IOWA DEPARTMENT OF NATURAL RESOURCES

PROJECT MANUAL

TWELVE MILE LAKE

LAKE ENHANCEMENTS

EMMET COUNTY, IOWA

ATTENTION BIDDERS

ALL SUBSTITUTION REQUESTS AND QUESTIONS MUST BE SUBMITTED BY 12:00PM THE FRIDAY PRIOR TO THE BID LETTING TO BE CONSIDERED.

PREPARED BY

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SECTION
6200 Park Avenue, Suite 200
Des Moines, IA 50321

PROJECT N0. 26-01-32-02

Obtain complete sets of contract documents including Drawings, Specification, bid documents, bidders' list in electronic format at: *www.beelineandblue.com*

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Notice to Bidders - Iowa Department of Natural Resources

Please note that the DNR Central Office has moved to 6200 Park Avenue, Suite 200, Des Moines

Sealed bids will be received by the Iowa Department of Natural Resources, at 6200 Park Avenue, Suite 200,, Des Moines, IA, 50321, or via email at **constructionbids@dnr.iowa.gov** until **11:00am, September 17, 2026** for the public improvement projects listed below, at which time they will be opened publicly. When emailing bid documents, the subject line of the email must state the following: Project Number - Project Location, and Bid Letting Date. Please ensure the first page of the emailed attachment, or first of multiple attachments, is the bid proposal.

Direct substitution requests, questions about the project, or questions concerning bidding and contract procedures to DNR Procurement. To be considered, these requests must be emailed to **constructionbids@dnr.iowa.gov** by 12:00pm the Friday prior to bid letting with the following subject line: **Contractor Question - Project Number – Project Location**

After the bid opening, bid results may be obtained by visiting the Department's website at https://programs.iowadnr.gov/engreal/projectlist.asp. In addition to attending the bid opening in person, interested parties may also call in to the following number to listen to the bid opening:

Conference call number: +1 (484) 816-5310
PIN: 154 121 290#

Project documents, including drawings, specifications, proposal forms, and addenda items for the project are available at Beeline and Blue, at 2507 Ingersoll Ave, Des Moines, IA, 50312. Please visit www.beelineandblue.com or contact (515) 244-1611 for more information. Alternatively, Bid Documents can be viewed or printed online at https://programs.iowadnr.gov/engreal/projectlist.asp

The Department shall comply with all public improvement procurement laws, as outlined in the plans and specifications and including but not limited to: Iowa Code chapter 26 related to public construction bidding; Iowa Code chapter 73 related to preferences; Iowa Code chapter 573 related to labor and materials on public improvements; rules promulgated by the Department of Administrative Services – General Services Enterprise as they may apply; rules promulgated by the Department of Natural Resources and the Natural Resources Commission, as they may apply; and any federal statutes, rules and/or executive orders that may be associated depending on funding sources. Bidders shall comply with these laws to be considered and are encouraged to be familiar with public improvement procurement requirements and the bidding documents before submitting a bid.

Each bidder shall accompany the bid with a bid security as defined in Iowa code section 26.8. Copies of the bid security will be accepted for those bidders submitting bids electronically. Additionally, if the apparent lowest responsible, responsive bidder submits an electronic bid security, the original security must be mailed to the Department, at 6200 Park Avenue, Suite 200, Des Moines, IA, 50321, within five business days of the bid letting date. The bid security must be in an amount set forth in the bidding documents and made payable to the Iowa Department of Natural Resources. Failure to execute a contract for the proposed work and file an acceptable Performance Bond, in an amount equal to 100% of the contract price and a certificate of liability insurance, within thirty days of the date of the award of the contract, will be just and sufficient cause for the rescinding of the award and the forfeiture of the bid security.

SPECIAL NOTICE TO CONTRACTORS

Project Estimate: $185,000.00
Funding Source: Federal NAWCA and Lake Restoration

Please be advised of the following public improvement timetable and department specific contacts.

PUBLIC IMPROVEMENT TIMETABLE	Date/Time (Central Standard Time)
Direct substitution requests, questions about the project, or questions concerning bidding and contract procedures to DNR Procurement. To be considered, these requests must be emailed to constructionbids@dnr.iowa.gov by 12:00pm the Friday prior to bid letting with the following subject line: ***Contractor Question - Project Number – Project Location***	September 11, 2026 12:00pm
Answers to Contractor submitted questions and any addenda will be posted by 12:00pm the Tuesday prior to bid letting.	September 15, 2026 12:00pm
Project Bid Deadline and Public Bid Opening.	September 17, 2026 11:00am

Project documents, including drawings, specifications, proposal forms, and addenda items for the project are available at Beeline and Blue, at 2507 Ingersoll Ave, Des Moines, IA, 50312. Please visit www.beelineandblue.com or contact (515) 244-1611 for more information. Alternatively, Bid Documents can be viewed or printed online at https://programs.iowadnr.gov/engreal/projectlist.asp

Once Bid Letting has occurred, Contractors may also contact the following:

Direct questions concerning the Project Design, Drawings and Specifications to:

Jeff Felts, Project Manager
Phone: (515) 250-3712
Jeff.felts@dnr.iowa.gov

Direct questions concerning a Pre-construction Conference, Site Review and Project Inspection to:

Jeff Felts, District Engineer
Phone: (515) 250-3712
Jeff.felts@dnr.iowa.gov

Contractor is responsible for contacting State Stormwater program coordinator (515-217-0875) for information relating to stormwater permit that is necessary if construction activities disturb one acre or more.

In accordance with Iowa Code Section 423, Contractors may purchase qualifying items for work on this contract exempt from sales tax. The DEPARTMENT will issue an authorization letter and exemption certificate to the prime contractor and each approved subcontractor. *Complete information on qualifying materials and supplies can be found in Iowa Administrative Rules Chapter 701-219. Additional guidance for contractors can be found at https://tax.iowa.gov/, the Iowa Department of Revenue Web site.*

Time and Date of Letting **11:00 AM, September 17, 2026**

PROPOSAL

Project Description and Location

Project No. **26-01-32-02**

Lake Enhancements
Twelve Mile Lake
Emmet County, Iowa

Proposal of: _____
(Name of Bidder)

Located at: _____
(Address) (Telephone include area code)

Remit address: _____
(Address – if different than above)

Amount of Proposal Guarantee	Specified completion date or Number of Working Days	Approx. or Specified Starting Date or Number of Working Days	Liquidated Damages Per Day
$12,500.00	June 04, 2027	N/A	$1,000.00

The undersigned hereby agrees, if awarded the contract, to execute the proposed contract and to furnish an approved performance bond in a amount not less than 100 percent of the contract award within 30 days after the date of approval of award of the contract, and to provide all labor, materials, and equipment required to complete the project designated above, for the price hereinafter set forth, in strict compliance with the contract documents prepared by the Iowa Department of Natural Resources.

The undersigned agrees, if awarded the contract, to commence the work within a reasonable time after the preconstruction conference or by the specific starting date, if so specified, and to complete the work within the contract period, or to pay liquidated damages in the amount stipulated herein for each calendar day the work remains uncompleted after the expiration of the contract period or any authorized reduction thereof.

A proposal guarantee in the amount stipulated herein is included with this proposal, to be forfeited to the Iowa Department of Natural Resources if the undersigned fails to execute the contract and furnish an approved performance bond, if awarded the contract.

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the state of Iowa, and also, a resident bidder shall be allowed a preference against a nonresident bidder from a state or foreign country which gives or requires a preference to bidders from that state or foreign country on projects in which there are no federal funds involved.

_____ _____ _____
(Iowa Contractor Registration No.) (Signed) (Date)

_____ _____
(Phone Number) (Fax Number)

_____
(Email Address)

By signing and submitting the proposal, the bidder:

1. Gives an unsworn declaration on behalf of each person, firm, association, partnership, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract, and is not under debarment currently by the Federal government for a criminal violation which is reasonably related to bidding and contracting procedures; and

2. Affirms to have examined the plans, specifications, and job site to become acquainted with the adjacent areas, means of approach to the site, conditions of the actual job site, and the facilities for delivering, storing, placing, and handling of materials and equipment.

SCHEDULE OF PRICES

Project Description and Location

Lake Enhancements, Twelve Mile Lake, Emmet County

Name of Bidder

THE "UNIT PRICE" AND "AMOUNT" COLUMNS MUST BE FILLED IN FOR THIS PROPOSAL TO BE CONSIDERED COMPLETE. IF THERE IS A DISCREPANCY BETWEEN UNIT BID PRICES, EXTENSIONS, OR TOTAL AMOUNTS OF BID, THE UNIT PRICES SHALL GOVERN.

Item No.	Description	Estimated Quantity		Unit Price	Amount
1	Mobilization	1	LS		
2	Site Preparation/Misc. Removals	1	LS		
3	Excavation	725	CY		
4	Lake Excavation	1	LS		
5	Embankment Construction	900	CY		
6	Storm Sewer Manhole	1	LS		
7	Storm Sewer - 24"	579	LF		
8	Storm Sewer - 24" RCP	132	LF		
9	Riprap - Existing Field Stone Stockpile	1	LS		
10	Class I Field Stone	150	TON		
11	Fabricated Intake Bar Guard	1	EA		
12	Silt Fence	300	LF		
13	Wattles	300	LF		
14	NPDES General Permit #2	1	LS		
15	Temporary Rolled Erosion Control Product	1,100	SY		
16	Seeding and Mulching	2	AC		
17	Construction Staking and Layout	1	LS		
				Total	

Bidder Acknowledges Receipt Of Any Issued Addenda (Number and Date):		

Subcontractor Information

Name	Iowa Contractor Registration Number

EPA

EPA Project Control Number

United State Environmental Protection Agency
Washington, DC 20460

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters

EPA Form 5700-49 (11-83)

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agencies.

b. Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

d. Have not within a three-year period preceding this application/proposal had one or more public transaction (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine up to $10,000 or imprisonment for up to 5 years, or both.

Type Name & Title of Authorized Representative

Signature of Authorized Representative

Date

☐ I am unable to certify to the above statements. My explanation is attached.

Instructions
Under Executive Order 12549, an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program, of a sub agreement thereunder for $25,000 or more.

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or sub agreement participant thereunder must complete the attached certification or provide an explanation why they cannot. For further details, see 40 CFR 32.510, Participants' responsibilities, in the attached regulation.

Where To Submit
The prospective EPA grant. loan, or cooperative agreement recipient must return the signed certification of explanation with its application to the appropriate EPA Headquarters or Regional office, as required in the application instructions.

A prospective prime contractor must submit a completed certification or explanation to the individual or organization awarding the contract.

Each prospective subcontractor must submit a completed certification or explanation to the prime contractor for the project.

How To Obtain Forms:
EPA includes the certification form, instructions, and a copy of its implementing regulation (40) CFR Part 32) in each application kit. Applicants may reproduce these materials as needed and provide them to their prospective prime contractors, who, in turn may reproduce and provide them to prospective subcontractors.

Additional copies/assistance may be requested from:

Compliance Branch
Grants Administration Division (PM-216F)
US Environmental Protection Agency
401 M St SW
Washington DC 20460
(Telephone: 202-475-8025)

EPA Region VII Procedures for Implementation of 40 CFR Part 33.240
(Minority Business Enterprise/Women's Business Enterprise)

The following information must be contained in solicitation documents for construction contracts and engineering agreements pursuant to 40 CFR Part 33.240)

Each bidder/offeror must fully comply with the requirements, terms, and conditions of EPA's policy to award a fair share of sub agreements to minority and women's businesses. The bidder/offeror commits itself to taking affirmative steps contained herein. Bidders/offerors will take affirmative steps prior to submission of bid/proposal.

Affirmative Steps

A. When feasible, segmenting total work requirements to permit maximum MBE/WBE participation.

B. Assuring that MBEs and WBEs are solicited whenever they are potential sources of goods or services. This step may include:
   1. Sending letters or making other personal contacts with MBEs and WBEs, (e. g. those whose name appear on lists prepared by EPA or the grantee and other MBE/WBEs known to the bidder/offeror.) MBEs and WBEs should be contacted when other potential subcontractors are contacted, within reasonable time (fifteen days) prior to bid submission or closing date for receipt of initial offers. Those letters or other contacts should communicate the following:

      a. Specific description of the work to be subcontracted;
      b. How and where to obtain a copy of the drawings and specifications or other detailed information needed to prepare a detailed price quotation;
      c. Date the quotation is due to the bidder/offeror;
      d. Name, address, and phone number of the person in the bidder/offeror's firm whom the prospective MBE/WBE subcontractor should contact for additional information.

   2. Sending letters or making other personal contacts with local, state, federal and private agencies and MBE/WBE associations relevant to the project. Such contacts should provide the same information provided in the direct contacts to MBE and WBE firms.

