc., that are secured directly to cold surfaces must be adequately insulated and vaporsealed to prevent condensation.
- d) All insulation shall be continuous through walls and ceiling openings and sleeves where applicable.
- e) Preformed pipe insulation shall be two-piece or one-piece fiberglass composite with vinyl coated embossed vapor barrier laminate and pressure sealing lap similar to Owens Corning's Fiberglass 25ASJ or Johns-Manville A.P. The insulation systems shall be suitable for piping operating between 50°F to 450°F. The insulation system shall be vermin-proof, rot-free, non-shrinking with a moisture absorption not exceeding .2% by volume after 96 hours at 120°F and 95% RH. Jacket permanence shall not exceed .2% perms and shall have a Beach puncture rating of at least 50 units.
- f) Fittings, valve bodies and flanges for pipe sizes 6 inch and smaller shall be finished with fiberglass inserts and PVC fitting covers. One (1) insert to be used for pipe insulation of 1 inch thickness. An additional insert to be used for each additional 1 inch or fraction thereof for pipe insulation above 1 inch thickness.
- g) Make adequate provisions for expansion of piping. Unions to be left uncovered and clean. Finished surfaces of insulation are to be suitable for painting.

2) Insulation Protection

- a) Insulation exposed to high moisture of interior areas shall be encased with 15 mil. vinyl film.
- b) All joints sealed as recommended by manufacturer.

3) Domestic Water Piping.

- a) Cold water above ground shall be insulated with 1 inch thick fiberglass insulation with ASJ jacket.
- b) Hot water above ground shall be insulated with 1 inch thick fiberglass for sizes through 3 inch pipe and 1-1/2 inch thick fiberglass for sizes greater than 3 inch and with ASJ jacket. See hot water maintenance systems recommendations.
- c) Hot and cold water underground shall be insulated with 1/2 inch thick plastic foam.
- d) Hot and cold water piping concealed in walls or pipe chases may be insulated with 1/2 inch thick plastic foam.

E. Plumbing Specialties

- 1) Traps. Every fixture and floor drain shall be provided with a proper trap placed near the outlet and properly vented. Traps shall be cast iron hub and spigot where used in soil pipe or nohub with approved stainless steel couplings. Traps for threaded pipe shall be screwed drainage pattern cast iron "P" traps. Where approved, PVC traps with adjustable compression fittings may be used. All exposed traps for sinks, lavatories and similar

fixtures shall be chrome plated "P" traps, or as specified with the fixture trim. All traps shall have a minimum seal of 2 inch.

2) Cleanouts - Floor.

- a) Based on product by Zurn.
- b) Cleanouts of equal quality by Wade, Sioux Chief, Josam or Ancon are acceptable.
- c) Cleanout shall be set flush with floor.
- d) Covers shall be round or square scoriated nickel bronze. Provide carpet flanges for carpeted areas. (Refer to Architectural drawings and schedules).
- e) All cleanouts shall be full size of the pipe it serves thru 6" and 6" for sizes 8" and larger.
- f) Cleanouts - Floor.
 - c.o. 1 Zurn Z-1400NH or NL, gasketed seal - bronze or PVC plug (light to medium traffic).

3) Cleanouts - Wall Access

- a) Based on product by Sioux Chief Products Co.
- b) Wall access plates of equal quality by J.R. Smith, Wade, Josam, Ancon and Zurn are acceptable.
- c) Wall access covers shall be heavy duty round stainless steel for size 5 1/2" diameter thru 8-1/2" diameter and standard duty round stainless steel for diameters 10-1/2" and 12-1/2".
- d) Each wall access cover shall be secured to wall by a tapped, behind the wall, bar and a chrome plated threaded bolt.
- e) Sioux Chief wall access covers #SS-1015 HD, SS-1016HD, SS-1018HD, SS-1010 and SS-1025.

4) Floor Drains

- a) Provide and install floor drains where shown and size indicated on the drawings of the type listed below. Floor drains shall be set level and at the proper elevation to drain the surrounding floor area. All floor drains set in floors above habitable space shall be equipped with 4# per square foot sheet lead safing or approved vinyl type extending a minimum of 18 inches beyond rim of floor drain in all directions. Based on product by Zurn.
- b) Where it is impossible to use safing - use a Portland cement type of latex patching compound to seal between floor and drain body. The patching compound to be equal to the following manufacturers and material shall meet COMM Product Approval Requirements:

Ventonite, Inc. - Atlanta, Georgia.
ACD Pourable Underlayment, International, Inc. - Pittsburgh, PA
Ardex V-800, Levelcrete by Ardex, Inc. - Pittsburgh, PA
Latex Cement by Master Builders/Martin Marretta - Cleveland, OH

FD-1 Floor Drain
 Zum ZN-415 w/Type B Strainer
 Cast iron body, reversible clamping collar for high or low setting, round nickel bronze adjustable strainer. Strainer diameter shall be 5" for 2" outlets, 6" for 3" outlets thru 8" for 4" outlets.

Floor Drains of equal quality by Wade, Josam, Ancon or Smith are acceptable.

- 5) Garage Catch Basin. See details and schedules on plans.
- 6) Water Hammer Arrestors.
 - a) Provide water hammer arrestors on hot and cold water piping where shown on drawings.
 - b) Water hammer arrestors shall be sized and located in accord with the hydraulic design of the piping system served and to the manufacturer's recommendations.
 - c) Mechanical water hammer arrestors shall be accessible.
 - d) Arrestors manufactured by J.R. Smith, Wade, Josam, Zurn, Sioux Chief or Precision Plumbing Products are acceptable.

ARRESTOR SIZING TABLE

<u>P.D. I. Units</u>	<u>Fixture Units</u>	<u>Plan Symbol</u>
A	1-11	"A"
B	12-32	"B"
C	33-60	"C"
D	61-113	"D"
E	114-154	"E"
F	155-330	"F"

- 7) Wall Hydrants. Provide and install where shown on the drawings Woodford Model #67 automatic draining freezeless wall hydrant with chrome plated finish, removable "T" handle key, vacuum breaker and anti-siphonage outlet (ASSE #1052). Seal hole through all around hydrant with grout or caulking to make water tight and air tight. Provide stop and waste valves in lines preceding all hydrants. Wall hydrants equal in quality by J.R. Smith, Josam, Wade or Zurn are acceptable.
- 8) Thermometers. Provide thermometers in water systems for monitoring system. Thermometers shall be industrial grade with 9 inch aluminum case, black finish, aluminum stems, 2-1/2 inch insertion, clear acrylic window, red indicator on white scale, and brass well socket. Thermometers shall be adjustable type with range as best suited to application. Mount thermometers in a position so as to be visible from a convenient floor location. Instruments shall be Terice Series A005. Ernst Gauge Co. or Crosby are acceptable. Provide thermometers in the following locations:
 - 1. Water heaters in hot building supply.

F. Equipment

- 1) Electric Water Heaters. See Schedule for size and characteristics. Heaters shall be glass lined steel, tested under 125 psi hydrostatic pressure prior to lining, and provided with anodic protection, external drain valve and ASME rated temperature and pressure relief valve. Heating elements shall be direct immersion type, heavy duty, Incoloy sheathed, low voltage density (75 watts per square inch) of capacity and arrangement as scheduled. Controls shall include contactors, adjustable thermostats and high limit thermostat (set point 205°F.). Tank shall be insulated with polyurethane foam insulation with a minimum R-value of 16. The entire unit shall be U.L. approved and labelled. Heater by Rheem, Lockinvar, A.O. Smith, or State Industries are acceptable.

- 2) L.P Gas Storage Tank -Above Ground (Tank will be leased by owner through local co-op.)
 - a) Tank capacity 1,000 gallons, ASME 250 code working pressure, and approximate size 42" diameter by 212" overall length.
 - b) Contractor shall secure necessary permits and submit required installation reports to the local fire department.
 - c) Furnish and install gas storage tank per specification, drawings, and where shown on site plan.
 - d) Tanks shall be ASME constructed.
 - e) No part of the tank shall be less than 25 feet from a building, fresh air intake, or adjoining property.
 - f) Provide and install at tank, a first stage regulator (high pressure), a positive shut-off valve, excess flow valve, pressure relief valve, pressure gauge, liquid level gauge, and fill valve. Provide an insulating union to be installed prior to supply pipe to building.
 - g) Provide 1/2" Type 'K' copper piping from tank to building secondary regulator unit.
 - h) Liquefied petroleum gas piping, storage tank and related equipment must be installed, sized, and materials as per Uniform Plumbing Code, local codes, and NFPA-58 standards for the storage and handling of liquefied petroleum gases.
 - i) Provide 5' x 20' x 6" thick concrete pad for tank, by Contractor.

- 3) Water Heater/Storage Tank Safety Devices
 - a) All pressurized storage-type water heaters and unfired hot water storage tanks shall be equipped with one or more combination temperature and pressure relief valves. The temperature steam rating of a combination temperature and pressure relief valve or valves shall equal or exceed the energy input rating in BTU per hour of the water heater. No shut off valve or other restricting device may be installed between the water heater or storage tank and the combination temperature and pressure relief valve.
 - b) All pressurized non-storage type water heaters shall be provided with a pressure relief valve installed at the hot water outlet with no shut off valve between the heater and the relief valve.

- c) Temperature and pressure relief valves shall be installed so that the sensing element of the valve extends into the heater or tank and monitors the temperature in the top 6 inches of the heater or tank.

- d) Relief Valve
 - d.1) Every relief valve which is designed to discharge water or steam shall be connected to a discharge pipe.
 - d.2) The discharge pipe and fittings shall have a diameter not less than the diameter of the relief valve outlet.
 - d.3) The discharge pipe may not be trapped.
 - d.4) No valve may be installed in the discharge pipe.
 - d.5) The discharge pipe shall be installed to drain by gravity flow to a floor served by a floor drain or to a receptor in accordance with COMM 82.33 (8). The outlet of the discharge pipe shall terminate within 6 inches over the floor or receptor, but not less than a distance equal to twice the diameter of the outlet pipe. The outlet of the discharge pipe may not be threaded.
 - d.6) The discharge pipe for a water heater shall terminate within the same room or enclosure within which the water heater or hot water storage tank is located.

- e) Safety Devices
 - e.1) Relief valves shall be listed by the American Gas Association, Underwriters Laboratories, Inc. or American Society of Mechanical Engineers when the heat input to a water heater is less than or equal to 200,000 BTU per hour.
 - e.2) Relief valves shall be listed by the American Society of Mechanical Engineers when the heat input to a water heater exceeds 200,000 BTU per hour.
 - e.3) Pressure relief valves shall be set to open at either the maximum allowable working pressure rating of the water heater or storage tank or 150 psig, whichever is smaller.
 - e.4) Temperature and pressure relief valves shall be set to open at a maximum of 210° F. and in accordance with subpar. f.3).

G. Fixtures and Trim

- 1) This section of the work includes plumbing fixtures furnished and installed by the Contractor.
- 2) All vitreous china fixtures shall be of the best quality conforming in all respects to classification "Regulation Selection" in accord with the uniform grading rules of "Vitreous China". Fixtures to be "roughed-in" in accord with manufacturer's dimensions. All fixtures shown on the drawings and/or specified herein shall be set firm and true, connected to all the piping services required and ready for use without the offsetting of supplies. Equipment shall be suitably protected against damage before and after installation. Any damaged plumbing fixture or piece of equipment shall be replaced at the expense of the Contractor. All fixtures to be acceptable for final inspection shall be free of chips, flaws, scratches, abrasions, discolorations or any defect which, in the opinion of the Contracting Officer would classify the fixture as unsuitable for use intended.
- 3) All exposed trim including pipe nipples to plumbing fixtures shall be chromium plated and shall be completely free of tool marks, abrasions, or flattening of tubing, etc. All fixtures included in this specification and shown on the drawings shall be completed by the Contractor together with all necessary hangers, bolted, anchors and brackets.
- 4) All fixture heights, spacing apart and distances from walls shall be in accordance with Architectural details (floor plans and elevation). Deviation may necessitate alteration to comply with plans. Verify dimensions with General Trades. All fixtures shall be set level.
- 5) Repair all leaks, dripping faucets, etc. Regulate flow to water closets, showers, etc., for proper operation. Provide shutoffs at all individual fixtures.
- 6) Fixtures and trim of equal quality as listed by other manufacturers may be submitted.
- 7) Fixture support. Provide and install proper supports and carriers for plumbing fixtures as scheduled or required for the application. Carriers shall be set in accordance with manufacturer's recommendations with adequate anchors and fasteners to provide required support. Wall hung water closet outlets shall be fully grouted for support in masonry walls.
- 8) Caulk around all plumbing fixtures.

PLUMBING FIXTURES

WC-1 Water Closet

Kohler K-4330
American Standard 2257.103
Crane 3-446E

Vitreous china elongated bowl siphon jet rear outlet water closet with top spud. Rim 18" A.F.F. Provide fixture carrier.

Flush Valve:
Sloan Regal 111
Zurn Z-6000XL-WS1
Delany 402-1

Exposed chrome plated flush valve for 1.6 gallon flush, quiet action with screw-driver stop, vacuum breaker, escutcheon and spud flange.

Seat:
Bemis No. 1955-C
Beneke 523
Kohler K-4670-C
Olsonite 10-CC

Extra heavy white solid plastic open front seat with check hinge for elongated bowl.

Grab Bars:

By Others.

Carrier:
Zurn 1203/1204 Series
Wade
J.R. Smith

No hub, horizontal/vertical, siphon jet carrier. Right or left hand, double/single to be determined by the Contractor.

Note: As per ADA code, flush handle must be located on open accessible side of stall.