C. Where feasible, establishing delivery schedules which will encourage participation by MBE and WBEs.

Determination of Compliance

It is to be noted that bidders/offerors must demonstrate compliance with MBE/WBE requirements in order to be deemed responsible. Demonstration of compliance shall include, but is not limited to, the following information:

1. Names, addresses and phone numbers of MBE/WBEs expected to perform the work;
2. Work to be performed by MBEs and WBEs;
3. Aggregate dollar amount of work to be performed by MBEs and WBEs, showing aggregate to MBEs and aggregate to WBEs separately;
4. Description of contacts to MBE and WBE organizations, agencies and associations which serve MBE/WBEs, including names of organizations, agencies and associations and dates of contacts;
5. Description of contacts to MBEs and WBEs, including number of contacts, fields, (i. e. equipment or material supplier, excavator, transport services, electrical subcontractors, plumbers, etc.) and dates of contacts.

All bidders/offerors should complete the Minority and Women's Business Enterprise Utilization Worksheet and submit to the grantee prior to contract award.

(Grantee may establish alternative methods of compliance equivalent to or more stringent than the above.)

MINORITY, WOMEN'S AND SMALL RURAL BUSINESS ENTERPRISE WORKSHEET

Grant Applicant: _____ Project No.: _____

Contractor/Engineer: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Contract: _____ MBE Percentage: _____ WBE Percentage: _____

1. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

2. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

3. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

4. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

5. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

6. MBE Subcontractor: _____ WBE: _____

Address: _____

Contact Person: _____ Telephone No.: _____

Amount of Subcontract: _____

Scope of Work: _____

_____

_____

Comments: _____

_____

_____

_____

Prepared By	Telephone No.	Date

GUIDANCE FOR MINORITY BUSINESS ENTERPRISE AND WOMEN'S BUSINESS ENTERPRISE REQUIREMENT OF 40 CFR 31.36(e)

I. PURPOSE

This guidance is to assist States, EPA assistance recipients, prime contractors, consultants, minority business owners and women's business owners in complying with EPA's Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) requirements in the Agency's procurement regulations, 40 CFR Part 31. This guidance provides suggestions for carrying out the affirmative steps included in EPA procurement regulations. Also included is a description of activities to be undertaken by EPA or delegated States, as well as suggestions for MBE/WBEs to take in pursuing opportunities for work in EPA-funded projects.

II. DEFINITIONS

A. Minority Business Enterprise (MBE): A minority business enterprise is a business which is

1. certified as socially and economically disadvantaged by the Small Business Administration;
2. certified as a minority business enterprise by a State or Federal agency; or
3. an independent business concern which is at least 51 percent owned and controlled (as defined below) by minority group member(s). A minority group member is an individual who is a citizen of the United States and one of the following:

    a. Black American
    b. Hispanic American (with origins form Puerto Rio, Mexico, Cuba, South or Central America)
    c. Native American (American Indian, Eskimo, Aleut, native Hawaiian)
    d. Asian-Pacific American (with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the US Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, Taiwan or the Indian Subcontinent)

B. Women's Business Enterprise (WBE): A women's business enterprise is a business which is certified as such by a State or Federal agency, or which meets the following definition:

A women's business enterprise is an independent business concern which is at least 51 percent owned by a woman or women who also control and operate it. Determination of whether a business is a least 51 percent owned by a woman or women shall be made without regard to community property laws. For example, an otherwise qualified WBE which is 51 percent owned by a married woman in a community state will not be disqualified because her husband has a 50 percent interest in her share. Similarly, a business that is 51 percent owned by a married man and 49 percent owned by an unmarried woman will not become a qualified WBE by virtue of his wife's 50 percent interest in his share of the business.

C. Ownership and Control:

1. The minority of women's ownership's interest in the firm must be real, substantial and continuing. Such interest may include:
    a. risk of loss/share of profit commensurate with the proportional ownership; and
    b. receipt of the customary incidents of ownership, such as salary and/or intangible benefits.

2. A minority or woman owner must have and exercise the authority to independently control the business. The minority or woman owner need not be continually present to be deemed in control. Characteristics of control may include:
    a. authority to sign contacts;
    b. making decisions in price negotiations;
    c. incurring liabilities for the firm;
    d. making final staffing decisions;
    e. policy-making; and

f. making general company management decisions.

3. Only those firms performing a useful business function according to custom and practice in the industry are qualified as MBEs or WBEs. Acting merely as a passive conduit of funds to some other, non-minority firm where such activity is unnecessary to accomplish the project the project does not constitute a "useful business function according to custom and practice in the industry."

D. Recipient: A party receiving federal financial assistance under an EPA program pursuant to a grant or cooperative agreement.

E. Project: The scope of work from which a cooperative agreement, grant or grant amendment is awarded.

F. Bidder: A party seeking to obtain a contract with a recipient through a competitive, advertised, sealed bid process.

G. Offeror: A party seeking to obtain a contract with a recipient through a negotiated procurement process.

III. RESPONSIBILITIES

A. Headquarters.
   1. The office in charge of the assistance program (program office) has primary responsibility for implementation of the MBE/WBE program, in cooperation with the Office of Small and Disadvantaged Business Utilization (OSDBU).
   2. OSBDU is responsible for serving as the Agency focal point for inquiries on the MBE/WBE program, providing explanation of the program and guidance to MBEs and WBEs interested in working on EPA funded projects.

B. Regional Responsibilities.
   1. Provide guidance and advice to recipients as requested.
   2. Maintain lists of those MBE and WBE firms which have participated in EPA funded projects. The Region may also add MBEs and WBEs requesting to be included on source lists. Such lists are for information purposes only, and shall carry a clear and prominent statement that the firms listed are neither endorsed nor guaranteed by EPA as bona fide MBE/WBEs. It is not necessary to be on any list in order to qualify as a bona fide MBE/WBE.

3. Monitor recipients for compliance with MBE/WBE requirements and for determining levels of MBE/WBE participation.

IV. RECIPIENT RESPONSIBILITIES

A. The recipient shall take affirmative steps to contract with MBEs and WBEs and ensure that its contractors and consultants take affirmative steps to contract with MBEs and WBEs during all phases of work funded or to be funded under an EPA assistance agreement. The recipient's affirmative steps as defined in EPA procurement regulations are the following:
   1. When feasible, dividing the total work to be contracted into smaller tasks in the solicitation documents to permit maximum MBE/WBE participation.
   2. Placing qualified MBEs and WBEs on solicitation lists of EPA Regional Offices and appropriate minority/women's business associations and agencies.
   3. Assuring that MBEs and WBEs are solicited whenever they are potential sources of service and supplies, for example, by:
      a. Holding pre-bid conferences, with interested MBEs and WBEs in attendance when possible, to highlight the requirements of this program to prospective bidders;
      b. Including this MBE/WBE interim guidance in requests for proposals (RFP) and invitations for bid (IFB);
      c. Publishing announcements of MBE/WBE opportunities for work on EPA funded projects;

      d. Developing a source list of MBE/WBEs and providing its list to prospective bidders/offerors;

4. The recipient may wish to engage a MBE/WBE liaison to compile the list.
5. The recipient may wish to use available lists such as those of the EPA Regional Office, adjacent municipalities, appropriate minority/women associations. Names of these agencies with address and phone number should also be included on the recipient's source list.
    a. Providing necessary and appropriate liaison services between MBE/ WBEs and prospective bidders/offerors. (Liaison service should not be delegated to consultants where a potential for conflict of interest exists.)

6. When project requirements permit, establishing delivery schedules which encourage participation of MBE/WBEs.
7. Using the services and assistance of the Small Business Administration (SBA), the Minority Business Development Agency (MBDA), and other federal, State and local agencies when appropriate.

B. Unless otherwise provided in the specifications, compliance with the MBE/WBE requirement in the regulations is a matter of bidder/offeror responsibility.
C. The recipient is responsible for monitoring work in progress to ensure that MBE and WBE subcontractors and joint venturers are actually participating in the performance of the subcontract or joint venture contract and to insure that the consultant/contractor is fulfilling its obligations with respect to MBE/WBE requirements under the contract.
D. As part of the documentation required under 40 CFR 31.36(b)(9), the recipient shall maintain and update records of MBE/WBE participation and supply data to the delegated State when requested. Such records may include:
    1. Name of MBE/WBEs being utilized;
    2. Work designated to be performed by MBE/WBE;
    3. Dollar value of that work;
    4. Portion of project being performed by MBEs and WBEs.

V. BIDDER AND OFFEROR RESPONSIBILITIES

A. Affirmative Steps: Activities during preparation of bids and offers. Bidders/offerors shall take affirmative steps in compliance with the regulations, prior to submission of bids or closing date for receipt of initial offers, to encourage participation in projects by MBEs and WBEs. Such efforts include:
    1. When feasible, segmenting total work requirements to permit maximum MBE/WBE participation.
    2. Assuring the MBEs and WBEs are solicited whenever they are potential sources of goods or services. This step may include:
        a. Sending letters or making other personal contacts with MBEs and WBEs, (e.g. those whose names appear on lists prepared by EPA or the recipient and other MBE/WBEs known to the bidder/offeror). MBEs and WBEs should be contacted when other potential subcontractors are contacted, within reasonable time prior to bid submission or closing date for receipt of initial offers. Those letters or other contacts should communicate the following:
            1) Specific description of the work to be subcontracted;
            2) How and where to obtain a copy of plans and specifications or other detailed information needed to prepare a detailed price quotation;
            3) Date the quotation is due the bidder/offeror;
            4) Name, address, and phone number of the person in the bidder/offeror's firm whom the prospective MBE/WBE subcontractor should contact for additional information.

        b. Sending letters or making other personal contacts with local, State, federal and private agencies and MBE/WBE associations relevant to the project. Such contacts should provide the same information provided in the direct contacts to MBE/WBE firms.

    3. Where feasible, establishing delivery schedules which will encourage participation by MBEs and WBEs.

B. Bidders/offerors must demonstrate compliance with the MBE/WBE requirements in order to be deemed responsible. Demonstration of compliance may include the following information, however the recipient may specify other methods of demonstrating compliance:
   1. Names, addresses and phone numbers of MBE/WBEs expected to perform work.
   2. Work to be performed by the MBEs and WBEs.
   3. Aggregate dollar amount of work to be performed by MBEs and WBEs, showing aggregate to MBEs and aggregate to WBEs separately.
   4. Description of contacts to MBE and WBE organizations, agencies and associations which service MBEs/WBEs, including names of organizations, agencies and associations and dates of contact.
   5. Description of contacts to MBEs and WBEs, including number of contacts, fields, (i.e. equipment or material supplier, excavators, transport serviced, electrical subcontractors, plumbers, etc.) and dates of contacts.

C. Successful bidders/offerors should take reasonable affirmative steps to subcontract with MBEs and WBEs whenever additional subcontracting opportunities arise during the performance of the contract.

VI. MBE AND WBE RESPONSIBILITIES

MBEs and WBEs are responsible for promoting themselves and taking the initiative to obtain contracts and subcontracts, and for encouraging joint venture arrangements. MBEs/WBEs interested in working on EPA funded projects are strongly encouraged to take the following steps:

A. Submit information to the recipients to identify status as a MBE/WBE.
B. Become certified as MBE/WBE under available State of federal agency procedures.
C. Contact federal, State, and local MBE/WBE liaison offices to obtain information on potential jobs.
D. Provide capability statements to State agencies, recipients, consulting engineers, and contractors, stating type(s) of work performed by the firm, size of job that the firm can handle, bonding information, and any special skills.
E. Make every effort to establish contacts and relationships with contractors for potential future business, including attending pre-bid conferences and subscribing to industry and trade journals.
F. Contact EPA Regional offices or appropriate State offices to obtain information on planned EPA funded projects.
G. Respond promptly to solicitation requests.

VII. REMEDIES FFOR NONCOMPLIANCE

A. Protests. A bidder/offeror for EPA funded work or MBE/WBE with an adversely affected direct financial interest may file a bid protest with the recipient pursuant to EPA procurement regulations 40 CFR 31.36(b)(12). These procedures are available to protest alleged violation of federal MBE/WBE requirements and may not be used to enforce local or State MBE/WBE requirements.
B. Upon a finding by EPA that a recipient, bidder/offeror, consultant, contractor or subcontractor has not complied with the MBE/WBE requirements of EPA regulations, EPA may invoke any and all sanctions and remedies specified in EPA regulations.

VIII. STATE OR LOCAL LAW

Nothing in this program prevents a State or recipient from applying more stringent MBE/WBE requirements or procurement obligations which pertain to bid responsiveness or percentage of MBE and WBE participation.

US ENVIRONMENTAL PROTECTION AGENCY

CERTIFICATION OF NONSEGREGATED FACILITIES

(Applicable to contracts, subcontracts, and agreements with the applicants who are themselves performing Federally assisted construction contracts, exceeding $10,000, which are not exempt from the provisions of the Equal Opportunity Clause.)

By the submission of this bid, the bidder, offeror, applicant, or subcontractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder, offeror, applicant, or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, 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 which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files; and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES

A Certification of Non-segregated Facilities, as required by the May 9, 1967 order (33 F.R. 7808, May 28, 1968) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Signature _____ Date _____

Name and Title of Signer (Please Type) _____

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001

EPA-7 5720-4.2 (6/2/77)

Recipient Certification - Anti-Lobbying Act of 1990

US Department of the Interior

Certification Regarding Lobbying

This certification is required by Section 1352, title 31, US Code, entitled "Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions."

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

Certification for Contracts, Grants, Loans, and Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to person for influencing or attempting to influence an officer or employee of any agency, a Member Congress, and officer or employee of Congress, or an employee of a Member of Congress in 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 have been paid or will be paid to any person for 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 this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3) The undersigned shall require that of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, US Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature _____ Date _____

Instructions for Certification

1. This certification and a disclosure form should be filed by each person as required, with each submission that initiates agency consideration of such person for: (1) award of a Federal contract, grant, or cooperative agreement exceeding $100,000 or (2) an award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding $ 150,000.

2. This certification and a disclosure form should be filed by each person as required, upon receipt by such person of(1) a Federal contract, grant, or cooperative agreement exceeding $100,000; or (2) a loan or a commitment providing for the United States to insure or guarantee a loan exceeding $150,000, unless such person previously filed a certification, and a disclosure form, if required, at the time agency consideration was initiated.

3. Any person who requests or receives from a person referred to in paragraphs (1) and (2) above: (1) a subcontract exceeding $100,000 at any tier under a Federal contract; (2) a subgrant, contract, or subcontract exceeding $100,000 at any tier under a Federal grant (3) a contract or subcontract exceeding $100,000 at any tier under a Federal loan exceeding $150,000; or, (4) a contract or subcontract exceeding $100,000 at any tier under a Federal cooperative agreement, shall file a certification, and a disclosure form, as required, to the next tier above.

4. All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the person referred to in paragraphs (1) or (2) above. That Person shall forward all disclosure forms to the appropriate Bureau/Office within the Department of the Interior.

5. Any certification or disclosure form flied under paragraph (4) above shall be treated as a material representation of fact upon which all receiving tiers shall rely. All liability arising from an erroneous representation shall be borne solely by the tier filing that representation and shall not be shared by any tier to which the erroneous representation is forwarded. Submitting an erroneous or disclosure constitutes a failure to file the required certification or disclosure, respectively. If a person fails to file a required certification or disclosure, the United States may pursue all available remedies, including those authorized by Section 1352, title 31. US Code.

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subwardee or prime federal recipient, at the initiation or receipt of a covered federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity 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 covered federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered federal action.

2. Identify the status of the covered federal action.

3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include congressional district, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee (e.g., the first subawardee of the prime is the first tier). Subawards include, but are not limited to, subcontracts, subgrants and contract awards under grants.

5. If the organization filling the report in Item 4 checks “Subawardee,” then enter the full name, address, city, state and zip code of the prime federal recipient. Include congressional district, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the federal program name or description for the covered federal action (Item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate federal identifying number available for the federal action identified in Item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant or loan award number; the application/proposal control number assigned by the federal agency). Include prefixes (e.g., “RFP-DE-90-001”).

9. For a covered federal action where there has been an award or loan commitment by the federal agency, enter the federal amount of the award/loan commitment for the prime entity identified in Item 4 or 5.

10. a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in Item 4 to influence the covered federal action.

b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter last name, first name and middle initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (Item 4) to the lobbying entity (Item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify name.

14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with federal officials. Identify the federal official(s) or employee(s) contacted or the officer(s), employee(s), or member(s) of Congress that were contacted.

15. Check whether or not a SF-LLL-A Continuation Sheet(s) is/are attached.

16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection at of intermission is estimated to average 30 minutes per response. Including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project, (0348-0045), Washington DC 20503

(See reverse for public burden disclosure)

1. Type of Federal Action:	**2. Status of Federal Action:**	**3. Report Type:**
☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	☐ a. Bid/Offer/Application b. Initial Award c. Post-award	☐ a. Initial/Filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	**5. If Reporting Entity in No. 4 is Subawardee, enter name and Address of Prime:**
☐ Prime ☐ Subawardee Tier_____, *if known* **Congressional District**, *if known*	 **Congressional District**, *if known*
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*
8. Federal Action Number, if known:	**9. Award Amount, if known:** **$**
10. a. Name and Address of Lobbying Entity: *(if individual, last name, first name, MI)* (Attach Continuation Sheet(s) SF-LLL-A if Necessary)	**b. Individuals Performing Services (***including address if different from No. 10a) (last name, first name, MI)*
11. Amount of Payment *(check all that apply):* $_____ ☐ actual ☐ planned	**12. Form of Payment** *(check all that apply):* ☐ a. cash ☐ b. in-kind; specify: nature_____ value _____

13. Type of Payment *(check all that apply):*

☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e. deferred
☐ f. other; specify: _____

14. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contracted, for Payment indicated in item 11:

(Attach Continuation Sheet(s) SF-LLL-A if Necessary)

15. Continuation Sheet(s) SF-LLL-A attached: ☐ **Yes** ☐ **No**

16: The information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of facts upon which evidence was placed by the above when this transaction was made or started into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the congress semi-annually and will be available for public inspection. Any person which fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature:** _____ **Print Name:** _____ **Title:** _____
For Federal Use Only:	**Authorized for local reproduction** **Standard Form-LLL**

Telephone No.: _____ **Date:** _____

Approved By OMB
0348-0046

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

Authorized for local Reproduction
Standard Form LLL-A

NONDISCRIMINATION IN EMPLOYMENT

(Instructions for Bidders)

By the submission of its bid, each bidder acknowledges that he understands and agrees to be bound by the equal opportunity requirements of EPA regulations (40 CFR Part 8, particularly Section 8.4(b)), which shall be applicable throughout the performance of work under any contract awarded pursuant to this solicitation. Each bidder agrees that if awarded a contract, it will similarly bind contractually each subcontractor. In implementation of the foregoing policies, each bidder further understands and agrees that if awarded a contract, it must engage in affirmative action directed at promoting and ensuring equal employment opportunity in the workforce used under the contract (and that it must require contractually the same effort of all subcontractors whose subcontracts exceed $ 10,000). The bidder understands and agrees that “affirmative action” as used herein Shall constitute a good faith effort to achieve and maintain that amount of minority employment in the on-site workforce used on the project which corresponds, for each trade used, to the minority population in the serving labor market area from which workers are reasonably available for hire for the project.

STATE OF IOWA
DEPARTMENT OF NATURAL RESOURCES

PROPOSAL GUARANTEE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

of _____ as PRINCIPAL,

and _____

of _____ as SURETY(S),

are hereby held and firmly bound unto the state of Iowa in the penal sum of:

Twelve thousand five hundred Dollars $ 12,500.00

for the payment, whereof, the said PRINCIPAL and SURETY(S) bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the PRINCIPAL is herewith submitting to the state of Iowa, acting by and through the Iowa Department of Natural Resources, hereinafter called the DEPARTMENT, its sealed proposal for a contract for the

_____

_____

_____

at _____ in _____ County, Iowa.

NOW THEREFORE,
the conditions of this obligation are such that, if said proposal is rejected by the DEPARTMENT, or if said proposal is accepted by the DEPARTMENT and the PRINCIPAL shall enter into a contract in the form specified by the DEPARTMENT in accordance with the terms of the proposal and shall furnish a bond for the faithful performance of said contract in the form specified by the DEPARTMENT, this obligation shall be null and void. Otherwise it shall remain in full force and effect.

In the event that the said proposal is accepted by the DEPARTMENT and the PRINCIPAL shall fail to enter into the contract as defined herein or shall fail to furnish the performance bond as noted above within thirty (30) days of the approval of the award, the PRINCIPAL and SURETY(S) agree to forfeit to the DEPARTMENT the penal sum herein mentioned, it being understood that the liability of the SURETY(S) shall in no event exceed the penal sum of this obligation.

IN WITNESS WHEREOF,
the above bounden parties have executed this instrument under their several seals
this _____ day of _____, the name and corporate seal of each party being hereto affixed and
_____, 20 _____ these
presents duly signed by its undersigned representative pursuant to authority of its governing body.

PRINCIPAL:	SURETY:
_____	_____
_____	_____
_____	_____
_____	_____

If a partnership all partners must sign.

STATE OF IOWA
DEPARTMENT OF NATURAL RESOURCES

CONTRACT (Capital Improvement)

(Project Location)
(Project Description)
Project No.
(County), Iowa

THIS AGREEMENT, made this _____ day of, _____ , 20 _____ by and between the state of Iowa acting through the Department of Natural Resources hereinafter called the **DEPARTMENT** and:

_____ **located at** _____

hereinafter called the **CONTRACTOR**

WITNESSETH: That the **DEPARTMENT** agrees to pay the **CONTRACTOR** the contract price provided herein for the fulfillment of the work and the performance of the covenants set forth herein, and the **CONTRACTOR** agrees with the **DEPARTMENT** to commence and complete the project described as follows:

For the Sum of: _____ **Dollars ($)** _____ and all extra work in connection therewith, all in accordance with the terms and conditions herein contained: and to furnish at the **CONTRACTOR'S** own proper cost and expense, all material, equipment, labor, insurance, and other accessories and services necessary to construct and complete, in a workmanlike manner, ready for continuous operation, the above mentioned project. The work shall be performed in accordance with the requirements and provisions of the following documents, all of which are made a part hereof and collectively evidence and constitute the contract:

1. Notice to Bidders.
2. Instructions to bidders.
3. DNR Standard Specifications and Current Supplemental Specifications
4. Project Specifications Including Addenda Number _____ Through _____
5. Drawings, Sheet Number _____ Through _____ Inclusive
6. Contractor's Proposal.
7. Proposal Guarantee Bond.
8. Performance Bond.
9. This Instrument.
10. Modifications or Change Orders pursuant to DNR Standard Specifications
11. Resident Bidder Preference Certification on Non-Federal-Aid Projects

The parties to this contract understand that time of completion of the work under this contract is the essence to the contract. The **CONTRACTOR** hereby agrees to commence work under this contract in accordance with Section 1108 of the DNR Standard

Specifications and to complete all the work by _____

The **CONTRACTOR** hereby agrees that liquidated damages in the amount of _____ Dollars $ _____ shall be retained or assessed against the CONTRACTOR for each day and every day the completion of the work is delayed beyond the time specified herein, not as a penalty, but as a mutually agreed to, predetermined amount to reimburse the **DEPARTMENT** for salaries of engineers and reviewers, clerk hire, interest charged during the period for delays and loss of use.

It is understood that the **CONTRACTOR** consents to the jurisdiction of the courts of Iowa, to hear, determine and render judgment as to any controversy arising hereunder, and that this contract shall be governed by, and construed according to, the laws of the state of Iowa.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, in the day and year first above mentioned.

FOR THE DEPARTMENT:

_____
Director

This contract was approved by the **NATURAL RESOURCES COMMISSION** at its meeting held on

_____
(Date)

FOR THE CONTRACTOR:

_____
(Signature and Title)

_____
(Firm)

_____
(Address and Zip Code)

_____
Remit Address and Zip Code (if different than above)

Seal if by a Corporation:

Identification Number _____

Soc. Sec. No. _____

Or Fed. I. D. No. _____

STATE OF IOWA
DEPARTMENT OF NATURAL RESOURCES

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

of _____ as PRINCIPAL,

and _____

of _____ as SURETY(S),

are hereby held and firmly bound unto the state of Iowa in the penal sum of:

_____ Dollars $ _____

for the payment, whereof, the said PRINCIPAL and SURETY(S) bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that whereas the PRINCIPAL entered a certain contract, hereto attached, and made part, hereof to the state of Iowa, acting by and through the Iowa Department of Natural Resources, hereinafter called the DEPARTMENT,

dated _____ for the _____

at _____ in _____ County, Iowa.

NOW THEREFORE,
the conditions of this obligation are such that, if the PRINCIPAL shall faithfully perform the contract in accordance with the plans, specifications and contract documents, and shall fully indemnify and save harmless the state of Iowa from all cost and damage which the state of Iowa may suffer by reason of the PRINCIPAL's default or failure to do so and shall fully reimburse and repay the state of Iowa all outlay and expenses which the state of Iowa may incur in making good any such default, then this obligation shall be null and void, otherwise it shall remain in force and effect.

In the event that the PRINCIPAL is in default under this contract as defined herein, the DEPARTMENT shall by written notice inform the PRINCIPAL that this contract is in default; and may, at its option, without process or action at law:

1. Take over all or any portion of the work and complete it either by day labor or reletting the work. The DEPARTMENT may retain all material, equipment and tools on the work, at a rental which it considers reasonable, until the work has been completed.
2. Allow the surety to take over the work within fifteen (15) days and assume completion of said contract and become entitled to the balance of the contract price.
3. Allow the PRINCIPAL to complete the contract.

As required by Chapter 573 of the Code of Iowa.