L-1 Lavatory (ADA)

Kohler K-2032
Crane 1-412-V
Mansfield 2018HB

White 20"x18" vitreous china wall mounted lavatory with 4" faucet centers and wall bracket.

Faucet:
Zurn Z-86500
Chicago 802A-665

Chrome plated brass faucet, 4" spout, slow closing metering cartridge handles, 0.25 G.P.M. with 4" centers. Busy adjustable cycle time, preset to 10 seconds at 80 psi. 1/2" coupling nuts for standard lavatory risers.

Drain:
EBC SG7WC
McGuire 155WC
Keeney 5700PC

Offset lavatory drain with perforated strainer with 1-1/4" tailpiece.

Supplies:
EBC LA-16
Brass Craft OCR-1912-AZC
McGuire 2165-CC

1/2" compression chrome plated cast brass angle stop with brass stem and wheel handle, chrome plated flexible copper tube riser and chrome escutcheon.

Trap:
EBC-TA140
McGuire 8902
Keeney 311XPC

1-1/4" x 1-1/2", 17 gauge, ground joint, polished chrome tube "P" trap and escutcheon.

Insulation Kit:
Truebro #102 w/105 Accessory
Brocar Products C500 RHS
McGuire PW 2000 WC

Handicap lavatory P-trap and angle valve assemblies shall be insulated with white color fully molded insulation kit.

Note: Refer to architectural plans for mounting height.

Fixture Support:

J.R. Smith Fig. 805 for masonry walls and Fig. 805-M31 for metal stud walls. Provide 2" wood backing in wood frame walls.

J.R. Smith Fig. 700 for masonry walls and Fig 700- M31 for metal stud walls.

S-1 Sink

Elkay LR-2521
Just SL-2125-A-GR

Single compartment, 25" x 21" x 7 1/2", sound deadened 18 gauge stainless steel, self-rim, satin finish with 3-1/2" drain opening. Faucet hole punching for faucet specified.

Faucet: (Commercial)
Moen 8720

8" cc, 9" spout, 4" lever single handle, all brass construction, with hose sprayer unit, 4 holes application, 1/2" connections.

Drain:
EBC SB8D
Keeney 1432-SS
Dearborn 11
Frost 6790-3

Heavy gauge stainless steel drain outlet with stainless basket strainer, lift up knob with neoprene stopper and 1-1/2" chrome tailpiece.

Supplies:
EBC LA16
Brass Craft OCR-1912-AZC
McGuire 2165CC

1/2" compression chrome plated cast brass angle stops with brass stem and wheel handle, 3/8" chrome flexible tube riser and chrome escutcheon.

Trap:
EBC TA150
McGuire C8912
Keeney 5307XPC

1-1/2" x 1-1/2" chrome plated 17 gauge adjustable ground joint "P" trap and chrome escutcheon.

SS-1 Service Sink

E.L. Mustee 63M
Fiat MSB-2424
Zurn 24

24"x 24"x 10" deep resin bonded white with black accents one piece mop basin with 3" cast brass drain body, dome strainer/lint basket. Provide 3" neoprene gasket 3 place mop hanger, vinyl bumper guard and silicone sealant. Provide 12" x 24" stainless steel wall panels and seal around basin at top of basin and wall panels.

Faucet:
T&S Brass #B-2345

Polished chrome plated brass exposed wall mount service sink faucet with threaded spout, pail hook, wall bracket and integral stops. Install Watts No. 8A chrome plated vacuum breaker on threaded spout. Provide 36" long hose kit. Install faucet at 36" AFF.

DIVISION 15
MECHANICAL

SECTION 15500
GENERAL MECHANICAL PROVISIONS

1. GENERAL

A. Scope. Applicable provisions of Division 1 shall govern work under this section. The contractor shall provide all items, articles, materials, operations or methods listed, mentioned or scheduled on the drawings and/or herein specified, including all materials, equipment and incidentals necessary to produce a complete and operating system.

B. Index

1. General
 - A. Scope
 - B. Index
 - C. Description of the Work
 - D. Shop Drawings

2. General Provisions
 - A. Codes and Standards
 - B. Permits
 - C. Drawings
 - D. Materials
 - E. Execution
 - F. Electric Motors, Starters and Drives
 - G. Vibration Isolation
 - H. Identification
 - I. System Balancing
 - J. Tests and Adjustments
 - K. Operation and Maintenance Instruction
 - L. Requirements for Substantial Completion
 - M. Guarantee

C. Description of the Work

An LP gas-fired furnace with matching DX cooling coil and condensing unit will provide heating, ventilating, and air conditioning to the spaces. Electric heat and exhaust systems are provided.

D. Shop Drawings

- 1) The contractor shall provide shop drawings for review in accordance with the requirements of the General Conditions. Shop drawings shall contain complete dimensional, operational and material quality information on all equipment items. Contractor shall provide sufficient copies of shop drawings for his own needs, suppliers needs, the requirements of other contractors affected by the equipment and two copies to be retained by the Contracting Officer.

- 2) The contractor shall be responsible for transmitting copies of approved shop drawings to other affected contractors such as the electrical contractor for wiring connections, heating or plumbing contractor for piping connections and General Contractor for supports and bases. Shop drawings shall contain but not be limited to the following information: Catalog sheets or drawings showing general arrangements, dimensions, weights, electrical characteristics, power consumption, speed (rpm), finishes, material, service accessibility requirements, capacity (BTU, cfm, gpm, etc.) efficiency and other data pertinent to the application of the item to the project. Insulation shop drawings shall include thermal performance of the product, thickness and application of each type submitted. Valve shop drawings should identify application of each valve type. All parameters given in the equipment schedule shall be stated in the shop drawings. Required shop drawings will be identified in applicable equipment sections.

2. GENERAL PROVISIONS

A. Codes and Standards

- 1) All work specified in this section and applicable provisions of Division 1 shall conform to all applicable codes and to the standards for materials and workmanship of the nationally recognized approval agencies and trade associations such as the American Society of Mechanical Engineers, The American Society for Testing and Materials, The American Standards Association, National Fire Protection Association, Sheet Metal and Air Conditioning Contractors National Association, The American Society of Heating, Refrigeration and Air Conditioning Engineers, and The American Society of Plumbing Engineers.
- 2) Contractors installing heating, ventilating and air conditioning systems or equipment in the State of Wisconsin must be licensed. The contractor must provide proof of current and valid license upon request and maintain license through project completion.

B. NOT USED

C. Drawings and Coordination

- 1) Plans of piping and ductwork shown on scale drawings are diagrammatic only. They are intended to indicate size and/or capacity where stipulated, approximate location and/or direction and approximate general arrangement of one phase of work to another, but not the exact detail or arrangement of construction. Plans are based on equipment scheduled. Contractor shall be responsible for changes resulting from equipment other than scheduled.
- 2) If it is found before installation that a more convenient, suitable or workable arrangement for any or all phases of the project would result by varying or altering the arrangement indicated on the drawings, the Contractor may change the location or arrangement of his work without additional cost but only after obtaining written approval by the Contracting Officer..

- 3) Mechanical systems are shown on drawings that were coordinated with the architectural drawings; however, variations may occur. Contractor shall verify dimensions, heights, door swings and any other information critical to the placement of devices with the architectural drawings to assure proper installation. Field measurements shall take precedence over drawing dimensions and shall be verified. Plans shall not be scaled to locate equipment.
- 4) The contractor installing material and equipment shall coordinate the installation with all other trades prior to installation. Additional project cost is not justified due to lack of coordination or due to material fabrication without field measurements. Any coordination problems shall be brought to the attention of the Contracting Officer before installation or fabrication.

D. Materials

- 1) Each major component of the equipment shall have the manufacturer's name, address, catalog and serial number permanently attached in a conspicuous place.
- 2) The same brand or manufacturer shall be used for each specific application of controls and other equipment. All rotating equipment shall be statically and dynamically balanced for minimum vibration and low operating noise levels.
- 3) All materials shall be new and of the quality specified.
- 4) All equipment shall be listed, approved or rated by a nationally recognized testing and rating bureau or the recognized manufacturers association responsible for setting industry standards. All electrical equipment and apparatus shall be U.L. listed. Examples of recognized associations are:

Air Diffuser Council
Air Conditioning and Refrigeration Institute
Air Moving and Control Association
American Gas Association
Home Ventilating Institute
Heat Exchanger Institute
National Fan Manufacturers Association
Plastic Pipe Institute
Thermal Insulation Manufacturers Association

- 5) Equipment Substitutions
 - a) Wherever a piece of equipment or material is identified by a manufacturer's trade name, catalog number, etc., it is intended merely to establish a standard; and any equipment of another manufacturer which will perform adequately the requirements of the design and is of equal or greater quality than the specifications in the opinion of the Contracting Officer will be considered equally acceptable.
 - b) It is the intent of this specification to permit the use of the materials of any (listed) nationally recognized manufacturer so long as they are fully equal to the quality and performance of the named item in the opinion of the Contracting Officer. Materials or equipment of other manufacturers may be used upon the following conditions:

- b.1) The proposed substitute is equal in design, materials, construction and performance in the opinion of the Contracting Officer. No compromise in quality level will be allowed.
- b.2) The service capabilities, availability of service parts and stability of the manufacturer are adequate in the opinion of the Contracting Officer.
- b.3) The contractor assumes responsibility for any modifications required for the installation of substitute equipment and for the accommodation of such substitution by work of other contractors. Any additional expense on the part of other contractors or the Government due to substitution of equipment shall be borne by the contractor making such substitution.
- b.4) Substitute equipment shall fit into the space provided with adequate provisions for service and maintenance.
- b.5) Approval of material and equipment will be by review and approval of project shop drawings.

E. Execution

- 1) Workmanship. Fabrications and installation methods, procedures and materials shall be in accordance with accepted industry practice and with the standards of manufacturing and contracting associations applicable to the work. All work shall be neatly done with special emphasis on the appearance of work exposed to view. All pipes, ducts and lines shall be run plumb and square unless otherwise required for a functional reason. Gradients of pitched lines shall be continuous.
- 2) Painting. Furnish all equipment completely finished unless specifically noted otherwise. Touch up all abrasions, nicks, scratches or other paint defects to restore equipment to its original condition. Severely marred equipment shall be factory refinished if so desired by Contracting Officer. Clean all surfaces to make them suitable for painting, on all equipment furnished, which are to be painted by others.
- 3) Lubrication. All lubrication fittings shall be accessible for maintenance. Lubrication lines shall be extended to accessible points and terminated with lubrication fittings. All equipment shall be properly lubricated before running. Lubricate all equipment immediately before turning over to the Government. Provide the Government with a list of proper lubricants to be used in all bearings and a list of lubrication intervals with maintenance manual. Provide the Government with one years supply of any special lubricants required.
- 4) Cutting and Patching. Skilled tradesmen shall be employed to do cutting and patching. Each Contractor shall be responsible for cutting and patching new openings for their use, in previously constructed walls, ceilings, roofs, etc., unless otherwise designated. Use core drills or saws to cut all openings. Holes cut in roof and exterior wall shall be weatherproofed immediately. Provide temporary dust barriers for cutting operations in occupied spaces. Where openings require lintels, they shall be provided by the trade requiring the opening unless specifically indicated on the drawings as being provided in another trade.

- 5) Access. All items of mechanical equipment shall be located so that parts requiring service and adjustment are accessible and so that component parts can be readily removed for service or replacement. If access doors or panels are required to make service convenient, they shall be provided by the Contractor supplying the item requiring service.
- 6) Ductwork, Equipment and Piping below 7'-6" - above finished floor shall have a resilient material (foam rubber, etc.) attached to all potentially dangerous edges.

F. Electric Motors, Starters and Disconnects

- 1) Motors
 - a) All motors furnished under this section shall be built to NEMA standards and shall be U.L. tested and listed under Industry Standards for Construction, (E47479) Minimum Service factor acceptable shall be 1.15. Fractional horsepower motors shall be resilient mount type.
 - b) All motors shall be protected by internal thermal protectors with manual reset. Motor speed shall be 1750 rpm (nominal) unless otherwise specified. Bearings shall be pre-lubricated double shielded ball bearings.
 - c) Motors shall be selected for adequate starting torque for the intended application and all motors in outdoor locations shall have starting torque adequate for the intended application at the accepted winter outdoor design temperature. Unless otherwise specified all motors shall be open, drip-proof type selected for 40 deg. C. ambient with Class "A" insulation.
 - d) All motors shall be of horsepower voltage and phase as scheduled. Smaller motors shall be single phase.
 - e) Electric motors shall be the product of approved nationally recognized manufacturer.
- 2) Starters and Disconnects
 - a) Provision of starters and disconnects is defined on the electrical drawings. This contractor is advised to refer to the electrical drawings and specifications for specific starter and disconnect requirements. Starters and Disconnects which are not explicitly defined as the responsibility of any contractor shall be provided by the Electrical Contractor.
 - b) All starters, disconnects and combination starter/disconnects provided by this Contractor shall be provided in accordance with all applicable requirements of Division 16. Note that acceptable manufacturers defined under Division 16 apply to equipment provided by this contractor.
 - c) Starters, disconnects and combination devices provided by this contractor shall be installed at or on the equipment served, including all load side line voltage and all control connections, unless specifically indicated otherwise. The responsibility of the Electrical Contractor shall be limited to providing line side feeder to the disconnecting means or unit termination, and connection to the line side lugs.