1. The PRINCIPAL SURETY(S) on this bond hereby agree to pay all persons, firms or corporations having contracts directly with the PRINCIPAL or with subcontractors, all just claims due them for labor performed or material furnished, in the performance of the contract on account of which this bond is given, when the same are not satisfied out of the portion of the contract price shall have been established as provided by law.
2. Every Surety on this bond shall be deemed and held, any contract to the contrary notwithstanding, to consent without notices:
    a. To any extension of time to the contractor in which to perform the contract.
    b. To any change in the plans, specifications, or contract, when such changes does not involve an increase of more than 20 percent of the total contract price, and then only as to such excess increase.
    c. That no provision of this bond or any other contract shall be valid which limits less than one year from the time of the acceptance of the work, the right to sue on this bond for defect in workmanship or material not discovered or known to the DEPARTMENT at the time such work was accepted.

No provision of this bond or any other contract shall be valid which limits to less than five years after the acceptance of the work, the right to sue on this bond for defects in workmanship or material in connection with paving or concrete work.

IN WITNESS WHEREOF,
the above bounden parties have executed this instrument under their several seals this _____ day of _____, the name and corporate seal of each party being hereto affixed and _____, 20 _____ these presents duly signed by its undersigned representative pursuant to authority of its governing body.

PRINCIPAL:	SURETY:
_____	_____
_____	_____
_____	_____
_____	_____

If a partnership all partners must sign.

This bond approved by the Iowa Department of Natural Resources this _____ day of _____, 20 _____

By: _____
Director

IOWA DEPARTMENT OF NATURAL RESOURCES
GENERAL COVENANTS AND PROVISIONS
SECTION NO. 00700
JANUARY 1993 (Revised 12/12/2023)

This section consists of the general provisions applying to all types of construction and maintenance as set forth in the following sections

Part 1100. Definitions
Part 1101. Instructions to Bidders
Part 1102. Bidder Qualifications
Part 1103. Award and Execution of Contract
Part 1104. Scope of Work
Part 1105. Control of Work
Part 1106. Control of Materials
Part 1107. Legal Relations and Responsibilities to the Public
Part 1108. Prosecution and Progress
Part 1109. Measurement and Payment

PART 1100. DEFINITIONS

1100.01 GENERAL

A. Whenever in these specifications or in other contract documents, the following definitions, or terms or both, or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:
B. In order to avoid cumbersome and confusing repetition of expressions in these specifications, it is provided that whenever anything is, or is to be done, if, as, or, when, or where "contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable , unacceptable, suitable, accepted, satisfactory , unsatisfactory, sufficient, insufficient, rejected, or condemned," it shall be understood as if the expression were followed by the words "by the Engineer" or "to the Engineer."
C. The titles or headings of the sections and articles herein, or referred to on the plans, are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.
D. Working titles and pronouns used for any person referred to in these specifications may be used with a masculine gender for the sake of brevity and are intended to refer to persons of either sex.

1100.02 DEFINITIONS OF ABBREVIATIONS

A. Whenever the following abbreviations are used in these specifications or on the plans, they are to be construed the same as the respective expressions represented.

AAN - American Association of Nurserymen
AAR - Association of American Railroads
AASHTO (or AASHO) - American Association of State Highway and Transportation Officials
ACI - American Concrete Institute
AIA - American Institute of Architects
ANSI - American National Standards Institute
APWA - American Public Works Association
ARA - American Railway Association
AREA - American Railway Engineering Association
ASCE - American Society of Civil Engineers
ASLA - American Society of Landscape Architects
ASTM - American Society of Testing and Materials
AWPA - American Wood Preservers Association
AWS - American Welding Society
AWWA - American Water Works Association
CFR - Code of Federal Regulations
DNR - Iowa Department of Natural Resources
DOT - Iowa Department of Transportation

EEI - Edison Electric Institute
EPA - Environmental Protection Agency
FHWA - Federal Highway Administration
FSS - Federal Specifications and Standards
IEES - Institute of Electrical and Electronics Engineers
IES - Illuminating Engineering Society
ICEA (or IPCEA) - Insulated Cable Engineers Association
MUTCD - Manual on Uniform Traffic Control Devices
NEC - National Electrical Code
NECA - National Electrical Contractors Association
NEMA - National Electrical Manufacturers Association
NFPA - National Fire Protection Association
NRC - Natural Resource Commission
SBC - State Building Code
UBC - Uniform Building Code
UL - Underwriters Laboratories, Incorporated
UMC - Uniform Mechanical Code
UPC - Uniform Plumbing Code
US - United States
USC - United State Code

B. Abbreviations may be used for materials and classes of work:
AC - Asphalt cement
ACC - Asphalt cement concrete
ATB - Asphalt treated base
BSC - Bituminous seal coat
BTA - Bituminous treated aggregate
CTG - Cement treated granular
PCC - Portland cement concrete
SAS - Soil-aggregate subbase
SLS - Soil-lime subbase

1100.03 DEFINITIONS OF TERMS

1. Acceptable Work - Work in reasonably close conformance with the contract requirements.
2. Addendum or Addenda - Changes, revisions, or clarifications of the specifications of contract documents which have been issued to prospective bidders, prior to the time of receiving bids.
3. Advertisement - The public announcements, publications, or solicitations as required by the Contracting Authority, inviting bids for work to be performed.
4. Approval of Award - The acceptance by the Contracting Authority of a bid.
5. Approximate Starting Date - A calendar day shown on the proposal on which it is anticipated, at the time of the letting, that conditions will be such as to permit the Contractor to commence work.
6. Assignment of Contract -The written agreement whereby the Contractor sells, assigns, or transfers his rights in the contract to any person, firm, or corporation.
7. Award - The execution of the contract.
8. Bidder - An individual, firm, corporation, or joint venture submitting a bid for the advertised work.
9. Bureau Chief – The individual appointed by the Iowa Department of Natural Resources as the head of the Land and Waters bureau.
10. Calendar Day - Every day shown on the calendar.
11. Change Order - A written order to the Contractor, signed by the Engineer, ordering a change which has been found necessary in the work from that originally shown by the plans and specifications. Change orders duly signed and executed by the Contractor constitute authorized modifications of the contract.
12. Channel - A natural or artificial water course.

13. Classes of Work - The divisions made for the purpose of measuring and paying for labor to be performed or materials to be furnished according to the methods of construction involved, as indicated by the items for which bids have been received for each specific contract.
14. Commencement of Work - Work will be considered commenced when the Contractor's operations are started on items of work covered by the contract documents and which require inspection, or when the Contractor notifies the Engineer, and the Engineer agrees, that the Contractor's equipment and personnel are available at the site, but his operations are prevented by weather or soil conditions.
15. Commission - The state Natural Resources Commission as constituted under the laws of the state of Iowa (which is the party of the first part in the contract, let in behalf of the State, of which these specifications are a part).
16. Commissioner - A member of the state Natural Resources Commission.
17. Contract (Also Contract Document) - The written agreement between the Contracting Authority and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of payment. The contract includes the notice to bidders, proposal, contract form, and contract bonds specifications, supplemental specifications, special provisions, all items covered on the table of contents, plans, notice to proceed, and any change orders and agreements which are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.
18. Contract Item (Pay Item) - A specifically described unit of work for which a price is provided in the contract.
19. Contract Period (Also Contract Time) - The number of working days or calendar days allowed for completion of the contract, including authorized time extensions. In case a calendar date of completion is shown in the proposal, in lieu of or in addition to the working days, the contract shall be completed by that date.
20. Contract Sum - The aggregate sum obtained by totaling the amounts arrived at by multiplying the number of units of each class of work, as shown in the contracts by the unit price specified in the contract for that class of work.
21. Contracting Authority - The governmental body, board, commission, or officer having authority to award a contract.
22. Contractor - The individual, firm, corporation, or joint venture contracting with the Contracting Authority for performance of prescribed work.
23. Contractor Registration - The registration number issued by the Division of Labor Service, in accordance with Chapter 91C of the Code of Iowa.
24. Deficient Work - Work not in reasonably close conformance with the contract requirements, or otherwise inferior, but in the opinion of the Engineer, reasonably acceptable for its intended use and allowed to remain in place.
25. Department of Economic Development - As defined in Chapter 15, Code of Iowa.
26. Department of Labor Services - As defined in Chapter 91, Code of Iowa.
27. Department of Natural Resources (Department)- The Department of Natural Resources, as defined in Chapter 455A, Code of Iowa.
28. Department of Revenue and Finance - As defined in Chapter 421, Code of Iowa.
29. Department of Transportation -The Department of Transportation, as defined in Chapter 307, Code of Iowa.
30. Director - The duly appointed executive officer for the Department of Natural Resources.
31. Drainage Ditch -An artificially constructed, open depression, other than a road ditch, which is constructed for the purpose of carrying surface water runoff.
32. Drawings (or Plans) - The approved plans, profiles, typical cross sections, working drawings, and supplemental drawings, or exact reproductions thereof, including modifications, altered plan, revisions, and amendments, which show the locations characters dimensions, and details of the work to be done.
33. Employee - Any person working on the project, mentioned in the contract of which these specifications are a party, and who is under the direction or control, or receives compensation from, the Contractor or subcontractor.
34. Engineer - The Bureau Chief, or other authorized representative of the Contracting Authority, acting within the scope of the particular duties assigned, or of the authority given.
35. Equipment - All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and tools and apparatus necessary for the proper construction and acceptable completion of the work.

36. Extra Work - Work not provided for in the contract, as awarded, but deemed essential to the satisfactory completion of the contract within its intended scope and authorized by the Engineer. Extra work shall not include additional materials, equipment, and labor used due to natural variations in the surface and subsurface conditions, except as specifically provided for elsewhere in the contract documents.
37. Extra Work Order - A change order concerning the performance of work or furnishing of materials involving additional work. Such additional work may be performed at agreed prices, or on a force-account basis, as provided elsewhere in these contract documents.
38. Independent Contractor - Any person, firm, or corporation who contracts with the Contractor to perform a service for which the basis of payment is in terms of units of service rather than salary or wages.
39. Inspector - An employee of the Contracting Authority and who is the authorized representative of the Engineer, assigned to make detailed inspections of any or all portions of the work, or materials included in the work.
40. Instruction to Bidders - The clauses setting forth in detail the information relative to the proposed work and requirements for the submission of proposals.
41. Invitation for Bids - See Notice to Bidders.
42. Item -See Contract Item.
43. Joint Venture - Two or more individuals, films or corporations combining any equipment, personnel or finances for the purpose of submitting a single bid.
44. Laboratory - The testing laboratory of the Contracting Authority, or any other testing laboratory which may be designated or approved by the Engineer.
45. Lands Acquired for the Work - The land area, reserved or secured by the Contracting Authority, upon which to construct the work, or where to obtain material therefrom.
46. Major Item of Work - Any contract item (Pay item) for which the original contract amount plus authorized additions is more than 10% of the total original contract sum or $50,000, whichever is less.
47. Materials - Any substances specified for use in the construction of the project and its appurtenances.
48. Notice to Bidders - That portion of the contract documents, prepared and furnished by the Contracting Authority for the information of bidders submitting proposals, which notice specifies provisions, requirements, and instructions pertaining to the method, manner, and time of submitting bids.
49. Notice to Proceed - Written notice to the Contractor to proceed with the contract work including, when applicable, the date of beginning of contract time.
50. Official Publications - The official publications are the formal resolutions and notices relative to the proposed improvement that are required by law to be published in a prescribed manner and that have been published in accordance with the statutes relating to them. Official publications area by statutes vested with all of the force and effect of contract obligations.
51. Owner - The state of Iowa, acting through the Iowa Department of Natural Resources as constituted under the laws of the state of Iowa.
52. Performance Bond - The bond executed by the Contractor and its surety in favor of the owner, guaranteeing the faithful performance of the contract and the payment of all debts pertaining to the work.
53. Plans (or Drawings) - The approved plans, profiles, typical cross sections, working drawings, and supplemental drawings, or exact reproductions thereof, including modifications, altered plan, revisions, and amendments, which show the locations characters dimensions, and details of the work to be done.
54. Project - One or more correlated improvements which constitute the complete improvement of a designated park, recreational reserve, state monument, lake, reserve, game area, fish hatchery, parkway, or other area under jurisdiction of the Department of Natural Resources.
55. Project Engineer - The representative of the Department of Natural Resources, regardless of actual title, directly in change of the work.
56. Proposal - The formal offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.
57. Proposal Form - The approved form on which the Contracting Authority requires formal bids to be prepared and submitted for the work.
58. Proposal Guarantee - The security furnished by the bidder with the proposal for a project(s), as guaranty the bidder will execute the contract for the work if the proposal is accepted..
59. Reasonably Close Conformity - Reasonably close conformity means compliance with reasonable and customary manufacturing and construction tolerances where working tolerances are not specified. Where working

tolerances are specified, reasonably close conformity means compliance with such working tolerances. Without detracting from the complete and absolute discretion of the Engineer to insist upon such working tolerances as establishing reasonably close conformity, the Engineer may accept variations beyond such tolerances, as reasonably close conformity, where they will not materially affect value or utility of the work and the interest of the State.