- d) Disconnects, where provided by this contractor, shall have full cover interlock with operating handle, padlocking provision, and shall include solid neutral kit installed where equipment requires neutral conductor. All exterior disconnects shall be weatherproof, heavy duty type. Interior disconnects shall be general duty, fusible if required, and located in areas classified by the N.E.C. shall be U.L. listed for that classification. All other disconnects shall be heavy duty, fusible.
- e) Starters shall be provided with cover interlocked to operating handle and padlock provision where combination starter/disconnect types are utilized. All starters shall have overload elements on each ungrounded phase, selected on the basis of actual motor current - not on nominal motor ratings. All exterior starters shall be weatherproof, in NEMA 3R enclosure. Exterior starters shall be provided with remote HOA switch and run pilot lamp.
- f) Control transformers shall be provided for all equipment operating at or above 240 volts, phase-to-phase, if required for operation of equipment.
- g) Starters located in areas classified by the N.E.C. shall be U.L. labeled and listed as suitable for use under that classification.

G. Vibration Isolation

1) Vibration Isolation Systems

- a) Ductwork Isolation. Wherever ductwork is attached to a furnace or other piece of rotating or vibrating equipment, provide a flexible fabric connection made of material suitable for the application. Fabric connection shall be fastened with metal channels or angles and screws or bolts. Seal the fabric to the metal with sealant.

H. Identification

- 1) Identify all mechanical equipment with nameplate bearing equipment name and number, using 1-1/2" white Bakelite with 1/2" black letters permanently mounted in a conspicuous place. Use mechanical fasteners instead of adhesive to mount nameplates wherever possible.
- 2) Markings. Each duct system furnished and installed shall be identified, if the system is listed in the identification symbols list below. The direction of flow and identification of service shall be indicated by means of permanent tape conforming to ANSI A13.1 - 1981 and flow arrows. The markings shall be applied after all painting and cleaning of the piping and insulation is completed.
- 3) Location. The legend and flow arrow shall be applied at all valve locations at all points where ductwork enters or leaves a wall, partition, bulkhead, cluster of piping, or similar obstruction, and at approximately 30 foot intervals on duct runs with at least one in each space or room. The markings shall be located so as to be conspicuous and legible at all times from any reasonable point.
- 4) Identification Symbols

CD	Condensate Drain
OA	Outside Air
RA	Return Air
SA	Supply Air

EA Exhaust Air

I. System Balancing

- 1) Testing and Balancing. Air System Testing and Balancing Work will be performed for the installed system.

J. Tests and Adjustments. The Contractor shall conduct test of systems as required by codes, regulatory agencies and this specification. See ILHR 64.53. Tests shall be made with the medium and under pressure as stated in the test requirements. Notify the Contracting Officer and regulatory agencies prior to conducting tests. Contractor shall complete the attached certification form and submit to the Contracting Officer and include in operation and maintenance manual when tests have been completed.

- 1) Start-up of Duct System. All duct systems and plenums shall be thoroughly cleaned to remove construction dust and debris. Blow out the system by closing off some branches of duct work to over supply those remaining open to blow out dust accumulation. Verify that all fans are in the proper rotation and that wheels are running free and true.

CERTIFICATION OF TESTS AND ADJUSTMENTS

Contractor _____

Division of Work (Plumbing, Heating, Air Handling, etc.) _____

Project Name _____

Project Number _____

The Contractor named above certifies that the tests and adjustments indicated below have been completed in accordance with the specifications on the date indicated.

<u>Tests</u>	<u>Date</u>
Start-up of Air Systems	_____
Balancing and Adjustments	_____

Contract _____

Signed By _____

Date _____

K. Operation and Maintenance Instruction

- 1) The contractor shall instruct the Government maintenance staff in the operation and maintenance of the systems installed.
- 2) The instruction periods shall be scheduled after the operation and maintenance manuals have been available for review by the building maintenance personnel.
- 3) The separate trades shall schedule their respective instruction periods separate for each of the categories listed for instruction.
- 4) The instruction shall utilize the Operation and Maintenance Manuals and be presented by persons knowledgeable in the installation and operations of the equipment.
- 5) The temperature control portion of the instruction shall be presented
- 6) The instruction periods shall occur after the final inspection and the systems are operating properly.
- 7) Minimum instruction periods shall be:

<u>System</u>	<u>Number of Instruction Periods</u>	<u>Time Each</u>
Mechanical Air Systems and Equipment	1	4 hours

L. Requirements For Substantial Completion

- 1) Cleaning Equipment and Premises
 - a) Thoroughly clean all parts of the ductwork, grilles and equipment. Exposed parts which are to be painted shall be thoroughly cleaned of cement, plaster and other materials and all oil and grease spots shall be removed. Such surfaces shall be carefully wiped and all cracks and corners scraped out. Exposed metal work shall be carefully brushed down with steel brushes to remove rust and other spots and left smooth and clean.
 - b) Clean filters shall be installed in all equipment specified with filters.
 - c) Remove all construction debris, excess materials and equipment.
- 2) Operating and Maintenance Manuals
 - a) The contractor shall furnish to the Contracting Officer three operating manuals for furnished equipment. Information sheets shall be bound in standard 3-ring binders, labeled to show the contractor's name, address, regular business phone number, emergency phone number and date. Operating manuals shall be submitted prior to completion of the work to allow time for review. The manual shall contain the following information:

- a.1) A list (keyed with identification numbers used) of each item of equipment, which requires service giving the name of the item, model number, manufacturer's name and address and the name, address and phone number of the nearest representative or authorized service organization.
- a.2) A copy of the shop drawing for each item.
- a.3) A complete operating and maintenance manual with parts lists, wiring diagrams, lubrication requirements, and service instructions for each major item.
- a.4) Complete control diagrams with description of all operating sequences and control devices.
- a.5) Properly executed and registered manufacturer's warranties.
- a.6) A copy of air system balancing reports.
- a.7) A copy of signed certification of tests and adjustments.

M. Guarantee. All materials and workmanship shall be guaranteed for a period of one year after substantial completion. Where extended warranties are required, they shall be provided by the manufacturer or contractor as specified, in the equipment specification.

DIVISION 15
MECHANICAL

SECTION 15700
VENTILATION - AIR HANDLING

1. GENERAL

A. Scope. Applicable provisions of Division 1 shall govern work under this section. The contractor shall provide all items, articles, materials, operations or methods listed, mentioned or scheduled on the drawings and/or herein specified, including all materials, equipment and incidentals necessary to produce a complete and operating system. Refer to Section 15500 where applicable to this section.

B. Index

- 1. General
 - A. Scope
 - B. Index
 - C. Description of the Work
 - D. Shop Drawings
- 2. Materials and Methods
 - A. Ductwork
 - B. Duct Insulation
 - C. Operating Damper Devices
 - D. Temperature Control Wiring
 - E. Condensate Drain Piping
- 3. Equipment
 - A. High Efficiency Gas-Fired Furnace
 - B. Air Cooled Condensing Unit
 - C. Electric Fan Forced Heater
 - D. Electric Cove Heater
 - E. Exhaust Fans
 - F. Grilles, Registers, and Diffusers

C. Description of the Work

An LP gas-fired furnace with matching DX cooling coil and condensing unit will provide heating, ventilating, and air conditioning to the spaces. Electric heat and exhaust systems are provided.

D. Shop Drawings

1) Refer to Section 15500. Shop drawings are required on the following items:

- | | |
|-----------------------------------|----------------------------|
| Motorized Dampers | Flexible Ductwork |
| Manual Dampers | Duct Insulation |
| Grilles, Registers, and Diffusers | Electric Cove Heater |
| High Efficiency Gas-Fired Furnace | Exhaust Fans |
| Air Cooled Condensing Unit | Electric Fan Forced Heater |

2. MATERIALS AND METHODS

A. Ductwork

1) General

a) All duct work and sheetmetal housings shall be fabricated of prime, lock forming quality galvanized steel sheets unless specified otherwise. Gauges of metal and methods of construction and assembly shall be in a neat, workmanlike manner with all ducts run straight, level, and plumb on adequate hangers and supports to prevent sagging.

b) Pressure - Velocity Classification

	Static Pressure		
<u>Duct Class</u>	<u>Rating</u>	<u>Seal Class</u>	<u>Velocity</u>
Low Pressure	Up to 2"	B	Below 2500 fpm

c) Duct Leakage and Sealants. Duct work leakage shall not exceed 5% of air flow. All ducts must be sealed with mastic or mastic and tape in accordance with the schedule (in b) above to produce the specified degree of tightness. Sealants shall be compounds specifically produced for sealing duct systems and shall be applied in strict accordance with the manufacturer's recommendations. Installed ductwork found to have leakage in excess of the specified limit will be rejected and the contractor will be required to make acceptable repairs to bring the duct leakage within the specified limits.

d) Turning Vanes. Provide turning vanes at all short throated elbows and at every other location where the air stream is required to make abrupt directional change. Air turns shall be built and installed in accordance with the SMACNA Duct Construction Standards and shall have a minimum clearance between vanes of 1-1/2". Manufactured turning vanes with smaller clearances between vanes are not acceptable. Fasten vanes to runners and runners to ducts with rivets, bolts or screws in a manner that will prevent vibration and noise.

e) Balancing Dampers. Suitable volume dampers shall be installed at all branches and at locations shown or where necessary for balancing. Standard damper quadrant regulators with indicator and locking screw shall be used on exposed ducts. Where dampers occur in concealed spaces provide Young Regulator or Ventlock damper regulators with flush prime painted cover plates. Damper construction shall be as recommended by the manufacturer for pressures and velocities in the system. Dampers shall be as manufactured by American Warming and Ventilating Co., Model VC-21, Nailor, or equal.

f) Flexible Connections. Furnish and install flexible fabric connections where duct attaches to any mechanical equipment. Attach fabric with metal angles or collars and screws. Fabric shall be fire and weather resistant and made of a material suitable for system temperatures to be encountered. Fabric material as manufactured by Vent-Fab, Duro-Dyne, or equal.

g) Weatherproofing. Ducts exposed to weather shall be soldered or caulked watertight with silicon sealant. Where ducts pass thru the roof provide a 3" deep watertight condensate pan. Where ducts connect to outside wall louver, pitch the

duct so water will drain to louver and seal bottom joints and seams watertight within 3' of louver.

- h) Manufactured Duct Joining Systems. Manufactured duct joining systems using roll formed angle corners, cleats and gaskets similar to Ductmate Industries Product or Ward are acceptable if they meet the SMACNA Standards for the duct classification of the system.
 - i) Branch Taps. Branch runs from main duct shall be made with proportional parallel flow branch connections as shown in the SMACNA Duct Construction Standards. Branch taps shall be made with 45 deg. entry tap, conical tap, bell-mouth tap or other tap fitting with enlarged area of entry to main. Direct "dovetail" joint connection of branches to main are not acceptable.
 - j) Duct Pressure Losses. Duct work shall be fabricated and erected in a manner so as to minimize duct pressure losses. Elbow throat radius must equal duct width or turning vanes shall be provided. Changes in duct dimensions shall be gradual; not to exceed 20 deg. in diverging flow or 30 deg. in converging flow. Provide streamline air flow enclosures around obstructions that pass thru ducts. Special care shall be given to duct connections to air handling equipment to minimize entry and discharge losses. Follow manufacturer's instructions exactly.
 - k) Air Mixing. Duct work shall be arranged so that converging air streams shall be thoroughly mixed prior to entering the furnace. If duct connections cannot be made in a manner so as to provide adequate mixing, deflection devices and baffles shall be provided to accomplish the mixing.
- 2) Low Pressure Duct Work. Low pressure duct work shall be fabricated and installed in accordance with the current SMACNA low pressure duct construction standards. All duct joints to be sealed with mastic or caulk intended for such use.
- 3) Flexible Duct Work
- a) Flexible duct work may be used for final connection to ceiling diffusers.
 - b) Flexible duct lengths must be as short as possible to make connections and shall not exceed 6' without approval. Excessive lengths or bends will not be accepted. Use of flexible duct materials shall be limited to ceiling spaces unless otherwise approved.
 - c) All flexible duct materials shall be U.L. listed as Class I air duct under Standard 181 and shall meet the requirements of NFPA 90A and 90B. Installation shall be done in a neat and workmanlike manner as recommended by the manufacturer. Connections and joints shall be made using proper collars, clamps and adhesives as listed by U.L. Strap clamps and sealer shall be used for all connections. Tapes shall be SMACNA and U.L. listed and shall be of the proper type for the flexible duct used. Joints in insulated duct shall maintain the integrity of the insulation and vapor barrier. Flexible ducts shall be installed in strict accordance with the current Flexible Duct Installation Standards.
 - d) Flexible ducts shall be corrosion resistive steel wire spring spiral with multiple layer polyester film or glass fiber covering meeting the Air Diffusion Council Test code FD72-RI. Low pressure systems shall be rated for 4" w.g. positive, 2" w.g. negative and 5000 fpm. Insulated systems shall have adequate covering of fiberglass and a

vinyl or reinforced aluminum foil vapor barrier to yield an R-value of 9.0 or higher. Flame spread and smoke ratings of flexible piping system shall be suitable for application.

- e) Flexible ducts for specific application shall be in accordance with the following schedule:

Insulated Low Pressure - Thermaflex M-KE

- 4) Duct Tapes. Duct tapes shall be used only for purposes intended and shall not be used as a substitute for accepted methods of joining sheet metal duct sections. Duct tapes may be used for secondary sealant of joints and seams but the sheet metal duct work shall be reasonably air tight within its pressure classification prior to the application of tapes. Tapes shall not be used in any location where mechanical strength or support is dependent upon tape. All duct tapes shall meet the requirements of NFPA and shall be in accordance with the performance and application standards of the sheet metal and Air Conditioning Contractor's National Association. Tapes shall be of the proper type as recommended by the manufacturer for the temperature, humidity and other ambient requirements of the application.

B. Duct Insulation

1) General Requirements

- a) The work covered by this specification consists of furnishing all material, labor, equipment and accessories necessary to provide complete installation of all insulation of air handling systems, as herein specified and as indicated on the drawings, schedules and details.
- b) Insulation materials shall be Manville, Owens-Corning, Armstrong, CertainTeed, Knauf or products of equal quality and performance.
- c) All interior and exterior insulation systems shall have a composite fire and smoke hazard rating (FHC) of flame spread - 25 and smoke developed - 50 when tested by U.L. in accordance with ASTM E-84 and shall meet the requirements of NFPA 90A and 90B standards and FHA as tested by U.L.
- d) Insulation thicknesses are based on a thermal conductivity ('k' factor - BTU/inch thickness/(hr/sq.ft./°F) as specified, at 75° F. mean temperature. If insulating materials of different thermal properties are used, the thickness of the insulation shall be adjusted to provide the overall insulating efficiency of the material specified at the scheduled thickness.
- e) All insulation shall be applied by skilled workmen experienced in insulation application in accordance with the manufacturer's instruction.
- f) Insulation shall be installed over clean and dry surfaces. Insulation shall not be applied until the duct system is protected from weather conditions. Do not store or install lined duct in areas which are not protected from weather conditions.
- g) Duct sizes indicated are inside free area. If interior insulation systems are used, the duct size must be increased to maintain the free area.

- h) Provide joints in insulation at access doors and panels. Damper quadrants and operators on ducts with exterior insulation shall be extended to the outside of the insulation. Provide for the viewing of all nameplates, controls and instruments.
- i) Insulation shall be continuous through wall and ceiling openings and sleeves.
- j) All surfaces shall have insulation applied with a continuous, unbroken vapor seal. When mechanical fasteners are used, they shall be sealed with tape over the fastener to provide complete vapor barrier. Hangers and supports must be adequately insulated and vapor sealed to prevent condensation.
- k) All outside air intake ducts shall be insulated from intake to unit. Any mixed air ductwork (outside air and return air) shall be insulated as required for outside air ductwork.
- l) Install duct liners on all supply, return and exhaust air ductwork connecting to ventilation equipment for 15 lineal feet out from unit; and at other points indicated on the drawings.
 - l.1) Joint where liner ends and bare duct starts, to be flush and smooth to air flow. Any end of the liner exposed to air flow shall be sealed to prevent erosion.
- m) Ducts having acoustic duct liner need not be insulated on exterior, unless additional insulation is required to maintain the minimum insulation efficiency.
- n) All internal duct insulation shall be in accordance with the current SMACNA Duct Liner Application Standard.
- o) Concealed ductwork means ductwork in the attic, in a soffit or vertical chase, or a normally unoccupied room such as a storage room or janitor's closet.
- p) Exposed ductwork includes all ductwork visible, or partially visible, in normally occupied finished spaces, to include all ductwork in mechanical rooms and exposed ductwork in any space which may be subject to abuse located within 8' of the floor.

2) Insulation Materials

a) Outside Air Ducts

- a.1) Manville "Microlite" FSK fiberglass blanket or CertainTeed standard duct wrap, with vapor barrier finish jacket, adhered to duct exterior with insulation bonding adhesive with joints lapped and sealed with pressure sensitive tape for complete vapor barrier.
- a.2) Ductwork including round, shall be additionally secured at bottom with mechanical fasteners, 16 inches o.c.
- a.3) Thermal conductivity: 1-1/2# density = R-4.16/K-0.24 per inch, at 75° F. mean temperature.

b) Cooling Supply Air

- b.1) Manville "Microlite FSK" fiberglass blanket or CertainTeed standard duct wrap, faced, adhered to duct exterior with insulation bonding adhesive joints lapped and sealed for complete vapor barrier. Total R-value shall meet or exceed 9.0.
- b.2) Ductwork including round, shall be additionally secured at bottom, with mechanical fasteners, 16 inches o.c.
- b.3) Thermal conductivity: 1.0# density = $R = 3.6/K = 0.275$ per inch at 75° F. mean temperature.

c) Duct Liners, Indoors (5000 FPM Maximum):

- c.1) CertainTeed "Toughgard" duct liner, 1-1/2# density flexible glass fiber duct liner, with black matt fire resistant coating to air stream containing an EPA registered anti-microbial agent.
- c.2) Insulation shall be adhered to inside surfaces of duct using fire resistant bonding adhesive with 100% coverage, all joints to be butt tight, and with mechanical fasteners 16" o.c.
- c.3) Liner shall have a maximum Fire Hazard Classification of Flame spread 25 and smoke developed 50 when tested in accordance with NFPA 90A and 90B procedures by U.L. test 723.
- c.4) Liner shall be rated for 5000 FPM per U.L. 181 Erosion Test.
- c.5) Liner shall have sound absorption coefficient of .68 at 500 cps frequency based on Type A per ASTM E795.
- c.6) When liner is applied to ducts with air velocities exceeding 2000 fpm all butt edges of insulation shall be coated with adhesive and pressed together. All leading edges must be covered with metal nosing strip. Materials and methods of applications must be in strict accordance with the manufacturer's recommendations for high velocity duct linings. All raw edges must be thoroughly coated with adhesive to prevent erosion. Torn or damaged insulation must be replaced.
- c.7) Thermal conductivity: 1-1/2# density = $R = 3.57/K = 0.28$ per inch at 75° F. mean temperature.

C. Operating Damper Devices

- 1) Motorized Dampers. Dampers shall be securely fastened to prevent springing. Seal dampers and frames to duct or opening with suitable caulking material. Exercise care in the installation of dampers to prevent binding or leakage. Dampers shall be low leak type where installed behind intake louvers equal to Ruskin CD50 series or Venco VCD-33. Damper shall be fabricated from 5" x 1" extruded aluminum channel with mounting frame, concealed linkage, blade and jamb seal. 1/10% AMCA air leakage.

D. Temperature Control Wiring

- 1) All wall mounted temperature control devices such as thermostats, fan switches, etc. shall be installed in or on flush outlet boxes with all terminations made within junction or device box.
- 2) All temperature control conductors shall be supported by metallic hanger straps secured to the building structure at intervals not exceeding 5 feet on center. All control wiring in all areas below finished ceiling shall be in conduit.
- 3) All line voltage conductors shall be installed in raceways. All raceways shall comply in all aspects to the provisions of Division 16, including materials and installation.
- 4) All line voltage terminations made by the control contractor shall be made in complete compliance with the requirements of Division 16 specifications, the National Electrical Code and all state and local codes having jurisdiction. Where installed in raceway, all splices, fittings and terminations in temperature control tubing and conductors shall be made within the device or in junction boxes. Boxes shall be accessible from the finished surface of the facility.

E. Condensate Drain Piping. Piping for condensate drains shall be schedule 40 PVC with solvent socket.

3. EQUIPMENT

A. High Efficiency Gas-Fired Furnace

- 1) Furnish complete installation of the equipment covered by this Section, with all auxiliaries, ready for Government's use.
- 2) Furnace shall be 91% minimum annual fuel utilization efficiency. Furnace shall be LP gas-fired type with capacity not less than shown on the drawings. Furnace shall be AGA approved and UL listed. Furnace cabinet shall be furniture-grade steel with rust protective coating and with a finish coat of baked enamel.
- 3) The combustion chamber shall be aluminized steel with stainless steel secondary heat exchanger. Provide air and gas inlet valves, hot surface igniter, and flame sensor to verify combustion. The heat exchanger shall be warranted for 10 years from date of Government's acceptance. The blower shall be centrifugal type, rated for "high" static pressure for use with a cooling coil, and shall be belt-driven or directly connected to a changeable-speed motor of capacity not less than that shown on the drawings.
- 4) Controls shall include the following:
 - a) 110 to 24 volt transformer.
 - b) High-limit switch and fan control.
 - c) 100% shutoff gas valve with separate automatic safety shutoff valve.
 - d) Electric gas valve and pressure regulator.
 - e) Provide cooling relay for interlock with the condensing unit.
- 5) Provide cooling coil casing to match the furnace, supply air connection with direct-expansion cooling coil of capacity not less than shown on the drawings and compatible to the furnace and condensing unit. Coil shall be provided with refrigerant expansion valve. Provide precharged line sets to connect the coil to the condensing unit.

- 6) Provide 2 or 3 inch PVC air intake depending on length and vent pipe to the outside. Provide vent/intake wall terminal kit or concentric thru roof vent/intake as furnished by the manufacturer or pipe as detailed on drawings.
- 7) Control
 - a) Provide a Honeywell T7300 programmable commercial thermostat with occupied/unoccupied modes of operation and automatic switchover. Provide heat/cool/auto and fan on/off/auto subbase. Thermostat shall have 3 hour override to occupied mode. Provide clear plastic locking cover.

- b) In the occupied mode, the outside air damper shall be open to the minimum position, the furnace blower shall run continuous, interlocked fans shall run and furnace or condensing unit shall cycle to maintain set point. In the unoccupied mode, cooling shall be locked out, interlocked exhaust fans off, fresh air damper closed and furnace blower shall cycle on a call for heat from the reduced set point. Where units are twinned, the furnaces and condensing units are controlled in two stages.
- 8) Install the furnace level and on the isolation mounting pads furnished with the furnace. Install the base insulation pad as recommended by the manufacturer. Supply plenum shall be lined and the return duct shall be lined. Install the air intake and vent pipe, and extend the drain from the furnace to an adequate drain point. Provide adequate room in front of the furnace for service and to the sides for pipe and ductwork required. Install the coil casing and coil on the furnace for units providing cooling. Provide a plastic pipe drain from the coil to an appropriate drain. Provide a trap in the drain pipe.
- 9) Operate the furnace and check operation of all controls, including the safety controls. Adjust the fan speed to supply the air quantity called for. Make the readings and adjustments called for under Testing and Balancing.
- 10) Unit shall include 1" filter frame and throw-away filter.
- 11) Unit shall be as manufactured by Lennox or equal acceptable by Wisconsin DILHR as a vent sealed combustion chamber appliance per ILHR 51.01 (29a) for installation without rated enclosure.

B. Air Cooled Condensing Unit

- 1) Provide and install an air cooled condensing unit as shown.
- 2) The condensing unit shall consist of a hermetic compressor, condenser coil, vertical discharge direct drive propeller type condenser fan, crankcase heater, service valves, filter drier and sight glass all enclosed in an enameled galvanized steel cabinet. The compressor unit shall have an internal and external overload protection, high and low pressure switch, internal spring mounts and external resilient mounts. Condensing unit shall be capable of operating at 35° F. Provide five year extended warranty on refrigeration cycle. Provide coil guard for condenser coil.
- 3) Unit shall be ARI listed and rated. Electrical components shall be U.L. listed.
- 4) Equipment shall be as manufactured by Lennox, Bryant, or Carrier.

C. Electric Fan Forced Heater

- 1) Provide U.L. listed heavy-duty, wall or ceiling mounted forced-air electric unit heater as shown on plans and scheduled.
- 2) Unit shall consist of corrosion resistant steel sheathed type elements mechanically bonded to common corrosion resistant steel fins, direct driven axial flow fan blade with totally enclosed motor, combination return and supply grille constructed of steel, and 16 gauge steel corrosion resistant casing.
- 3) Provide automatic reset thermal overload protection, disconnecting switch, low voltage control transformer, built-in circuit breakers, and built-in contactors.

- 4) Heater shall be installed according to manufacturer's recommendations and applicable local and state codes.
- 5) Units shall be as manufactured by Markel, Berko, or Qmark.

D. Electric Cove Heater. Provide U.L. labeled and NEMA certified electric cover heater as shown and scheduled. The heaters shall be constructed of .062" thick aluminum. The heater surface shall be concave in contour and sawtooth in profile. The heating element shall be of nichrome wire, embedded in magnesium oxide powder, enclosed and sealed in aluminum metal tubing. The finish shall be of silicone baked white enamel. Heater shall be as manufactured by Markel, Berko, or Qmark.

E. Exhaust Fans

- 1) Ceiling exhaust fans shall be centrifugal direct driven type with acoustically treated housing complete with backdraft damper, grille, resiliently mounted motor wheel assembly. Motor shall be permanent split capacitor with overload protection and permanently lubricated bearings. Backdraft dampers to have a maximum opening range of < 90°.
- 2) Air quantity and noise level ratings shall be HVI certified and listed by U.L. Sound levels shall not exceed the following limits:

Up to 90 cfm - 1.5 sones
90 -150 cfm - 3 sones
150 - 300 cfm - 5 sones

- 3) Fans shall be as manufactured by Broan, Greenheck, or Cook.

F. Grilles, Registers and Diffusers

- 1) Grilles and diffusers shall be constructed with welded hairline joints and a high quality finish as scheduled. Screws and fasteners (except for mounting grille to walls) on the face of grilles are not acceptable.
- 2) Grilles and registers are to be selected to give draft free air delivery at an acceptable sound level with the air volume, throw and temperature conditions indicated. Grille manufacturer shall make sufficient data on grille performance available to balancing contractor to permit him to properly make air volume adjustments with standard meters and tools.
- 3) Ceiling diffusers shall have fixed pattern and volume control dampers unless otherwise specified. Volume control devices shall be operable with a key or allen wrench thru the face of the grille. Grilles shall fit securely against surrounding surface and shall be fitted with sponge rubber gaskets to prevent streaking.
- 4) Grilles shall be as manufactured by Krueger, Metal-Aire, Tuttle & Bailey, Price, Kee's, Nailor, Air Guide, Titus or Anemostat.

DIVISION 15
MECHANICAL

SECTION 15800
TESTING AND BALANCING

1. GENERAL PROVISIONS

A. Scope. Applicable provisions of Division 1 shall govern work under this section. The contractor shall provide all items, articles, materials, operations or methods listed, mentioned or scheduled on the drawings and/or herein specified, including all materials, equipment and incidentals necessary to produce a complete and operating system. Refer to Section 15500 which applies to this section.