60. Right-of-Way - The land area, the right to possession of which is secured or reserved by the Contracting Authority for road purposes.
61. Road - A general term denoting a public way for vehicular travel, including the entire area within the right-of-way.
62. Shop drawings - See “working drawings”.
63. Special Provisions - Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project, method and manner.
64. Specifications - The requirements contained herein and in any supplemental specifications, or special provisions applying to the contract, and pertaining to the method and manner of performing the work, or to the quantity and quality of the materials to be furnished under the contract.
65. Specified Completion Date - The date specified in the proposal for completion of the work. After work has commenced or if the completion date is not specified, the last day of the contract period shall be the completion date.
66. Specified Starting Date - A calendar day shown on the proposal on which date commencement of the work is expected.
67. State - The State of Iowa acting through its authorized representative.
68. Station - One hundred lineal feet.
69. Subcontractor - Any individual, firm, or corporation to whom the Contractor, with the written consent of the Contracting Authority, sublets any part of the contract.
70. Superintendent - The Contractor’s authorized representative in responsible charge of the work.
71. Supplemental Agreement - Written agreement between the Contractor and the Contracting Authority, modifying the original contract.
72. Surety - The corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.
73. Targeted Small Business - Any enterprise, located in the state of Iowa, which is operated for profits under a single management, and which is 51 percent owned, operated, and actively managed by one or more women or minority persons, and has been certified by the Iowa Economic Development Authority.
74. Unacceptable Work - Work not in reasonably close conformance with the contract requirements and ordered to be removed and replaced.
75. Unauthorized Work - Work neither contemplated by the contract documents nor authorized by the Engineer, and work done contrary to the instructions of the Engineer.
76. Work - Work shall mean the furnishing of all labor, materials, equipment, and other incidentals, as detailed in the plans, specifications, and by the Engineer, necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract.
77. Work Order - A written order, signed by the Engineer, of contractual status, requiring performance by the Contractor without negotiation of any sort, and which may involve starting, resuming, or the suspension of work. (Not to be confused with extra work order.)
78. Working Day - Prior to commencement of work, beginning on the date designated in the notice to proceeds or beginning on the specified starting date, or as soon thereafter as provided in the specifications, a day other than Saturday, Sunday, or another recognized legal holiday. Any weekdays exclusive of Saturdays, Sundays, or recognized legal holidays on which weather or other conditions not under control of the Contractor, will permit construction operations to proceed for not less than 3/4 of a normal workday in the performance of a controlling item of work. If such conditions permit operations to proceed for at least 1/2 but less than 3/4 of the normal working hours, 1/2 of a working day will be counted. The days counted will exclude Saturdays, Sundays, and recognized legal holidays the Contractor does not work, but will include Saturdays, Sundays, and recognized legal holidays the Contractor does work. Nonproductive work that does not require inspection may be done on Saturdays with no time charged. Working days will not be charged for the day before or after a holiday when the contract documents specifically prohibit work and the Contractor does not work. Working days will not be

counted during periods of suspension of work ordered by the Engineer, except when the suspension is a result of a violation of terms of the contract.

79. Working Drawings - Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplementary plans or similar data which the Contractor is required to submit to the Engineer for approval. Also referred to as "shop drawings". After approval by the Engineer the working drawings became a part of the plans.

PART 1101. INSTRUCTIONS TO BIDDERS

1101.01 GENERAL

A. These instructions are intended to serve as a guide to the requirements with which the bidder must comply prior to and in submitting a proposal, including various "conditions" affecting the award of the contract. They do not in themselves inform the bidder of all the requirements that must be complied with under the contract.

B. The time for bid openings shall be the prevailing Central Standard or Daylight Savings time in force at Des Moines, Iowa on the date set forth in the Notice to Bidders.

C. Before submitting a bid, the bidder shall examine all the drawings and specifications enumerated in the table of contents of this project manual. The successful bidder will be required to do all the work that is shown on the drawings, mentioned in the specifications, or reasonably implied as necessary to complete this contract.

D. The bidder shall visit and examine the site to become acquainted with the adjacent areas, means of approach to the site, conditions of the actual job site, and the facilities for delivering, storing, placing, and handling of materials and equipment.

E. Failure to visit the site or failure to examine any and all contract documents will not relieve the successful bidder from the necessity of furnishing any materials or equipment, or performing any work that may be required to complete the work, in accordance with the drawings and specifications. Neglect of the above requirements will not be accepted as reason for delay in the work or additional compensation.

1101.02 DRAWINGS AND SPECIFICATIONS

A. The drawing and specifications, which are part of this contract, are enumerated in the table of contents of this project manual.

B. It is the responsibility of the bidder to examine the plans, proposal form, specifications, supplemental specifications, special provisions, the site of the works and the state of the work of other contractors on the project to assure that all requirements of the contract and the plans are fully understood. It is the bidder's responsibility to satisfy herself/himself as to the nature of the work and all reasonably ascertainable conditions that may affect his/her performance under the contract.

1101.03 INTERPRETATION

A. Nonverbal explanation or instructions will be given in regard to the meaning of the drawings or specifications during the bid period. Bidders shall bring all inadequacies, omissions, or conflicts to the Engineer's attention, at least ten days before the date set for the bidding. Prompt clarification will be supplied to all bidders of record by addendum.

B. Neither the Department of Natural Resources nor the Engineer will be responsible for verbal instructions.

C. Failure to request clarification or interpretation of the drawings and specifications will not relieve the successful bidder of responsibility. Signing of the contract will be considered as an implicit indication that the Contractor has thorough understanding of the scope of the work and comprehension of the contract documents.

1101.04 CONTENTS OF PROPOSAL FORMS

A. Bidders will be furnished with proposal forms stating the location and description of the proposed work, the approximate quantities of work to be performed or materials to be furnished, the form and amount of the required proposal guarantee, and the contract period.

B. The statement, "By virtue of statutory authority, preference will be given to products, provisions grown and coal produced within the state of Iowa where applicable," which is on the face of the proposal form shall not be applicable to contracts involving Federal-aid participation in construction.

C. The following bidding and letting regulations shall apply to all construction projects for which the Department receives bids.

1. Contracts will be recommended for approval for award on the basis of the greatest total savings in the public interest. The determination of which projects are to be awarded will be based on the approval by the appropriate Commission or other contracting agency.
2. Contractors shall not be permitted to tie projects or to designate on the bidding proposal the limit of the amount they will accept.

1101.05 PREPARATION OF PROPOSALS

A. Only signed proposals, submitted on forms furnished by the Contracting Authority, will be considered, and the bidder will be assumed to have familiarized himself with the requirements of all applicable contract documents. To insure consideration, the bidder shall specify a unit price in figures for each pay item for which a quantity is given and shall also show the products for the respective unit prices and quantities, written in figures in the column provided for the purposes and the total amount of the proposal obtained by adding the amounts of the several items. All the unit price figures shall be in ink or typed. If there is a discrepancy between unit bid prices, extensions, or total amounts of bid, the unit bid prices shall govern.

B. If the proposal is made by a partnership or corporations the name of the partnership or corporations its agents and its principal place of business shall be shown. The proposal shall be signed by an authorized agent of the partnership of corporation.

C. If the proposal is made on the basis of a joint bid, the proposal shall be signed by each of the joint bidders, or in the case of a firms' partnerships or corporations by an authorized agent for such firms' partnerships or corporations and the principal place of business for each shall be shown.

D. By signing and submitting the proposal, the bidder gives an unsworn declaration on behalf of each person, firm, association, partnership, or corporation submitting a proposal, certifying that such person, firm, association, partnership, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract, and is not under debarment currently by the Federal government for a criminal violation which is reasonably related to bidding and contracting procedures.

E. The attention of the bidders for the work covered by a proposal and referred to as this work, is directed to the fact that contracts for work other than the work covered in this proposal may have been awarded, are being advertised for letting on the same date as this work, or may be awarded in the future.

F. Completion of work covered by this proposal may be contingent upon certain work covered by other contracts being performed on the project in advance of this work, likewise, completion of work covered by other contracts may be dependent upon completion of work covered by this proposal.

G. The contract documents will list types of work involving other contracts anticipated to be let on the same letting date or same time within the contract period anticipated for this work. The contract documents will also list other governmental agencies, railroads, utilities, or other parties who will have work with which it is known that this work must be coordinated.

H. The bidder is expected to be familiar with work already in progress or previously let on this project, the contract periods, the progress being made, and any other conditions regarding that work which may affect his/her bid or his/her performance under this contract.

I. Cooperation and coordination of all contractors and other agencies authorized to do work on the project will be required.

J. The bidder for this work acknowledges these facts and agrees that it is in the public interest to have the work of certain contracts and agencies performed concurrently rather than consecutively. The bidder further agrees to cooperate and coordinate his work with that of other contractors or agencies to the mutual interest of all parties doing work on the project, whether by contract with the State, County, or City or necessary work being done by governmental agency or utility force.

K. By the submission of a bid on this works the bidder acknowledges and agrees that an investigation and inquiry has been made regarding the contracts for work with which this work must be coordinated.

L. In the event disputes arise between contractors or other agencies, or both, doing work on the project as to their mutual rights or obligations, the Contracting Authority or its authorized representative will, when requested to do so or upon his own motion, act as referee and define the rights of all interested parties with regard to the conduct of the work, which decision shall be final as provided in 1105.01.

M. If a prospective bidder, for a project for which the Department is the Contracting Authority, is in doubt as to the true meaning of any part of the contract documents, he may submit to the Contracting Authority a request for additional information, explanations, or interpretations. Interpretations may be in the form of an addendum to the proposal. The Contracting Authority will not be responsible for any information, explanation, or interpretation from any other source.

1101.06 IRREGULAR PROPOSALS

A. Proposals will be considered irregular, and may be rejected, for any unauthorized changes in the proposal form or for any of the following reasons:
   1. If on a form other than that furnished by the Contracting Authority, or if the form is altered or any part thereof is detached.
   2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
   3. If the bidder adds any provisions reserving the right to accept or reject an award because he is low bidder on another project in the same letting,
   4. If the bidder adds any provisions reserving the right to accept or reject an award or to enter into contract pursuant to an award.
   5. If a bid on one project is tied to a bid on any other project, except as specifically authorized on the proposal form by the Contracting Authority,
   6. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.

1101.07 ESTIMATE OF QUANTITIES

A. For all work let on a unit price basis, the Engineer's estimate of quantities, as shown in the notice to bidders and the proposals is understood to be approximate only, and will be used only for comparing bids except as otherwise provided in the basis of payment for the various classes of work.

1101.08 SUBMISSION OF PROPOSALS

A. All proposals shall be submitted on the standard proposal form prepared specifically for this project. An example of which is bound in this specification volume. Only proposals which are submitted on this form will be considered.
B. One copy of the proposal shall be submitted.
C. No proposal for any subdivision or any subclassification of the work, except as indicated, will be accepted. Any conditional bid, amendment to the proposal form, or the inclusion of any correspondence, written or printed matter, or details of any essential provision of the contract documents, or required consideration of unsolicited material or data in determining the award of the contracts will disqualify the proposal.
D. The bid amounts shall be inserted in the spaces provided on the proposal form, setting forth clearly and concisely, all designations and prices. Erasures or other changes on the proposal form must be explained or noted over the signature of the bidder.
E. Addenda issued during the time of bidding shall become part of the contract documents. Bidders shall acknowledge receipt of each addendum in the appropriate space provided on the proposal form. If no addenda are issued, the word "none" is to be entered in the space provided.
F. When samples are required, they must be submitted by the bidder so as to arrive at the designated office prior to the hour set for opening the proposals. Samples shall be furnished free of expense to the Department of Natural Resources, properly marked by identifications and accompanied by a list when there is more than one sample. The Department of Natural Resources reserves the right to mutilate or destroy any samples submitted whenever it may be considered necessary to do so for the purpose of testing. Samples not so mutilated or destroyed, when no longer required to be retained in connection with the award or delivery of supplies, will be returned at the bidder's expense, if such return is requested in the proposal.
G. All proposals must state the full business address of the bidder and be signed with the bidder's usual signature. Proposals by partnerships must state the full names of all partners and must state the name of the partnership followed by the signature and designation of one of the members of the partnership or an authorized representative. Proposals by corporations must state the legal name of the corporation and the name of the

state of incorporation followed by the signature and designation of the president, secretary, or other person authorized to bind the corporation to the proposal. Contractors are required to include the Iowa Contractors registration number assigned to them by the Iowa Division of Labor Services. The name of each person signing the proposal shall be typed or printed below the signature.

H. A proposal by a person who affixes to their signature the word “president”, “secretary”, “agent”, or any other designation without disclosing their principals may be held to be the proposal of the individual whose name is signed thereon. When requested by the Department of Natural Resources, satisfactory evidence of the authority of the officers signing in behalf of the corporation shall be furnished.