B. Index

1. General Provisions
 - A. Scope
 - B. Index
 - C. Description of the Work
 - D. Related Work Elsewhere
2. Special Requirements
 - A. Applicable Codes
 - B. Drawings
 - C. Qualifications
 - D. Execution
 - E. Guarantee
3. Testing Requirements & Procedures
 - A. Air Systems
 - B. Reports
 - C. Finally

C. Description of the Work

An LP gas-fired furnace with matching DX cooling coil and condensing unit will provide heating, ventilating, and air conditioning to the spaces. Electric heat and exhaust systems are provided.

D. Related Work Elsewhere

See Sections 15500 and 15700 for related work by other contractors.

2. SPECIAL REQUIREMENTS

A. Applicable Codes. See ILHR 64.53 for required balancing procedures related to energy conservation.

B. Drawings

- 1) The Contractor shall review the drawings and specifications for the work and at least seven days prior to bidding shall advise the Contracting Officer of any deficiencies or system details that would prevent proper system balancing. The contractor shall make sufficient visits to the job site during construction to become familiar with system details and to determine that valves, dampers, access doors, gauge ports, test holes, baffles, and other elements are correctly installed so that he can perform his work properly.

- C. Qualifications. All test and balance work shall be performed under the supervision of a certified NEBB or AABC manager in accordance with agency standards and procedures or under the direct supervision of a Professional Engineer registered in the State of Wisconsin who is fully qualified in the area of fluid systems testing and balancing.

D. Execution

- 1) Workmanship. Procedures shall be in accordance with accepted industry practice and with the standards of manufacturing and contracting association applicable to the work.
- 2) Instruments. Test instruments shall be recently calibrated accurate and of the correct type for measurement to be taken.
- 3) Reports. Test reports shall be neatly type on forms similar to those recommended by the Associated Air Balance Council. The forms shall include but not be limited to the following information:
 - a) Name of job.
 - b) Name of Mechanical Contractor
 - c) Name of Fluid Balancing Contractor
 - d) Date of tests and outdoor temperature.
 - e) Name of technician making tests.
 - f) List of test instruments used.
 - g) Identification of all units with location, manufacturer's name, model number and serial number.
 - h) Information on all motors with manufacturer's name, model number, horsepower, rpm, voltage, rated draw, actual draw.
 - i) CFM readings as designed, as originally measured and actual final readings and duct traverse sheets for each major zone.
 - j) Furnace unit return air, outdoor air, mixed air, and supply air CFM, dry bulb and wet bulb temperatures in all modes of operation.
 - k) Register, grille and diffuser list with room number, manufacturer's model number, size, area, design cfm, design velocity and test results.
- 4) Required Testing and Balancing. This contractor shall provide testing, adjusting and balancing services for all air and water systems throughout the building. The extent of systems involved is shown on the drawings and shall include all the following applicable to the project.
 - a) Air supply systems.
 - b) Air return systems.
 - c) Air exhaust systems.
- 5) Test Verification. The Contracting Officer may require verification of tests on arbitrarily selected readings of equipment, air systems and water systems. These verification tests

shall be made in the presence of the Contracting Officer on readings selected by the Contracting Officer on up to 10% of the readings taken. If verification tests are not satisfactory, the contractor will be required to re-balance the systems before repeating the verification tests at no additional cost to the Government.

- E. Guarantee. The system shall be guaranteed to be balanced in accordance with the test reports submitted and functioning as shown or specified. For a period of one year after acceptance the contractor will be required to re-adjust systems which demonstrate a deficiency in the system balance as determined by the Contracting Officer at no cost to the Government.

3. TESTING REQUIREMENTS AND PROCEDURES

- A. Air Systems. Systems are to be balanced by first adjusting the total flow at the fan, then by adjusting main dampers and branch dampers. Only final minor adjustments are to be made with register and diffuser dampers. Balancing of the air system shall be accomplished without causing objectionable air noise. Baffles and orifice plates required for proper air balance will be furnished and installed by this contractor. Basically the following tests and adjustments are required.
- 1) Test all fan systems to provide proper cfm.
 - 2) Adjust fresh air, return air and exhaust dampers to provide proper air quantities in all modes of control. Verify that gravity backdraft dampers have a maximum opening range of < 90°.
 - 3) Test and record fresh air, return air and mixed air temperature. Advise Contracting Officer if baffling is necessary to produce satisfactory air mixing.
 - 4) Make pitot tube transverse at all main supply and return ducts to set proper air quantities. Adjust all zone and branch dampers to proper CFM.
 - 5) Test and adjust each register, grille, diffuser or other terminal equipment to within 5% of design air quantity. Each opening shall be defined on the test report by size, manufacturer's model, room location, design cfm and actual cfm. Outlets shall be adjusted to minimize objectionable drafts.
- B. Reports. Provide 3 copies of the complete balancing and testing reports to the Contracting Officer. Report shall be neatly typed and bound suitable for a permanent record. Report forms shall be similar to those provided by the Balancing Council as previously approved by the Contracting Officer and shall contain complete test data and equipment data as specified.
- C. Final Checkout. The Contractor shall leave the system operating in complete balance with water and air quantities as shown on drawings. Lock all damper quadrants in proper position. Secure all automatic damper linkages in proper position to provide correct operating ranges. Proper damper positions shall be marked on ducts with permanent indication. Notify the Contracting Officer of any areas of marginal or unacceptable system performance.

Division 16 - Electrical

SECTION 16000

GENERAL REQUIREMENTS

INDEX

Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 specifications sections apply to work of this section.

- ...Section 16000 - General Requirements
- ...Section 16025 - Raceways and Fittings
- ...Section 16050 - Wires and Cables
- ...Section 16075 - Grounding
- ...Section 16125 - Temporary Service
- ...Section 16140 – Electrical Service
- ...Section 16150 - Panelboards and Safety Switches
- ...Section 16200 - Lighting
- ...Section 16225 - Identification
- ...Section 16250 - Wiring Devices
- ...Section 16600 - Electric Dryers
- ...Section 16975 - Abbreviations and Mounting Heights

PART 1 GENERAL

1.01 WORK INCLUDED

- A. In general, the work includes: Electrical work, materials, and operations as indicated on the drawings and as specified in the following articles of Division 16.
- B. Job information: obtain at project site including:
 - ...conditions affecting this section of the work
 - ...accessibility
 - ...storage space
- C. This Section of the specifications applies to all electrical work.
- D. Electrical work indicated in other sections of the specifications to be done by the contractor shall be included in the contract.

1.02 INTENT OF DRAWINGS AND SPECIFICATIONS

- A. These specifications and attendant drawings are intended to cover a complete installation of systems. The omission of expressed reference to any item of labor or materials necessary for the proper execution of the work in accordance with present practice of the trade shall not relieve the contractor from providing such additional labor and materials.

- B. If an item is either called for in the specifications or shown on the plans, it shall be considered sufficient for the inclusion of said item in this contract. If a conflict exists within the Specifications or exists within the Drawings, the Contractor shall furnish the item, system, or workmanship which is the highest quality, largest, or most closely fits the Government's intent as determined by the Contracting Officer.

1.03 DRAWINGS

- A. The electrical drawings do not attempt to show the complete details of project construction which affect the electrical installation.
- B. The contractor shall refer to the architectural, civil, structural, and mechanical drawings for additional details which affect the proper installation of this work.
- C. The contractor is cautioned that diagrams showing electrical connections and/or circuiting are diagrammatic only and must not be used for obtaining lineal runs of wire or conduit.
- D. Wiring diagrams do not necessarily show the exact physical arrangement of the equipment.

1.04 REFERENCE STANDARDS

- A. Abbreviations of standards organizations referenced in this and other sections are as follows:

ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
EPA	Environmental Protection Agency
ETL	Electrical Testing Laboratories, Inc.
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
ISA	Instrument Society of America
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
UL	Underwriters Laboratories, Inc.
TIA	Telecommunication Industry Association
EIA	Electronic Industry Association

1.05 CODES, FEES, AND SALES TAX

- A. The electrical installation shall comply with rules and regulations of the latest editions

of the Occupational Safety and Health Act, National Electrical Code, State Electrical Code, Local Municipal Code, the Electrical Utility furnishing electrical energy to this project, other applicable National Fire Protection Association Codes, National Electrical Safety Code, present Manufacturing Standards (including NEMA), and any other board having jurisdiction over the electrical installation.

1. Most recent adopted edition of applicable codes and publications include, but are not limited to:
 - a. National Electrical Code.
 - b. Americans with Disabilities Act.
 - c. NFPA 101 Life Safety Code.
 - d. Guidelines for Construction and Equipment of Hospitals and Medical Facilities.
 - e. ANSI A17.1 Safety Code for Elevators and Escalators
 - f. BOCA National Building Code.
- B. The contractor shall not assume that any drawing or specification forming a part of the contract documents authorizes the violation of any code, regulation, or standard. Where conflicts arise, it shall be deemed that the contractor has estimated the cost of all work to be completed in accord with the prevailing code.
- C. The contractor shall be licensed to perform electrical work and shall pay all required fees and sales or use tax as applicable to this branch of work.
- D. Upon completion of the work, the contractor shall deliver to the Government without cost, all required certificates of inspection and approval.

1.06 MATERIAL AND EQUIPMENT

- A. All material and equipment shall be new and of the quality used for the purpose in good commercial practice, and shall be standard product of reputable manufacturers.
- B. Each major component of equipment shall have the manufacturer's name, catalog number, and capacity of rating, on a nameplate securely affixed on the equipment in a conspicuous place. All material shall have a U.L. label where U.L. tests exist.
- C. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the Contractor is responsible for all costs involved in integrating the equipment or accessories into the system and the assigned space and for obtaining the performance from the system into which these items are placed.

1.07 SUBSTITUTIONS AND APPROVAL OF MATERIALS

- A. See Division One for explanation of procedure. Further, the following shall apply:

1. All pertinent information shall be forwarded to the Contracting Officer in triplicate for review and approval. This information shall be similar in format to shop drawings. Should information be lacking, approval request will be denied.
 2. The Contracting Officer will have the right to determine the acceptance of material. The Contracting Officer shall not be held responsible for approval requests nor is he guaranteeing that approval requests will be reviewed in time for bidding. All reasonable attempts will be made to review products in time for approval.
- B. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the Contractor is responsible for all costs involved in integrating the equipment or accessories into the system and the assigned space and for obtaining the performance from the system into which these items are placed.

1.08 APPROVAL OF CHANGES TO DRAWINGS OR SPECIFICATIONS

- A. Should any change in drawings or specifications be required to comply with National, State or Local regulations and/or field conditions, the contractor shall refer same to Contracting Officer for approval before any work which deviates from the original requirements of the drawings and specifications is started. In the event of disagreements as to the necessity of such changes, the decision of the Contracting Officer shall be final.

1.09 DAMAGE TO OTHER WORK

- A. The contractor will be held rigidly responsible for all damages to the work of his own or any other trade resulting from the execution of his work. It shall be the contractor's responsibility to adequately protect his work at all times. All damages resulting from his operations shall be repaired, or the damaged portions replaced, by the party originally performing the work (to the entire satisfaction of the Contracting Officer), and all cost thereof shall be borne by the contractor responsible for the damage.

1.10 NOT USED

1.11 NOT USED

1.12 NOT USED

1.13 DATES OF COMPLETION

- A. The contractor shall meet all completion dates established by the Contracting Officer and shall furnish all labor of all classes, required to meet such schedules and completion dates. Further, the contractor shall familiarize himself with the delivery

dates established by the manufacturers of materials and equipment which shall be ordered and expedited as required to conform with scheduling and completion dates.

1.14 CLEAN-UP & PAINTING

- A. The contractor shall at all times keep the premises free from excessive accumulation of waste materials or rubbish resulting from his work, including tools, scaffolding, and surplus materials; and he shall leave his work room clean. At the time of final clean-up, all fixtures and equipment shall be thoroughly cleaned and left in proper conditions for their intended use.
- B. All final clean-up, washing, painting, etc., shall be scheduled at a time when project is substantially complete and the possibility of additional soiling does not exist. The contractor shall be responsible for the condition of all electrical equipment until acceptance of project by Government.
- C. Clean interior of all panelboards, pull boxes, equipment enclosures, and all other debris resulting from electrical work.
- D. Wash and wipe clean all lighting fixtures, lenses, and lamps.
- E. All equipment shall have factory applied finish. Damaged finishes shall be refinished or replaced.

1.15 TESTS

- A. The contractor shall provide all instrumentation, labor, and conduct all tests required under these specifications. All instrumentation and personnel required for testing shall be provided by the contractor, and all tests shall be conducted in the presence of the Contracting Officer or his authorized representative. All tests shall be made before any circuit or item of equipment is permanently energized.
- B. Circuits shall be phased out and loads balanced within plus or minus 10% on each phase.
- C. All phase conductors shall be entirely free from grounds and short circuits.
- D. Inspect the ground system for adequate termination at all devices.
- E. See Section 16075 - Grounding for further requirements.

1.16 SHOP DRAWINGS

- A. Submit to the Contracting Officer for review, six (6) copies of manufacturer's shop drawings for the following:
 - 1. Lighting Fixtures and Lamps
 - 2. Electronic Ballasts

3. Panelboards
4. Electric Hand Dryers

- B. Contractor shall review all shop drawings and mark with his approval before submitting to the Contracting Officer. Submit shop drawings complete in brochures with proper identification. All shop drawings of each equipment type shall be compiled by the contractor and submitted for approval at one time. The contractor submitting shop drawings shall be responsible for the accuracy of the material. The Contracting Officer's review will assist the contractor to assure the intended materials meet the project requirements.

1.17 DRAWINGS OF OTHER TRADES

- A. The contractor shall consult the drawings and specifications of the work for the various other trades; field layouts of the parties performing the work of the other trades, their shop drawings; and he shall be governed accordingly in laying out his work.

1.18 FIELD MEASUREMENTS

- A. The contractor shall take all field measurements necessary for his work and shall assume full responsibility for their accuracy.

1.19 STRUCTURAL INTERFERENCES

- A. Should any structural interferences prevent the installation of the outlets, running of conduits, etc., at points shown on the drawings, the necessary minor deviations therefrom, as determined by the Contracting Officer, may be permitted. Minor changes in the position of the outlets or equipment if decided upon before the contractor has done any work shall be made without additional charge.

1.20 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

- A. Before submitting a bid, the contractor shall familiarize himself with all features of the building and site which may affect the execution of his work. No extra payment will be allowed for the failure to obtain this information. If in the opinion of the contractor there are omissions or errors in the plans or specifications, the contractor shall clarify these points with the Contracting Officer before submitting his bid.

1.21 GUARANTEE

- A. The contractor shall unconditionally guarantee his work and all components thereof, excluding lamps, for a period of one year from the date of substantial completion. He shall remedy any defects in workmanship and repair or replace any faulty equipment which shall appear within the guarantee period to the entire satisfaction of the Contracting Officer at no additional cost.

1.22 RECORD DRAWINGS

- A. The contractor shall keep a record of all conduit routes, wiring, and any other items

of possible interest showing the recorded "as built" installation of the electrical system. A copy of these records shall be turned over to the Government at the completion of the project.

1.23 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Assemble material in new three-ring binders, using an index at the front of each volume and tabs for each system or type of equipment. In addition to the data indicated in the General Requirements, include the following information:
1. Copies of all approved submittals.
 2. Manufacturer's wiring diagrams for electrically powered equipment.
 3. Records of tests performed to certify compliance with system requirements.
 4. Certificates of inspection by regulatory agencies.
 5. Parts list for manufactured equipment.
 6. Preventative maintenance recommendations.
 7. Warranties.
 8. Additional information as indicated in the technical specification sections.

1.24 REJECTION

- A. Nothing herein contained shall be construed to relieve the contractor from furnishing a complete and acceptable electrical wiring system in all its categories. The Contracting Officer will condemn and reject any materials or labor which are or may become detrimental to the accomplishment of the intents of these specifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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Division 16 - Electrical

SECTION 16025

RACEWAYS AND FITTINGS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. Install a complete raceway system as required to provide circuiting and switch arrangements indicated on the plans.

PART 2 PRODUCTS

2.01 CONDUIT

- A. Electrical metallic tubing (EMT) is permitted to be used in sizes 1-1/4" and smaller for power systems, and in sizes 4" and smaller for telecommunications systems. Raceway for power systems in sizes 1-1/2" and larger, and raceway for telecommunications systems 4" and larger shall be heavy wall rigid (HWR) or intermediate metallic conduit (IMC).
- B. All conduit installed in concrete poured on grade, or in contact with earth, shall be Schedule 80 PVC or heavy wall rigid.
 - 1. PVC conduits shall not be allowed in poured concrete other than on grade.
 - 2. PVC conduits shall terminate to metal elbow prior to exiting concrete or earth.
- C. All conduit concealed within walls, concrete block or other material (such as wood frame, metal frame, or brick construction) shall be metal meeting the requirements previously stated.
- D. All exposed conduit shall be metal unless noted otherwise.
- E. All conduit installed in poured concrete walls shall be heavy wall rigid conduit securely fastened to the re-bar and forms for proper support.
- F. All metal conduit shall be galvanized.
- G. Minimum conduit size is to be 3/4" for branch circuit wiring.
 - 1. Conduit size of 1/2" may be utilized for switchleg wiring.
- H. Branch circuit conduit fill shall be determined using N.E.C. values for Type THW insulation regardless of insulation type used, (except for a single 2 or 3 wire circuit for motors).
- I. Flexible metal conduit for equipment connections shall be all steel 1/2" minimum nominal trade size. Length shall not exceed 24" for connection to motorized

equipment; minimum of 6' in length for lighting fixtures; ground liquid-tight where exposed to moisture or water.

1. Adhere to restrictions of NEC Articles 517-13(b) and 250-91(b), as well as other applicable articles, regarding use and grounding of flexible metal conduit.
- J. A green equipment ground shall be installed in all conduits.
1. Bond devices and equipment to respective panel's ground bar.

2.02 COUPLINGS, CONNECTORS, AND FITTINGS

- A. Use standard UL listed items to properly attach conduits, outlet boxes, pull boxes, cabinets, etc. to provide a complete raceway system. All connections shall have insulated throats.
- B. Connectors and couplings for EMT conduit shall be all steel compression ring type or set screw type with locknut. Connectors shall have insulated throats. Die-cast, indenture, and push-on type fittings are not allowed.
- C. Heavy wall rigid and IMC conduit fittings shall be threaded.
- D. Conduit terminations 1-1/4" and larger shall be provided with double locknut and nylon insulated metallic insulating bushings.
- E. Provide OZ type DX, FX, or AX conduit expansion deflection fittings where movement of structure may cause damage to raceways. Coordinate locations with all building expansion joints. Include seal-offs where raceways pass between interior and exterior of buildings.

2.03 CONDUIT SUPPORTS

- A. Conduit clamps, straps and supports shall be steel or malleable iron listed for the application.
 1. Straps shall have backing plates.
- B. All supports shall be galvanized.

2.04 PULL BOXES AND JUNCTION BOXES

- A. Provide as required by code, of code gauge steel in sizes as required by the code. Covers shall be of the same material. Boxes and covers shall have galvanized finish and they shall be securely fastened to structural members.
- B. Generally, ceiling outlet boxes shall have a minimum size of 4" square by 2-1/8" deep with fixture stud. Recessed and surface, wall mounted boxes shall be 4-11/16" square by 2-1/8" deep with proper device ring.

1. Backboxes of devices mounted in sound attenuation walls shall be acoustically sealed with an approved sealant such as US Gypsum Company SHEETROCK acoustical sealant. Follow all the sealant manufacturer's instructions regarding box rough-in and sealing, reference architectural drawings to identify where sound attenuated walls occur.

PART 3 EXECUTION

3.01 GENERAL

- A. All conduit routing shall be concealed in finished areas.
 1. Conduits shall be run surface in finished areas only with prior approval from Contracting Officer.
 2. Where construction permits (such as in block walls) conduits and boxes shall be concealed.
 3. Textured concrete walls shall have all conduits concealed.
- B. Unfinished areas where installation of conduits is difficult, (such as poured concrete walls) surface mounting will be permitted.
 1. Surface mounted conduits shall be installed in a neat fashion and shall be run parallel to the building structure.
- C. Conduit run above suspended ceilings shall be positioned where they will not prevent removal of ceiling tile or recessed lighting fixtures.
 1. Contractor is responsible for removal of existing ceiling tile located outside the immediate project area as is necessary for installation of electrical work. Reinstall the ceiling tile when installation work is complete. Replace all tile damaged during this process.
- D. Arrange conduit supports to prevent distortion of alignment of wire pulling operations. Support conduit using galvanized straps, lay in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers. Support and fasten metal conduit at a maximum of 8 feet on center. Do not support conduit with wire or perforated pipe straps. Before conductors are pulled, remove all wire used for temporary conduit support during construction.
- E. Changes in direction shall be made with symmetrical bends, cast steel boxes, stamped metal boxes, or cast steel conduit bodies.
- F. No continuous conduit run shall exceed 100 feet without a junction box.
- G. Install no more than the equivalent of three 90 degree bends between boxes.
- H. Cut conduit square using a saw or pipecutter; de-burr cut ends. Bring conduit to the shoulder of fittings and couplings and fasten securely.
- I. Use hydraulic one-shot conduit bender or factory bent elbows for bends in conduit

larger than 2" size - unless sweep elbows are required.

- J. Use suitable conduit caps or other approved seals to protect installed conduit against entrance of dirt and moisture.
- K. Maintain minimum 6" clearance between conduit and piping of other trades. Maintain 12" clearance between conduit and sources of heat such as flues, steam pipes, and heating appliances.
- L. Where conduit penetrates fire rated walls and floors, seal opening around conduit with UL listed foamed silicone elastomer compound having a UL listed fire rating equal to that of penetrated wall or floor. Seal opening around penetration on both sides of the wall.
 - 1. Seal raceway penetrations of fire-rated walls, floors and ceilings for compliance with NEC 300-21 and NFPA 101 6-2.3.6.2. Fill void around raceway. Sleeves shall be heavy wall steel pipe, anchored to building construction and finished plumb with wall or ceiling. Fire stop material shall be Dow Corning 3-6548 Silicone RTV Foam, Chase Technology Corp. CTC PR-855 fire-resistant foam sealant, 3M 303 Fire Barrier, T & B S-101 Fire Barrier or Nelson Flameseal.
- M. Seal penetrations of perimeter walls and floors below grade to prevent entry of water. Use materials compatible with wall or floor construction and approved by Contracting Officer.
- N. Seal penetrations of roof with flashings compatible with roof design and approved by roofing system manufacturer and Contracting Officer.
 - 1. Whenever possible route conduit through roof openings of HVAC piping and ductwork.
- O. Underground Conduits:
 - 1. All underground steel conduits (direct burial or concrete encased), shall have waterproof couplings. Steel conduit couplings are usually not waterproof. Waterproofing shall consist of compound applied when the coupling is attached. For direct burial of rigid steel conduit, use PVC tape, 2" wide, 1" around the coupling and minimum 4" to either side.
 - 2. All conduits in ground should drain to manhole, as applicable.
 - 3. All underground conduits or ducts containing primary cables shall have minimum 3" concrete encasement.
- P. Vertical Risers:
 - 1. Vertical feed conduits and bus duct must be independently supported at each floor level. Wood plugs, floor fill, etc. are not considered suitable support. Furnish and install steel riser clamps bearing on rough concrete to

- independently support the conduits and ducts. Welding of steel members to riser conduits is NOT approved.
2. Cables in vertical feeder conduits shall be supported at conduit terminals. Install not less than one set of cable supports (strain relief devices) per feeder for every three floors. Note that this is more stringent than required by Code.
 - a. Acceptable manufacturers of strain relief devices are Kellems (Hubbell), Pass and Seymour, or equal.
- Q. Rack conduits utilizing strut or similar system.
- R. Boxes shall be sized to accommodate device served and code requirements for number of wires and splices.
- S. Back to back or thru-the-wall boxes are not permitted. A minimum horizontal separation of 24" should be maintained between boxes on opposite sides of a common wall. Interconnecting boxes within a common wall shall not be done with straight lengths of conduit. Rather these conduits shall include at least two code complying 90 degree bends to help attenuate transfer of sound.
 1. Where minimum separation is not possible, and boxes are interconnected with a common conduit, that conduit shall incorporate at least two 90 deg. bends to help attenuate sound transfer.
- T. No outlet or junction box shall be installed where it would be inaccessible or its usefulness would be impaired by other equipment.
- U. All conduits installed for future considerations or for use by systems provided by others (i.e. - telephone, computer, television, etc.) shall be conspicuously labeled as to their intended use, origin, and destination. Reference permanently assigned room numbers when labeling. Leave a pull wire in all such conduits. Provide a bushing on the end of all stubbed conduits.
- V. Structural members whose strength is impaired by improper cutting, drilling, or excessive defects shall be replaced or reinforced in a manner acceptable to the Contracting Officer. Any structural cutting requires the Contracting Officer's prior approval.
- W. Maintain integrity of rated structures (floors, walls, ceilings) whenever such structures are penetrated by conduit, cable tray, cable, busway, etc.

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Division 16 - Electrical

SECTION 16050

WIRES AND CABLES

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. All conductors shall be rated 600 volt made of refined, soft drawn copper of highest commercial conductivity, with insulation compounds listed by U.L. as suitable for the duty or application in question, and subject to the following:
 - ... No. 12 AWG minimum, (with exceptions as indicated for special systems.) stranded conductors terminated in connectors designed for stranded conductor or with crimp type connectors.
 - ... No. 6 AWG and smaller shall be phase color coded throughout. Larger conductors shall be coded at all accessible points with approved type colored plastic tape.
 - ... Coding in accordance with Article 210 of The National Electrical Code.

PART 2 PRODUCTS

2.01 APPROVED MANUFACTURERS

- A. Copper conductor: General Cable, Okonite, Rome, Triangle, or Southwire.

2.02 APPLICATIONS

- A. In general: Code grade type THHN, THWN, XHHW in buried conduits.
- B. Feeders, all conductor No. 8 AWG and larger, and all conductor in or below ground floor slab: Color grade type THWN, THW, XHHW.
- C. High temperature locations: all wiring to equipment mounted on boiler, incinerator, exhaust hoods, ballast compartments of fixtures, and elsewhere where ambient temperature conditions warrant, in the opinion of the Contracting Officer shall be Code grade type THHN or otherwise with insulation suitable for 90 degrees C. operating temperature.
- D. Size conductors to compensate for voltage drop. Wiring serving exit fixtures, emergency lighting, exterior lighting, and equipment remote from building shall be minimum #10 AWG. Maximum 2 percent voltage drop is permitted for branch circuits, 3 percent maximum drop for feeders.
 - 1. As a minimum use #10 AWG conductor for 20 amp, 120 volt branch circuit home runs longer than 100 feet.