I. Proposals shall be submitted via email to the address specified in the Notice to Bidders. The subject line of the email containing the proposal and proposal guarantee must state the following: Project Number, Project Title, and the Bid Date. The bidder shall be responsible for emailing the proposal, with the proposal guarantee, on or before the date and time specified in the Notice to Bidders. The officer whose duty it is to open the proposal will decide when the specified time has arrived. Proposals received thereafter will not be considered. The Department shall notify the bidder in the event that a bid is determined to be late.

J. No bidder shall submit more than one proposal for identical work for the same project.

1101.09 WITHDRAWAL OF PROPOSALS

A. Proposals may be withdrawn by written or telegraphic request received from the bidder or authorized representative prior to the time fixed for opening of bids, without prejudice to the right of the bidder to file a new proposal. No proposals may be withdrawn by telephone request. Withdrawn proposals will be returned unopened. Negligence on the part of the bidder in preparing the proposal confers no right for withdrawal of the proposal after it has been opened.

1101.10 TAXES

A. The bidder shall include in the proposal all applicable federal and state taxes required by law. See Sales Tax Exemption below.

B. For the purposes of retail sales tax and use tax, general construction contractors, special construction contractors, and construction subcontractors are regarded as consumers or users of all tangible personal property which they purchaser acquire, or manufacture for use in complying their respective construction contracts.

C. Iowa retailers making sales, within the state of Iowa, of tangible personal property to a construction contractor for such use, are making sales at retail, the receipts of which are subject to retail sales tax. This means that a construction contractor should pay retail sales tax to his Iowa suppliers when purchases of tangible property are made within the state of Iowa. If a Contractor uses tangible personal property in completing the constructions which the Contractor has manufactured or fabricated, the tax will be 5% of the cost of manufacture.

D. This likewise means that any construction contractor purchasing, acquiring, or manufacturing tangible personal property outside the state of Iowa, for such use in Iowa, owes use tax on such out-of-state purchases, measured at the rate of 5% of the purchase prices or in the case of a product manufactured by the Contractor, the Contractor owes 5% of the cost of manufacture.

E. The use tax is to be paid by the Contractor directly to the Iowa Department of Revenue and Finance, using the retailer’s sales and use tax return, unless the out-of-state vendor from whom purchased is registered with the Use Tax Section of the Iowa Department of Revenue and does bill and collect the Iowa Use Tax for the state.

F. In accordance with Iowa Code Section423 , the DEPARTMENT will issue a Sales Tax Exemption Certificate to the CONTRACTOR, and each approved subcontractor, which will permit the material suppliers to sell material which will becomes an integral part of the structure exempt from Iowa sales tax and some applicable local option taxes and school infrastructure local option sales taxes.

G. The CONTRACTOR is responsible for keeping records identifying the materials and supplies purchased and verifying they were used as an integral part of the structure governed by this Contract. Any material purchased tax free and not used on this project are subject to taxes payable within the same quarter as the project completion date.

H. The Sales Tax Exemption Certificate must not be used to claim exemption for tax items not used on this project or that does not qualify for exemption under the provisions of the Iowa Code Sections listed above. Such misuse will result in civil or criminal penalties.

I. Bidders should anticipate that the sale and use tax could increase the cost of non-exempted services and material by at least 5% and make the necessary allowance before submitting a bid.
J. The Department will reclaim sales taxes, after receiving a Contractor's Statement of Sales Tax for those projects for which a Tax Exemption Certificate was not issued.

1101.11 WORK BY THE DEPARTMENT OF NATURAL RESOURCES

A. Unless specifically provided in the contracts the Department of Natural Resources will not furnish any labor, materials, or supplies necessary to complete the work under this contract.

1101.12 PREFERENCE FOR LABOR AND MATERIALS

A. The Contractor shall observe all of the laws of the state of Iowa with regard to preference for labor and materials, except that preference for Iowa labor and materials shall not apply when federal funding is to pay for any part of the project. When a project is federally funded it is indicated in the notice to bidders.

1101.13 PROPOSAL GUARANTEE

A. All proposals submitted by bidders must be accompanied by a proposal guarantee in the form of a certified check, cashier's check, or a proposal guarantee bond prepared on the standard proposal guarantee bond form furnished to the bidder by the Department of Natural Resources, an example of which is bound in this specification volume.
    1. The proposal guarantee shall be made payable to the Department of Natural Resources in the amount specified in the Notice to Bidders and on the proposal form.
    2. If the bond form is utilized in lieu of certified check or cashier's checks it must be executed by a surety company authorized by the Commissioner of Insurance for the state of Iowa to do business in Iowa and which has filed its certificate of authority with the Clerk of Court. One copy of the proposal guarantee bond form is furnished by the Department of Natural Resources with the contract documents. Only one executed copy must be submitted with the bid proposal.
B. Any bid which is not accompanied by a proposal guarantee will be considered no bid and will not be read at the bid opening.
C. All proposal guarantees submitted by unsuccessful bidders will be returned as stated in Section 1103.03 of the General Covenants and Provisions.

1101.14 AWARD OF THE CONTRACT

A. It is the intent of the Owner to award a contract to the lowest responsible Bidder provided the Bid has been submitted in accord with the requirements of the Bidding Documents, is judged reasonable, and does not exceed the funds available. Award of this contract will be at the place and at the time of the regularly scheduled meeting of the appropriate commission of the Department of Natural Resources following the opening of the proposals, except for reasonable delays as provided in Section 1103.02 of the General Covenants and Provisions.
B. The Department of Natural Resources reserves the right to reject all bids or any proposal or to waive informalities in any proposal or to accept any proposal which will best serve the interests of the state of Iowa.
C. If, at the time this contract is to be awarded, the lowest proposal submitted by a qualified responsible bidder is in the best interest of the state of Iowa, the contract will be awarded, and the bidder to whom the award is made will be promptly notified after the Department of Natural Resources meeting.
D. The Owner shall have the right to accept Alternates in any order or combination and to determine the low bidder on the sum of the Base Bid and the Alternates accepted.

1101.15 EXECUTION OF THE CONTRACT

A. The successful bidder shall, within thirty calendar days after the date of the award of the contract, enter into a written contract with the Department of Natural Resources on the forms furnished by the Department for the performance of the awarded work.

1101.16 PERFORMANCE GUARANTEE BOND

A. Simultaneously with delivery of the signed contract, the Contractor shall furnish a performance guarantee bond prepared on the standard performance guarantee bond form furnished to the Contractor by the Department of Natural Resources, an example of which is bound in the specification volume.

1. The bond must be executed by a surety company authorized by the Commissioner of Insurance of the State of Iowa to do business in Iowa and which has filed its Certificate of Authority with the Clerk of Court.
2. A copy of the performance guarantee bond form will be attached to a copy of the contract furnished by the Department to the Contractor after award of the contract. One executed copy of the bond must be returned to the Department with the signed contract, one copy of the bond may be retained by the surety company for its own records.

1101.17 CERTIFICATE OF INSURANCE

A. On or before execution of the contracts the Contractor shall furnish to the Department a certificate of liability and property damage insurance.
   1. The bidder is directed to examine the insurance coverage limits section of this specification volume to determine the coverage limits which apply to this project. Insurance certificates furnished to the Department of Natural Resources showing inadequate limits of coverage will be rejected, thus delaying final execution of the contract. See Sections 1103.04, 1107.02, and 1107.03 of the General Covenants and Provisions.

1101.18 COMMENCEMENT AND COMPLETION

A. The Contractor shall not commence work before the preconstruction meeting to be held after execution of the contract by all parties. The Contractor will be responsible for contacting the project Inspector to set up a time for the preconstruction meeting at the project site.
B. The Contractor must agree to complete the work by the date specified, or within the number of working days indicated if so specified in the contract. Should it be found impossible to complete the work on or before the time specified for completion, a written request may be submitted for a time extension, setting forth the reasons believed to justify the granting of such requests.

1101.19 APPEAL OF CONTRACT AWARD

A. If a Contractor who submitted a timely proposal disagrees with an award decision, it may appeal that decision by submitting a written appeal to department's director or the director's designee detailing the factual and legal basis for the challenge within five calendar days of the Notice of Intent to Award. The Issuing Officer may submit a written response to the Contractor's written appeal within five business days after receipt of the appeal. The department's director or designee will issue a written decision within seven business days of receipt of the Issuing Officer's written response.

PART 1102. BIDDER QUALIFICATIONS

1102.01 COMPETENCY AND OF BIDDERS

A. Bidders submitting proposals must be recognized contractors, engaged in the class of work provided for in the plans and specifications, and must possess sufficient resources to complete the work. Before the contract is awarded, the bidder may be required to furnish evidence to the satisfaction of the Contracting Authority of the ability to perform and complete the contract.

1102.02 QUALIFICATIONS OF THE BIDDER

A. Before award of the contract can be approved, the Department shall be satisfied that the bidder involved:
   1. Maintains a permanent place of business.
   2. Has adequate equipment to do the work properly and expeditiously.
   3. Has suitable financial status to meet the obligations incident to the work.
   4. Has appropriate technical experience.
   5. Has satisfactorily completed past projects.
   6. Is not ineligible due to discrimination in employment.

B. The Engineer will make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Engineer all such information and data for this purpose as the Engineer may request.
   1. The Department of Natural Resources reserves the right to reject a bid if the evidence submitted by, or an investigation of, such bidder fails to satisfy the Department of Natural Resources that the bidder is responsible and qualified to carry out the obligations of the contract and to complete the work contemplated therein.

C. Targeted Small Business set-aside projects.
   1. All contractors submitting proposals for set-aside projects shall meet the "Targeted Small Business" definitions and be capable of being certified by the Iowa Economic Development Authority within thirty (30) days after the bid letting date. Failure of the low bidder to become certified within this time will be just and sufficient cause for the denial of the award.
   2. Contractors eligible for "Targeted Small Business" designation, but not currently certified as such by the Department of Inspections and Appeals, should do so immediately by contacting the Targeted Small Business Officer, Lucas State Office Building, Des Moines, Iowa 50319 -0083.

1102.03 REDUCTIONS IN BIDDER QUALIFICATIONS RESTRICTIONS

A. The requirements and conditions for bidder qualifications may be reduced by the Contracting Authority either for contractors who have well established performance records in other fields or for contractors having adequate financial responsibility and experienced supervisory personnel available for the work that is under consideration or for both the above reasons.

B. Likewise, the requirements may be modified by the Contracting Authority for newly formed or reorganized firms or corporations whose basic organization is composed of individuals who are veterans of the construction industry, with proven records of satisfactory performance in the field in which they have elected to bid, provided, however, that they have adequate financial responsibility, equipment, and available experienced supervisory personnel.

1102.04 IMPOSITION OF INCREASE IN BIDDER QUALIFICATION REQUIREMENTS, SUSPENSIONS AND DISQUALIFICATION

A. The requirements and conditions for bidder qualification in 1102.01 may be imposed or re-imposed or increased, or a contractor may be suspended or disqualified.

B. The requirements and conditions for qualifications of a contractor may be imposed or re-imposed or increased if or when:
   1. The Contractor seriously delays commencement or completion of any work within the contract period or any extension thereof under circumstances that would normally give rise to a right of the Contracting Authority for liquidated damages or declaration of defaults or;
   2. The Contractor does any act or omits doing or performing any act which, in the judgment of the Contracting Authority, evidences a material change in the contractor's financial responsibility or work capability where, in the judgment of the Contracting Authority, the same will materially prejudice the contractor's ability to successfully prosecute such public improvement contracts, or he knowingly submits false information concerning prequalification, or;
   3. The Contractor takes or fails to take any action which the Contracting Authority deems to warrant an imposition of increase in bidder qualification requirements.

C. A contractor may be suspended from bidder qualification if or when:
   1. The Contractor continually fails or refuses to remove and replace materials or work found by the Engineer not to be in reasonably close conformity with the contract documents or to correct such material or work so as to cause such materials or finished product to be reasonably acceptable work, or;
   2. The Contractor continually and, in the judgment of the Engineer, without good cause therefor, fails to carry on the work in an acceptable manner, or refuses to comply with a written order of the Engineer within a reasonable time, or;
   3. The Contractor fails to perform with his own organization the work as required in 1108.01, or otherwise assigns or disposes of work or the contract or any part thereof without approval of the Contracting Authority, or;

4. The Contractor forfeits a proposal guaranty and fails to enter into the contract upon an offer of award by the guarantee Contracting Authority in response to a prior advertisement for bids for the same project for which award is currently being considered, or;
5. The Contractor fails to comply with nondiscrimination requirements of the Standard Specifications or Special Provisions, or;
6. The Contracting Authority deems a suspension is appropriate for reasons stated in Paragraph A, above.
7. The Contractor is debarred from doing work for the federal government.
8. The Contractor knowingly submitted false or misleading information concerning qualifications.

D. A suspension is intended to be for an indefinite period of time or, in the case of Paragraph C4, for a specific project. A suspension shall continue until the contractor resolves, to the satisfaction of the Contracting Authority the problem for which the suspension was made.