2.03 MECHANICAL CONNECTORS

- A. Joints, taps, and splices in conductor No. 10 AWG and smaller shall be made with spring compression type solderless connectors with plastic cover of type and size required. Approved manufacturers: Minnesota Mining & Mfg. Co., Scotchlock, Thomas and Betts Piggy Pigtails. Bolted connectors are required where specifically noted.
- B. Joints, taps, and splices in conductor No. 8 AWG and larger shall be made with solderless crimp type or bolted connectors of an approved type and size.
- C. Conductors No. 6 AWG and larger shall be connected to panels and apparatus by means of approved lugs or connectors.

2.04 INSULATION

- A. Each joint, tap, and splice in conductor No. 8 AWG and larger shall be taped with weatherproof plastic tape providing insulation not less than that of the conductor, and in any case, not less than two half lapped layers. Use Scotch 33 tape or equal.

PART 3 EXECUTION

3.01 GENERAL

- A. Wiring shall not be installed until building is enclosed and weather-tight. Do not install wiring in raceways containing water or debris. Use special care and proper U.L. listed lubricants for pulling wire to avoid overstrain of conductor.
- B. Seal around both sides of all penetrations through rated walls, ceilings, floors, etc., with an approved fire sealant. See Specification Section 16025 for list of approved sealants.
- C. Integrity of conduit grounding path shall be as required by NEC Article 517-13b.

3.02 COLOR OF PHASE CONDUCTORS

- A. Use black and red for single phase 120/240 volt systems.

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Division 16 - Electrical

SECTION 16075

GROUNDING

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. Complete raceway system shall be grounded so ground will be electrically continuous from source to all outlet boxes and equipment.
- C. Provide bonding conductors as required to securely ground all electrical equipment enclosures, including lighting fixtures if they have metallic housing and are cord connected.
- D. Flexible metal conduit must be bonded with a green grounding conductor.
- E. All 120 volt duplex receptacles and light switch circuit wiring shall contain a separate green grounding conductor. In addition, all receptacles are to have a bonding jumper to outlet box. Self-grounding receptacles are not approved.
- F. Ground all transformers per code and diagrams.
- G. Ground busway enclosure at beginning point and destination point.
- H. Ground cable tray to nearest feeder conduit at every floor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

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Division 16 - Electrical

SECTION 16125
TEMPORARY SERVICE

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. The Contractor shall make all necessary arrangements for installation of a temporary electrical service at the job site. All temporary power shall be in accordance with OSHA standards and National Electrical Code.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL

- A. Installation of any temporary service shall be coordinated with the Government for location.
- B. It shall be the contractor's responsibility to verify and coordinate provisions for temporary power with the Government. Avoid obstructing corridors and other areas as much as practical. All temporary wiring shall be installed in a manner so as not to create any hazardous situations in the facility. Temporary wiring and service shall conform to National Electrical Code.
- C. NOT USED.
- D. In accordance with the latest issue of the National Electrical Code, all temporary electrical circuits for construction purposes shall be equipped with combination ground fault interrupter and circuit breakers meeting the requirements of UL for Class A, Group 1 devices.

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Division 16 - Electrical

SECTION 16140
ELECTRICAL SERVICE

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. Provide a complete electrical service as specified.

PART 2 PRODUCTS

2.01 GENERAL

- A. Materials shall conform to products as specified in other sections of these specifications.

PART 3 EXECUTION

3.01 GENERAL

- A. All metering equipment shall meet requirements of the power company.
- B. Furnish and install a new electrical service as indicated herein. The new building service shall be 200 amp, 120/240 volt, single phase, underground. The contractor shall make all necessary arrangements with the utility company for complete installation of the new electrical service and power entrance.
- C. The new electrical service shall be connected underground between the existing pad mounted transformer and new metering pedestal.
- D. Contractor shall be responsible for paying all utility company service charges as part of the contract. Contact Monty at Vernon Electric Cooperative (608) 634-3121 to obtain information on the cost of the service.
- E. Notify owner prior to any pre-planned power outages.

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Division 16 - Electrical

SECTION 16150

PANELBOARDS AND SAFETY SWITCHES

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. Furnish and install all power panels and panelboards as indicated herein and shown on the panelboard schedule and plans.
- C. Equipment as manufactured by Square "D", General Electric, and Cutler-Hammer approved.

PART 2 PRODUCTS

2.01 MOLDED-CASE CIRCUIT BREAKERS

- A. Molded-case circuit breakers shall have overcenter toggle-type mechanisms, providing quick-make, quick-break action. Breakers shall be calibrated for operation in an ambient temperature of 40 degrees C. Each circuit breaker shall have trip indication by handle position and shall be trip-free. Two and three-pole breakers shall be common trip. Each circuit breaker shall have a permanent trip unit containing individual-thermal and magnetic-trip elements in each pole. Circuit breakers with frame sizes greater than 100 amperes shall have variable magnetic trip elements which are set by a single adjustment (to assure uniform tripping characteristics in each pole). A push-to-trip button shall be provided on the cover for mechanically tripping the circuit breaker. The circuit breaker shall have reverse capability and be suitable for mounting and operating in any position.
- B. Circuit breakers shall have removable lugs. Lugs shall be UL listed for copper and aluminum conductors. Breakers shall be UL listed for installation of mechanical-type lugs.

2.02 PANELBOARDS

- A. Furnish and install panelboards as shown on plans and described herein. Panelboards shall be listed by UL.
- B. All panelboards shall be rated for the intended voltage.
- C. Boxes shall be corrosion resistant, zinc-finish galvanized with wire bending space per latest edition of NEC.
- D. Fronts shall be reinforced steel powder finish painted light gray, (ANSI 61) and shall

be equipped with concealed hinges and concealed trim adjusting screws, trim clamps are not an acceptable alternative. Directory card holders shall be clear Lexan permanently mounted to the front door and all door locks shall be corrosion proof Valox with retractable latch, keyed alike.

- E. Bus bars shall be sequenced phased, fully insulated, and supported by high impact noryl interior base assemblies, mechanically supported by reinforced-zinc finished galvanneal-steel frames to prevent vibration and resulting damage when subjected to vibration or short circuits. All terminations shall be suitable for either copper or aluminum UL listed wire and shall be tested and listed in conjunction with appropriate UL standards.
- F. Circuit breakers shall not be restricted to any mounting location due to their physical size and all branch circuit breakers rated 15 thru 100 amperes shall be capable of mounting in any and all interior positions to allow twin or double mounting without space penalty. All branch circuit breaker panelboard connections shall be copper to copper connections, with all panelboard terminations being fully rated at 100 amperes.
- G. All branch circuit breakers shall be quick-make and quick-break and have Posi-Vu handle indication.
- H. Circuit breakers shall be bolt-on type thermal magnetic.
- I. All panelboard series connected ratings shall be prominently displayed on the dead front shield and totally visible with the door open.
- J. Busing shall be copper with standard current density to meet UL 891 for temperature rise.
- K. Panels shall contain solid-neutral and equipment ground bar.

2.03 CIRCUIT DIRECTORIES

- A. Furnish and install in directory frame on inside of door on each panel cabinet, a typewritten directory identifying each circuit.

PART 3 EXECUTION – NOT USED

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Division 16 - Electrical

SECTION 16200

LIGHTING

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. The contractor shall furnish and install all light fixtures as shown on the drawings.
- C. The approximate location of lighting fixtures is shown on the drawings. The exact location shall be verified by the contractor in the field.
- D. The fixture types that shall be installed are depicted on the drawings. The Contractor shall further examine all construction and supply all required accessories to hang the fixtures.

PART 2 PRODUCTS

2.01 LAMPS

- A. The contractor shall furnish and install lamps of size and type as scheduled unless noted otherwise on plans. Lamps shall be as manufactured by General Electric, Phillips, or Osram Sylvania, and shall be specific type required for proper and normal lamp operation in conjunction with auxiliary equipment (i.e. ballasts, lamp holders, etc.).
- B. All fluorescent lamps shall be energy saving type.
- C. All incandescent lamps shall be extended service and rated at 130 volts.

2.02 ELECTRONIC BALLASTS FOR T8 LAMPS

- A. Electronic ballasts shall be rapid start type as manufactured by MagneTek Triad Ballastar, Advance, or Motorola with the following requirements.
 - 1. Ballast manufacturer shall have been producing electronic ballasts for at least 10 years with a low failure rate.
 - 2. Ballasts shall operate at an input frequency of 60 Hz and an input voltage of 108 to 132 (120V circuit) or 249 to 305 (277V circuit).
 - 3. Ballasts shall operate lamps to a frequency of 20 to 35KHz with no detectable flicker.
 - 4. Ballasts shall be of U.S. manufacture and carry a 3-year warranty with up to

\$10 replacement labor allowance.

5. Ballasts shall comply with FCC and NEMA limits governing EMI and RFI and shall not interfere with operation of other normal electrical equipment.
6. Ballasts shall meet any applicable ANSI standards. Total harmonic distortion (THD) shall be limited to 10% or less.
7. Ballasts shall withstand transients as specified by ANSI C.62.41 for location category A3 in the normal mode and location category A1 in the common mode.
8. Ballast shall have less than 6% third harmonic distortion.
9. Ballasts shall not be affected by lamp failure and shall deliver normal lamp life.
10. Ballasts shall be high power factor (90% or higher). UL listed for Class P, Sound rated A.
11. Operating temperature shall not exceed 60 degrees C at any point on the case during normal operation.
12. Ballasts shall be potted and in a steel case and shall contain no PCBs.
13. Ballasts shall be marked with manufacturer's name, part number, supply voltage, power factor, open circuit voltage, current draw for each lamp type, and UL listing.
14. Ballast shall be approved by appropriate State authority.

2.03 BALLASTS FOR H.I.D. LAMPS

- A. Ballasts for H.I.D. lamps shall be of the constant wattage type shall be capable of starting and operating lamps with line voltage variations of plus or minus 3 percent.
- B. Ballasts intended for use outdoors shall be designed for operation down to minus 20 degrees F.
- C. Approved manufacturers are General Electric, Advance, Universal.

2.04 LIGHTING FIXTURES

- A. Fixtures shall be equipped with thermal protective devices and approved housings as required for recessing and where in contact with insulation.
- B. All fluorescent troffer fixtures which contain acrylic lenses shall have lenses no less than 1/8" nominal thickness.

PART 3 EXECUTION

3.01 GENERAL

- A. Surface-mounted fixtures on walls or ceilings shall be anchored so they cannot be rotated and no light leakage appears. No plastic, composition, or wood type anchors shall be used.
- B. Pendant-mounted fixtures shall be provided with self-aligning stem hanger, one which must also serve as wireway. Exposed rubber cords or flexible-conduit wireways shall not be acceptable.
- C. All recessed fixtures shall have final connections made with flexible-metallic conduit 6 feet in length.
- D. Coordinate locations of light fixtures with other contractors to assure that installation will not interfere with other equipment.
- E. All diffusers, reflectors, or lenses shall be free of cracks, chips or dents, and shall be clean at time of final inspection.
- F. Position fixtures utilizing compact fluorescent lamps so all fixtures within a common area have the lamp oriented (aligned) in the same direction.

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Division 16 - Electrical

SECTION 16225

IDENTIFICATION

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. An engraved plastic nameplate of size 1" X 4" with letters of 3/8" height, unless space available dictates differently, shall be securely fastened to the following equipment: each primary cable termination, primary cable in manhole, panelboard, contactor, time switch, starter, disconnect switch, automatic transfer switch, and each branch breaker and main breaker in main distribution panels, and each new branch breaker in existing distribution panels.
 - 1. Each service disconnect shall be identified as such with a permanent label.
- C. Each end of empty conduit shall be identified to indicate the intended use of the conduit and the location of opposite end. Use room numbers that are permanently assigned.
- D. Apply a permanent label to each pull box, feeder conduit, splice box, etc., identifying the voltage and distribution of feeder.

1.02 CONDUCTOR IDENTIFICATION

- A. Identify each conductor at each connector or splice point with permanently attached wraparound adhesive markers such as manufactured by Brady Company.
 - 1. This identification shall include feeder number, branch circuit number, control circuit number, or any other appropriate number or lettering that will expedite future tracing and trouble-shooting.

1.03 RECEPTACLE CIRCUIT IDENTIFICATION

- A. Identify each phase conductor at the backbox of each receptacle with a adhesive marker indicating the circuit.
- B. Label the inside face of each receptacle coverplate (of receptacles connected to normal power) with a permanent ink marker indicating the circuit and panel of origin.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL

- A. All conduits installed for future considerations or use by systems provided by others (i.e. - television, telephone, computer, capped J-boxes, etc.) shall be conspicuously labeled at both ends as to their intended use, origin, and destination. Permanently assigned room numbers shall be referenced. Contractor shall leave a pull wire in all such conduits.

* * *

Division 16 - Electrical

SECTION 16250

WIRING DEVICES

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. At each location shown on the drawings, furnish and install wiring device as indicated by symbol on drawings.
- C. Unless otherwise indicated, all wiring devices shall be by the same manufacturer, either Arrow-Hart, Hubbell, Pass & Seymour, Bryant, General Electric, Leviton, or Eagle. Pass & Seymour catalog numbers are used herein to designate quality of device requested.

PART 2 PRODUCTS

2.01 LOCAL SWITCHES

- A. Specification grade, fast make, positive break, 20 amp, 120/277 volt, snap switches with grounding terminal.
 - 1. Single pole: P&S 20AC1
 - 2. Three-way: P&S 20AC3
 - 3. Four-way: P&S 20AC4
 - 4. Double pole: P&S 20AC2
- B. Color of switches shall be Ivory, except when indicated differently on the drawings.
- C. Provide pilot lighted switches where switches are located, not in the same room as the light fixtures they control. Provide engraved cover plates identifying the loads controlled by these remotely located pilot lighted switches.

2.02 AUTOMATIC LIGHTING CONTROLS

- A. Infrared occupancy sensor with light level sensor:
 - 1. Wall Mount: Per schedule.

2.03 RECEPTACLES

- A. Extra hard use specification grade, 20 amp, 125 volt with grounding terminal: P&S 5362.
- B. Back-wired, push-in connectors are not approved. Connections to device screws shall be with solid conductors or crimp-on lugs.
- C. Receptacles shall have grounding conductor to grounding screw. (Self grounding

receptacles using device attachment screw for grounding are not acceptable.)

- D. Specification grade ground fault circuit interrupter: P&S 2091.
 - 1. All receptacles shown on drawing with "GF" designation shall be a GFI type receptacle. Daisy-chain and series type installations are not acceptable.
 - 2. GFI receptacles shall be wired to terminals labeled "line side" such that no individual GFI device will affect or open the circuit to another device on a common circuit. Do not connect to terminals labeled "load side". NOTE - This installation requires terminals of GFI devices to be labeled as approved for more than one conductor, or conductors will need to be spliced in receptacle's backbox - 1993 NEC Article 110-14(a).
- E. Color of receptacles shall be ivory, except when indicated differently on the drawings.

2.04 COVER PLATES

- A. Cover plates shall in general be of type "302" stainless steel.
- B. Surface mounted outlet boxes - galvanized steel surface cover with rounded edges designed to fit flush with outlet box.

2.05 SPECIAL PURPOSE CONNECTIONS

- A. Furnish and install receptacles, wiring, and connections, as applicable, at locations required by equipment serviced or otherwise as directed on the Special Purpose Connection Schedule. Extend wiring to equipment and make final connection.

PART 3 EXECUTION

3.01 GENERAL

- A. The approximate location of wiring devices are indicated on the drawings; the specific locations shall be determined in accordance with Section 16975 of these specifications.
- B. This section is referred to equipment plans, equipment shop drawings, elevation drawings, other detail or dimensional drawings, and the contractor shall consult with the Contracting Officer before installation of outlet boxes for wiring devices or before proceeding with any work dependent upon this information.
- C. Wall switches shall generally be located on latch side of door opening with edge of plate not more than 12" from door frame, except as noted on drawings.
- D. Provide a separate, dedicated, insulated ground conductor (#12 AWG) extending from ground terminal of each isolated ground receptacle to an isolated grounding bar

in the associated panelboard. Isolated grounding bar in the panelboard shall be grounded directly to the building ground with #8 insulated conductor (or size as required by code).

- E. GFI receptacles shall be wired to terminals labeled "line side" such that no individual GFI device will affect or open the circuit to another device on a common circuit. Do not connect to terminals labeled "load side". NOTE - This installation requires terminals of GFI devices to be labeled as approved for more than one conductor, or conductors will need to be spliced in receptacle's backbox - 1993 NEC Article 110-14(a).
- F. Where outlets are located above hydronic baseboard heating units, the contractor shall be responsible for coordinating the installation of these outlets with the HVAC contractor. Generally, in this application outlets shall be located 4" on center above heating units.
- G. Under no circumstances shall outlets be installed above electric baseboard heating units. If such a conflict exists it shall be the contractor's responsibility to coordinate installation with the HVAC contractor. If a conflict exists with special purpose outlets, the contractor shall consult the Contracting Officer for clarification.

3.02 RECEPTACLE CIRCUIT IDENTIFICATION

- A. See Section 16225 - Identification.

* * *

Division 16 - Electrical

SECTION 16600
ELECTRIC DRYERS

PART 1 GENERAL

1.01 GENERAL

- A. Applicable provisions of Division 1 shall govern work in this section.
- B. This contractor shall be required to furnish and install all electric hand dryers as shown on the drawings. Units as manufactured by World Dryer Corporation or approved equal shall be used.

PART 2 PRODUCTS

2.01 GENERAL

- A. Hand dryers shall be Model "A4".
- B. Cover of dryer shall consist of a one-piece gray iron casting fitted with isolated pushbutton, revolving nozzle and recessed instruction plate.
- C. All exposed portions of iron casting shall be finished with acid resisting porcelain enamel; color as selected by Contracting Officer.
- D. Cover shall be fastened by two recessed allen head specially constructed tamper-resistant bolts to aluminum base which in turn shall be fastened to the wall by four concealed 1/4" mounting bolts.
- E. The cover shall be equipped with an air inlet opening on the bottom side of the casting covered with an expanded metal grille having vanes with a minimum depth of 1/4" and a maximum spacing between vanes of 1/4". The cover shall also be equipped with an air outlet opening on the front side of the casting covered with a metal grille having vanes with a minimum depth of 5/8" and a spacing between vanes of 1/4".
- F. All metal parts other than castings are to be plated with either cadmium (min. thickness .003") or with brightly polished chrome (min. copper .0003", min. nickel .0005", min. combined copper and nickel .001", min. chrome .0001").
- G. The motor shall be of universal type, 1/10 HP, 7500 RPM at rated load, with resilient mounting and sealed, lubricated ball bearings.
- H. The motor shall be protected by a fuse.

- I. A dynamically balanced fan shall be mounted directly on the motor shaft. The fan and motor unit shall be insulated from balance of dryer with rubber resilient mounting, the rubber being stressed in shear to eliminate transmission of sound to the wall. The fan shall be a double inlet centrifugal type and shall deliver a minimum of 152 CFM at the discharge end of the nozzle.
- J. The heating element shall be protected by an automatically resetting circuit breaker mounted directly on the heating element frame within the convolutions of the coil which shall open whenever the airflow is cut off and which shall close automatically as soon as the airflow is resumed.
- K. The timer shall be designed to operate the hand dryer for a period of 30 seconds after actuation by the pushbutton.
- L. The entire hand dryer shall be listed under re-examination service of Underwriter's Laboratories, Inc.

PART 3 EXECUTION - NOT USED

* * *

ABBREVIATIONS FOR ELECTRICAL DRAWINGS

ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
ACB	AIR CIRCUIT BREAKER
ALT	ALTERNATE
AC	ALTERNATING CURRENT
AL	ALUMINUM
AWG	AMERICAN WIRE GAUGE
A	AMPER(S)
AIC	ANTICIPATED INTERRUPTING CURRENT
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINISHED GRADE
BD	BUSDUCT
BRKR, BKR	BREAKER
CATV	CABLE ANTENNA TELEVISION
CLG	CEILING
CKT, CRCT	CIRCUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
COND	CONDUCTOR
C	CONDUIT (SEE RACEWAYS & CONDUCTORS)
CONN	CONNECT
CC	CONTROL CABINET
CP	CONTROL PANEL
CU	COPPER
CT	CURRENT TRANSFORMERS
DED	DEDICATED 20 AMP CIRCUIT RECEPTACLE
DIM	DIMMER CONTROL
DC	DIRECT CURRENT
DISC	DISCONNECT
DP	DOUBLE POLE
DT	DOUBLE THROW
DN	DOWN
EC	ELECTRICAL CONTRACTOR
E.HTR	ELECTRIC HEATER
EWC	ELECTRIC WATER COOLER
EMT	ELECTRICAL METALLIC TUBING
EM	EMERGENCY

EOLR
EXIST, EX
XP, EXPR

END OF LINE RESISTOR
EXISTING
EXPLOSION PROOF

FDR
FA
FAAP
FACP
FPC
FL
FLUOR
FSC
HZ
FLA
F
FS

FEEDER
FIRE ALARM
FIRE ALARM ANNUNCIATOR PANEL
FIRE ALARM CONTROL PANEL
FIRE PROTECTION CONTRACTOR
FLOOR
FLUORESCENT
FOOD SERVICE CONTRACTOR
FREQUENCY IN CYCLES PER SECOND
FULL LOAD AMPS
FUSE
FUSIBLE

GC
GEN
GRD, GND
GFI, GF

GENERAL CONTRACTOR
GENERATOR
GROUND
GROUND FAULT INTERRUPTER

HVC, HVAC, HV
HWR
HID
HPS
HP

HEATING-VENTILATING CONTRACTOR
HEAVY WALL RIGID CONDUIT
HIGH INTENSITY DISCHARGE
HIGH PRESSURE SODIUM
HORSEPOWER

INC
IC
IMC
IPS
ISO

INCANDESCENT
INTERCOM
INTERMEDIATE METALLIC CONDUIT
INTERRUPTIBLE POWER SUPPLY
ISOLATED NEUTRAL

JB, J-BOX

JUNCTION BOX

K
KVAR
KVA
KW
KEC

KEY OPERATED
KILOVAR(S)
KILOVOLT AMPERE(S)
KILOWATT(S)
KITCHEN EQUIPMENT CONTRACTOR

LP	LIGHTING PANEL
LOC	LOCATION
LPS	LOW PRESSURE SODIUM
MAG	MAGNETIC STARTER
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MAN	MANUAL STARTER
MTS	MANUAL TRANSFER SWITCH
MATV	MASTER ANTENNA TELEVISION
MC	MECHANICAL CONTRACTOR
MH	METAL HALIDE
MIC	MICROPHONE
MTR, MOT	MOTOR
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MIL(S)
NU	NEAR UNIT
NF	NON FUSE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
OU	ON UNIT
OC, O/C	ON CENTER
OCP	OVER CURRENT PROTECTION
OL	OVERLOAD ELEMENT
PNL	PANEL
P	PILOT INDICATOR
PLGC	PLUMBING CONTRACTOR
PVC	POLYVINYL CHLORIDE
PT	POTENTIAL TRANSFORMER
PF	POWER FACTOR
PP	POWER PANEL
PRI	PRIMARY
PS	PULL STATION
REC, RECPT	RECEPTACLE
RE	REFERENCE
R	RELAY
RC	REMOTE CONTROL
(R)	ON ROOF

SCH	SCHEDULE
SEC	SECONDARY
SSCP	SECURITY SYSTEM CONTROL PANEL
STCB	SHUNT TRIP CIRCUIT BREAKER
SP	SINGLE POLE
ST	SINGLE THROW
SST	SOLID STATE TRIP
SPK, SPKR	SPEAKER
SPC	SPECIAL PURPOSE CONNECTION
SMR	SURFACE METAL RACEWAY
SW	SWITCH
SWBD	SWITCHBOARD
SPC	SPACE
TELE	TELEPHONE
TV	TELEVISION
TEMP	TEMPERATURE
TCC	TEMPERATURE CONTROL CONTRACTOR
TB	TERMINAL BOX
TMT	THERMO MAGNETIC TRIP
T-STAT	THERMOSTAT
TC	TIME CLOCK
XFMR, TF	TRANSFORMER
TYP	TYPICAL
UG	UNDERGROUND
UNG	UNGROUNDING
UPS	UNINTERRUPTED POWER SYSTEM
UH	UNIT HEATER
VAR	REACTIVE VOLT AMPERES
V	VOLT(S)
VA	VOLTAMP(S)
VP	VAPORPROOF
W	WATT(S)
WP	WEATHERPROOF
W/	WITH
WU	WITH UNIT
W/O, WO	WITHOUT

NOTE! THIS COMPRISES A COMPLETE LIST OF ITEMS. NOT ALL ABBREVIATIONS MAY NECESSARILY BE REPRESENTED ON THIS PROJECT.

DEVICE MOUNTING HEIGHT LEGEND

<u>DESCRIPTION</u>	<u>MOUNTING HEIGHT</u>
LT SWITCH	46" CENTERED AFF
RECEPTACLES	18" CENTERED ABOVE FLOOR
	6" CENTERED ABOVE COUNTER
	4" CENTERED ABOVE BACKSPLASH
	4" CENTERED ABOVE HYDRONIC HEATING
	24" OR NEXT HIGHEST MASONRY JOINT AFG - OUTDOOR WEATHERPROOF
F.A. PULL STATION	46" CENTERED AFF
F.A. AUDIO/VISUAL DEVICES	80" AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER)
F.A. VISUAL DEVICES	80" AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER)
EXT. WALL SPEAKER	CENTERED AFG
WALL SPEAKER	CENTERED AFF
ROOM STATION SWITCH	46" CENTERED AFF
T.V. OUTLET	18" CENTERED AFF
MICROPHONE JACK	18" CENTERED AFF
VOLUME CONTROL	46" CENTERED AFF
THERMOSTATS/FAN CONTROLS	54" CENTERED AFF
HAND DRYERS	38" AFF TO BOTTOM
HAND DRYERS (WHEELCHAIR)	34" AFF TO BOTTOM
HAIR DRYERS	68" AFF TO BOTTOM
HAIR DRYERS (WHEELCHAIR)	52" AFF TO BOTTOM
CORRIDOR DIGITAL CLOCK	CENTERED BELOW CEILING

DIGITAL WALL CLOCK	CENTERED AFF
COMBINED CLOCK/SPEAKER	CENTERED AFF
REMOTE ZONE ANNUNCIATOR	60" CENTERED AFF
DOME LIGHTS	7'-6" CENTERED AFF
INTERCOM SUB-STATION	60" CENTERED AFF
EXIT LIGHTS	CENTERED WITHIN 24" ABOVE DOOR
WALL CLOCK	CENTERED AFF
TELEPHONE OUTLET	18" CENTERED AFF
WALL TELEPHONE	54" CENTERED AFF
DESK TELEPHONE	6" CENTERED ABOVE COUNTERTOP
DESK TELEPHONE	4" CENTERED ABOVE BACKSPLASH

NOTES

The above list of mounting heights shall be used for installation of devices unless noted otherwise on the drawings.

Exact mounting heights of devices may be slightly adjusted in the field to accommodate block courses. The above items comprise a complete list and not all items may be applicable to this project.