E. A contractor may be disqualified from bidder qualification if or when:
1. Currently debarred by some other state or Federal agency, or;
2. Subcontracts, employs, or otherwise uses services, for work of the Contracting Authority, of one who is debarred by the Contracting Authority or disqualified according to Paragraph 1, except to fulfill agreements for work on existing contracts, or;
3. Is convicted of or pleads guilty or nolo contendere to a charge of engaging in any conspiracy, combination, or other unlawful act in restraint of trade or of similar charges in any Federal court or a court of this or any other state, or;
4. Has offered or given gifts or gratuities to employees of the Contracting Authority in violation of State law or has had his employee a person who was at that time also an employee of the Contracting Authority, or;
5. The Contracting Authority deems a disqualification is appropriate for reasons stated in Paragraph C above.

F. A disqualification is intended to be for a specified time. A disqualification shall not exceed 36 months. The Contracting Authority will issue a written notice of any intent to disqualify or suspend a contractor, except when suspended for a specific project according to Paragraph C4.

G. Should the Contractor believe that the increase in bidder qualification requirements, intended suspensions or intended disqualification is based on false, biased, or incomplete information or that the increase or intended action is severe or unwarranted, the Contractor may make a written request to the Contracting Authority for an opportunity to be heard in a contested case pursuant to Chapter 17A, Code of Iowa.
1. If notice is given, the written request for a hearing must be filed with the Contracting Authority within 10 days of receipt of the notice of intended agency action.
2. If the basis of the intended disqualification is a criminal violation which is reasonably related to bidding and contracting procedures, the intended disqualification may be applied to the organization, including a person, firm, association, partnership, or corporation, to an affiliated officer, representative, or employee thereof, and to any other such organization in which the organization or affiliate or the officer, representative, or employee has an interest as either officer or owner.

H. When a notice is given or when any action is contested, the Contracting Authority will issue a notice of the final action taken.

1102.05 FOREIGN CORPORATIONS

A. Before entering into a contract involving construction or maintenance work, corporations organized under the laws of any other state shall file with the Contracting Authority a certificate from the Secretary of State of the State of Iowa showing that they have complied with all of the provisions of Chapter 489 Code of Iowa, governing foreign corporations. For contracts involving only the furnishing of materials, the foregoing requirement does not apply.

B. When a contract not involving federal-aid participation for a public improvement is to be awarded to the lowest responsible bidder, a resident bidder shall be allowed a preference over a nonresident bidder from a state or foreign country which gives or requires a preference to bidders from that state or foreign county. The preference is equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident.

C. If another state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable to bidders from that state or foreign county.

D. Any joint venture that includes a nonresident bidder will be considered nonresident, and the preference rule will be used.

1102.06 INCOME TAX DEDUCTION ON NON-RESIDENT CONTRACTORS

A. Each nonresident person or firm doing business as an individual and each nonresident co-partnership will be required, as precedent to receiving an award, to file a certificate issued by the State Tax Commissions as provided in Section 422.17, Code of Iowa, releasing the Contracting Authority from withholding any and all sums required by the provisions of Section 422.17, Code of Iowa.

PART 1103. APPROVAL FOR AWARD AND AWARD OF THE CONTRACT

1103.01 CONSIDERATION OF BIDS

A. The Contracting Authority reserves the right to waive technicalities and to reject any or all proposals. Bidders may be denied a contract award for any one of the following reasons:
   1. For failure to meet the Contracting Authority's requirements for qualification of bidders, as set forth in Section 1102.02 and in the special provisions for the project.
   2. For failure to maintain satisfactory progress on work already under contract.
   3. For failure to meet promptly financial obligations undertaken in connection with other work under contract.
   4. For filing more than one proposal at any letting for the same work under the same or different names.
   5. For an unsatisfactory record of performance and cooperation on previous contracts.
   6. For submitting an obviously unbalanced bid.
   7. For having sublet or otherwise assigned work without the approval of the Contracting Authority.
   8. For forfeiture of a proposal guarantee and failure to enter into contract upon an offer of an award by the Contracting Authority in response to a prior advertisement for bids for the same project or any combination of projects involving the project for which award is currently being considered.
   9. For failure to file and maintain with the Contracting Authority a current Certificate of Insurance meeting the requirements of 1107.02.
   10. For failure to provide a current Iowa contractor's registration number according to the provisions of Chapter 91C of the Code of Iowa.

1103.02 APPROVAL FOR AWARD

A. In the approval for award of contracts consideration will be given not only to prices bid but also to the mechanical and other equipment available to the bidders the financial responsibility of the bidders and his ability and experience in performance of like or similar contracts.

B. Approvals for award will be made as promptly as practical after bids have been opened and read. The Contracting Authority reserves the right to delay the approval for award for such time as is needed for consideration of bids and for receipt of concurrence in recommended approvals for award from other governmental agencies whose concurrence may be required.

1103.03 RETURN OF PROPOSAL GUARANTEE

A. Original submissions of proposal guaranties will be returned to the unsuccessful bidders by mail promptly after the approval for award has been made. Return to the successful bidder will be made promptly after the filing of the contract documents.

1103.04 CERTIFICATE OF INSURANCE

A. The Contractor's certificate of liability and property damage insurance described in 1107.02 shall be filed with the Contracting Authority on or before the execution of the contract and shall be maintained throughout the prosecution of the work and until final acceptance and completion of the contract. A separate verification shall be required for contracts awarded on the basis of joint bids.

1103.05 REQUIREMENT OF CONTRACT BOND

A. In compliance with Section 573 of the Code of Iowa, the Contractor shall, at the request of the Contracting Authority, on all contracts amounting to twenty-five thousand ($25,000.00) dollars or more, file an acceptable bond in an amount not less than 100 percent of the contract sum with the Contracting Authority.

1. The bond shall be executed on the standard form provided bythe Contracting Authority.. This bond shall be held to cover all work included in the contracts whether performed by the Contractor or under a subcontract or assignment. The bond shall be executed by the Contractor and by a surety company authorized to do business in the state of Iowa.
2. The Contractor shall not begin work on any contract before he is notified, in writing, that the required bond has been approved and accepted, or until the signed contract is returned to him.

B. Prime contractors that are certified through Iowa Iowa Economic Development Authority as a Targeted Small Business may request a performance bond waiver.
1. The waiver shall be applied only to a prime contract where the project does not exceed $50,000.00, not withstanding Section 573.2 of the Iowa Code.
2. The waiver shall only apply to those contractors which are able to demonstrate the inability of securing a bond because of a lack of experience.
3. A waiver shall not apply to business with a record of repeated failure of substantial performance or material breach of contract in prior circumstances. The granting of a waiver shall in no way relieve the business from its contractual obligations and shall not preclude the Contracting Authority from pursuing any remedies under the law upon default or breach of contract.

1103.06 EXECUTION OF CONTRACT

A. The bidder to whom a contract is being awarded shall execute and file such contract with the Contracting Authority.

1103.07 FAILURE TO EXECUTE CONTRACT

A. Unless the time limit is modified by Special Provisions, failure to execute a contract and file an acceptable bond within 30 days of the date of the approval for awardherein provided, will be just and sufficient cause for annulment of the approval for award and for forfeiture of the proposal guarantee to the Contracting Authority.

1103.08 SUBCONTRACTORS

A. The bidder to whom a contract is being awarded shall file a list of subcontractors ith the Contracting Authority within 30 days of the date of the approval for award. All subcontracts must comply with the provisions of 1106.01.

1103.09 MATERIAL SUBSTITUTION

A. The bidder to whom a contract is being awarded shall file all requests for materials substitutions within 30 days of the approval of award of the contract.

PART 1104. SCOPE OF WORK

1104.1 INTENT OF PLANS AND SPECIFICATIONS

A. The intent of the plans and specifications is to provide for the construction and completion of every detail of the work described therein. It shall be understood that the Contractor shall furnish all labor, material, tools, transportation, and supplies required for all or any part of the work to make each item complete in accordance with the spirit of the contract. It is understood that the apparent silence of the specifications as to any detail or the apparent omission of a detailed description concerning any point shall be regarded as meaning that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used.

A. For the purpose of design and the preparation of the Engineer's estimate, the Contracting Authority or its representatives may perform a reasonable amount of exploratory work to gain information relative to surface and subsurface conditions relating to types of soils moisture content, and types and extent of rock strata.
1. This information, when shown on the plans, represents a summary of conditions as of the date the survey was made, it is only an approximate estimation of the site conditions made merely to be suggestive to the Contracting Authority of construction conditions and quantities and classes of work. This information may be used as the bidder sees fit. The appearance of this information on the plans or specifications will not constitute a guarantee that conditions other than those indicated will not be encountered at the time of construction.

2. The bidder is advised that all information concerning the project, compiled by the Contracting Authority preceding the design, is available for examination at the Contracting Authority's headquarters. The prospective bidder shall conduct an examination as provided in 1102.06 to satisfy himself as to the character of the work to be done, the probable construction conditions, and any other reasonably ascertainable conditions and the potential effect these could have on the performance of work under the contracts which shall be the basis for the bid to be prepared.

B. Any bidder interested in the work is authorized to make whatever additional investigation he considers advisable. In making such additional investigation, the bidder is directed to the Engineer for information relating to available right-of-way. If there are, at that time, any parcels of land over which the Contracting Authority does not have jurisdiction, right-of-entry must be secured by the prospective bidder from those authorized to grant such permission.
   1. All such additional investigation work shall be performed without costing or obligating the Contracting Authority in any way.

1104.02 SPECIAL WORK

A. Any conditions not covered by these Standard Specifications are stated in the Special Provisions.

1104.03 INCREASED OR DECREASED QUANTITIES

A. The Contracting Authority reserves the right to make such increase or decrease in the quantities of the work shown on the plans as may be considered necessary to complete fully and satisfactorily the construction included in the contract. The compensation to the Contractor for such changes will be as provided in 1109.04.

B. Except as provided in 1109.05, no significant change in quantities, as defined in 1109.17, shall be made by increasing or decreasing the project area to be improved as shown on the plans and described in the proposal forms unless the Contractor gives written consent to such increase or decrease. However, such consent will not be required for maintenance or restoration work ordered by the Engineer.
   1. For the purpose of this article a material change shall be defined as an increase or decrease of more than 20 percent in the measured quantity of any item in the contract.

1104.04 EXTRA WORK

A. The Contracting Authority reserves the right to order, in writing, the performance of work of a class not contemplated in the proposal but which may be considered necessary to complete satisfactorily the work included in the contract. Such extra work will be paid for as provided in 1109.04B.

1104.05 MAINTENANCE OF DETOURS

A. Unless so required by the plans or the special provisions, the Contractor will not be required to assume any responsibility in connection with the maintenance or marking of suitable detours.

1104.06 REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS

A. The contractor for bridge and culvert work shall remove any existing structure, or part of structure, that in any way interferes with the new construction. If specific payment for such work has not been provided in the contract, it will be paid for as extra work.

B. The contractor for road work shall remove any materials or structures found on the right-of-way which are not designated to remain in place or which have not been designated for use in the new construction.
   1. The removal and disposal of pipe culverts will not be paid for directly but shall be considered as incidental works and the cost of such removal and disposal shall be considered to be included in the contract price for other items. Pipe culverts designated for salvage shall be removed by methods that will cause a minimum of damage to the pipe culverts.
   2. The removal and disposal of bridges or other masonry or monolithic concrete construction will be paid for. If the contract does not contain an item for such work, it will be paid for as extra work.

1104.07 RIGHTS IN AND USE OF MATERIALS FOUND ON THE RIGHT-OF-WAY

A. Unless stated to the contrary in the contract documents, all materials, such as stone, gravel, sand, timber, and structures or parts of structures, found on the right-of-way or on land acquired for the work, are the property of the Contracting Authority or the owner of the fee title to the land.
   1. If such materials are to be removed but use or salvage is not designated on the plans, they shall become the property of the Contractor, and shall be disposed of by the Contractor.
   2. When the Contractor is permitted to use materials found on the right-of-way, any excavations that are made below the grade elevations shall be backfilled with other suitable materials so that the finished road conforms to the grade shown on the plans. No extra compensation will be allowed for such backfilling.

1104.08 FINAL CLEANING UP

A. Before final acceptance of the work, the Contractor shall remove all unused material and rubbish from the site of the work, remedy any objectionable conditions the Contractor may have created on private property, and leave the project site in a neat and presentable condition. The Contractor shall make no agreement which allows salvaged or unused material to remain on private property within view of the project except when consistent with previous land use.
B. All ground occupied by the Contractor in connection with the work, which is within view of or adjacent to a road, shall be restored. Restoration shall include appropriate smoothing to its original condition and may include making the area suitable for cultivation and, where vegetation has been disturbed, seeding of the area.
   1. Unless otherwise provided for, the Contractor shall be responsible for securing waste privileges on private property. The general Contractor shall be responsible for cleanup of subcontractors at the completion of all work.
C. This article is not intended to restrict burning in accord with applicable regulations.
D. Final clean up shall be subject to approval of the Engineer.

1104.09 RIGHT-OF-WAYS OR LANDS ACQUIRED FOR THE WORK

A. Access to the construction site will be over designated routes of travel, on land owned or made available by the Contracting Authority for the specific use of the Contractor.
B. Right-of-way or lands will be provided without cost to the Contractor, and it is contemplated that all of the needed right-of-way or lands will have been acquired for the work placed under contract.
   1. Whenever it is necessary to secure additional right-of-way or land, performance of the work affected thereby is contingent upon the securing of such right-of-way or land. No claims will be allowed for loss or damage occasioned by delays in securing right-of-way or lands.

1104.10 PERMITS AND ARRANGEMENTS WITH OTHER GOVERNMENTAL AGENCIES

A. Whenever the work involves construction with which federal, state, or local governmental agencies are concerned, the performance of the work is contingent on arrangements and/or permits with those concerned agencies.
   1. The Contracting Authorityshall secure all necessary permits, certificates, and licenses required to prosecute the work, except specifically designated permits, local building permits, and any cost for inspections required by local authorities, which shall be paid for and secured by the Contractor.
   2. No additional compensation will be allowed for any delays, inconvenience, or damages sustained by the Contractor due to actions of those concerned agencies with respect to any arrangements or permits they may require.

1104.11 RAILROAD CROSSINGS

A. Whenever the work involves construction with which railroad companies are concerned, the performance of the work is contingent upon arrangements with the railroad companies for the proposed construction.
   1. The performance of the work shall be in accord with arrangements established by the Contracting Authority. The Contractor may make additional arrangements.
   2. No claim will be allowed for loss or damage caused by failure of the railroad to comply with provisions of the agreement with the Contracting Authority. Upon notice given, the Contracting Authority will institute necessary legal action to enforce the conditions of its agreement with the railroad company.

1104.12 PUBLIC UTILITIES

A. The Contracting Authority will notify all utility companies, all pipeline owners, or other parties affected, and will endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction made as soon as practicable.
B. The Contractor shall be responsible for notification concerning work near pipelines, required by Section 479.47, Code of Iowa, and for conducting his work as required therein.
C. Waterlines, gaslines, wirelines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the owners at their expense, except as otherwise provided for in the special provisions or as noted on the plans.
D. It is understood and agreed that the Contractor has considered in the bid all of the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him/her due to any interference from the utility appurtenances or their operation or relocation.

1104.13 DRAWINGS AND SPECIFICATIONS

A. Unless otherwise provided in the contract documents the Contracting Authority shall furnish to the Contractor, awarded the contract, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the work.

1104.14 THE CONTRACTING AUTHORITY'S RIGHT TO OCCUPY

A. The Contracting Authority shall have the right to enter the building or work site and store or attach such fixtures or furniture as it may elect, or to do such other work providing that such storage or work will not interfere with the completion of the Contractor's work. Such occupancy by the Contracting Authority shall in no way imply final acceptance of any portion of the Contractor's work.

1104.15 CONTRACTOR'S UNDERSTANDING

A. It is understood and agreed that the Contractor has, by careful examination, satisfied him/herself as to the nature, character and location of the work, conformation of the ground, character, quality and quantity of the materials to be encountered, character of the equipment and facilities needed, preliminary to and during the prosecution of the work, general and local conditions and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agency, or employee of the Contracting Authority, either before or after the execution of the contracts shall affect or modify any of the terms or obligations herein contained.

1104.16 HISTORICAL AND ARCHEOLOGICAL

A. If during the course of construction evidence of deposits of historical or archeological interest is found, the Contractor shall cease operations affecting the find and shall notify the Iowa Department of Natural Resources and the state Historic Preservation Officer. No further disturbance of the deposits shall occur until the contractor has been notified by the agency that he/she may proceed. The agency will issue a notice to proceed only after the state official has surveyed the find and made a determination to the Iowa Department of Natural Resources.
B. Compensation to the contractor, if any, for lost time or changes in construction to avoid the finds shall be determined in accordance with changed conditions or change order provisions of the specifications.

PART 1105. CONTROL OF WORK

1105.01 AUTHORITY OF ENGINEER

A. The Engineer will decide all questions which may arise as to the quality and acceptability of materials furnished and work performed and as to the rate of progress of the work, all disputed and mutual rights between contractors, all plans and specifications, and all questions as to the acceptable fulfillment of the contract on the part of the Contractor. Except as provided in Section 1109, the Engineer's decisions will be final.
B. For authority to temporarily suspend work see 1105.08 and 1108.06.

1105.02 PLANS

A. The official plans, profiles, and cross sections, on file in the office of the Contracting Authority, show the location, typical construction details, and dimensions of the work contemplated. The work shall be performed in conformity therewith, except in case of errors or unforeseen contingencies.

B. The plans are made from careful surveys and represent the foreseen construction requirements. Any appreciable deviation from the plans made necessary to expedite construction, or because of errors shall be called to the attention of the other party, in writing, by the party discovering such conditions. If necessary, revised plans will be provided.

1105.03 WORKING DRAWINGS

A. The plans will be supplemented by such working drawings as are necessary to adequately control the work. Working drawings shall be furnished by the Contractor, as required by the specifications or the plans.
   1. When certification by a professional structural or civil engineer registered in Iowa is required, it will be so designated on the plans or in other contract documents.
   2. Working drawings may include shop drawings of fabricated materials, erection plans, falsework plans, cofferdam plans, or other supplemental plans or data. Contractor submitted shop drawings for steel structures shall show fully detailed dimensions and sizes of all component parts of the structure, descriptions of drains, etc.
   3. Prior to review of working drawings, any work done or material ordered shall be at the Contractor's risk.
   4. The Contractor shall expressly understand that the Contracting Authority's review of working drawings submitted by the Contractor covers only requirements for strength and arrangement of component parts.
   5. The Contracting Authority assumes no responsibility for errors in dimensions and assumes the Contractor will use material complying with requirements of the contract documents, or, where not specified, those of sound and reasonable quality, and will erect the subjects of such working drawings in accord with recognized standards of first-quality workmanship or, when specified, in accordance with standards of the contract documents.
   6. If unanticipated and either unusual or complex construction procedures or site conditions occur, the Engineer may require the Contractor to submit such working drawings as, in the judgment of the Engineer, are necessary to satisfactorily complete the proposed construction.

1105.04 ALTERATION OF PLANS OR CHARACTER OF WORK

A. The Engineer will have the right to make alterations in plans or character of work as may be considered necessary or desirable during the progress of the work to satisfactorily complete the proposed construction. Such alteration will neither waive any conditions of the contract nor invalidate any of the provisions thereof.

1105.05 CONFORMITY WITH AND COORDINATION OF SPECIFICATIONS, PLANS AND SPECIAL PROVISIONS

A. Discrepancies within contract documents:
   1. In case of any discrepancy between the drawings on the plans and the figures written thereon, the figures, unless obviously incorrect, are to govern.
   2. In case of any discrepancy between the plans, including plan notes, and the general or supplemental specifications, the plans are to govern.
   3. In case of a discrepancy between the general specifications and supplemental specifications, the supplemental specifications are to govern.
   4. In case of any discrepancy between the general or supplemental specifications and the special provisions or between the plans and the special provisions, the special provisions shall govern.

B. The Contractor shall not take advantage of any apparent error or omission in the plans, specifications, or of any discrepancy between the plans or specifications. The Engineer shall be permitted to make such correction in interpretation as may be deemed necessary for the fulfillment of the intent of the plans and specifications, subject to compensation as provided in 1109.03, 1109.05, and 1109.06.

C. The plans shall not be so changed as to materially affect the cost or the difficulty of performing any item or work for which the contract amount is more than 20 percent of the total contract sum, except with the consent of the Contractor.

D. All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown on the plans or indicated in the specifications.
E. If the Engineer finds the material, or the finished product in which the material, is used is not within reasonably close conformity with the plans and specifications, but that reasonably acceptable work has been produced, the Engineer shall determine, based on engineering judgment, if the work shall be accepted and remain in place.
    1. In this event the Engineer will document the basis of acceptance and supplement it by contract modification which will provide for an appropriate adjustment in the contract price for such work or materials as deemed necessary to conform to the Engineer's determination.
F. If the Engineer finds the material, the finished product in which the material is used, or the work performed is not in reasonably close conformity with the plans and specifications and has resulted in an inferior or unsatisfactory product, the work or material shall be considered unacceptable and shall be removed and replaced, or otherwise corrected, as acceptable to the Engineer, by and at the expense of the Contractor.

1105.06 SUPERVISION BY CONTRACTOR

A. The Contractor, when absent from the construction site, shall have on-site, at all times, a competent superintendent as its agent, capable of reading and thoroughly understanding the plans, specifications, and other contract documents and who shall be thoroughly experienced in the type of work being performed.
    1. The superintendent shall supervise, direct, and control the Contractor's operations, personnel, work, and subcontractor's operations. The superintendent shall have full authority to execute orders or directions of the Engineer, without delays, and to promptly supply such materials, equipment, tools, labor, and incidentals as may be required.
    2. The Contractor shall give the Engineer written notification of the name of the superintendent. The superintendent shall not be replaced, except with the consent of the Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in the Contractors employ.

1105.07 CONSTRUCTION STAKES AND BENCH MARKS

A. If there is no provision in the Contract documents for a Construction Survey Bid Item, the Engineer will set the necessary centerline, slopes and grade stakes promptly upon notification by the Contractor that stakes are needed, unless otherwise noted on the Plans.
B. For all structures, unless otherwise noted on the Plans, the Engineer will set stakes for centerline and such other stakes as are necessary to establish definitely, the location, elevations, and alignment of the structure. Every reasonable precaution will be taken by the Engineer and his technical assistants to ensure that the construction stakes and/or computations are true and accurate, but the Contractor shall ensure that no gross error exists before beginning operations. Should such mistakes or errors be allowed to exist, and work completed on erroneous data, the Contractor will be held responsible to remedy the work to conform to the correct lines, grades, or standards without expense to the Contracting Authority or the Engineer.
C. The Contracting Authority shall not be responsible for delays due to lack of grade or line stakes, unless the Contractor has given the Engineer 48-hour written notice that such stakes will be needed, and the Contractor's work is being conducted in a satisfactory manner and at the specified rate of progress.
D. The Contractor shall be held responsible for the preservation of stakes and marks. If, in the opinion of the Engineer, any of the survey stakes or marks have been carelessly or willfully destroyed or disturbed by the Contractor, the cost of replacing them shall be charged against the Contractor.
E. The Contractor shall provide and keep constantly upon the work site, first-class instruments for use in establishing the various lines, levels and grades for the construction and shall have a superintendent on the work who is thoroughly familiar with their use. The Contractor shall provide and maintain a permanent bench mark at the construction site for the use of mechanics and other subcontractors.

1105.08 AUTHORITY AND DUTIES OF INSPECTOR

A. The Contracting Authority may appoint inspectors to represent the Engineer in the inspection of all materials used in and all work done under the Contract. Such inspection may extend to any part of the work and to preparation or manufacture of materials to be used.

1. The inspector will not be permitted to modify in any way the provisions of the contract documents or to delay the work by failing to inspect materials and work with reasonable promptness. An inspector is placed on the work to keep the Engineer informed as to its progress and the manner in which it is being performed. The inspector will not be authorized to approve or accept any portion of the work.
2. Results of inspection tests and examinations will be available to the Contractor on an informational basis. Absence or presence of representative test data does not alter the Contractor's responsibility for plan and specification compliance in accordance with 1104.01.
3. The inspector will not act as foreman or perform other duties for the Contractors nor improperly interfere with management of the work.
4. In case of dispute between the Contractor and inspector as to the quality of materials or manner of performing the works, the inspector will have authority to reject materials or suspend the work until the question at issue can be decided by the Engineer. Written notice of suspension of work will be given to the Engineer and Contractor by the inspector.

1105.09 INSPECTION OF WORK

A. The Contractor shall furnish the Engineer with every reasonable facility for ascertaining whether the work is being performed in conformance with the contract documents. At any time before acceptance of the works upon request of the Engineer, the Contractor shall remove or uncover such portions of finished work as the Engineer may direct. After examination has been made, the Contractor shall restore such portions of the work to the standard required by the contract documents.
   1. If work thus exposed or examined proves acceptable, the uncovering or removing and replacing of coverings or the restoring of parts removed, shall be paid for as extra work, except that no payment will be made for work involved in checking smoothness of concrete surfaces.
   2. If work thus exposed and examined proves unacceptable, the Contractor shall replace the defective work in accordance with the specifications.
   3. If work thus exposed and examined proves either unacceptable or deficient, the Contractor will be paid only for work as finally accepted.
   4. Work done without the Engineer having been afforded ample opportunity to provide suitable inspection, or unauthorized work, may be ordered removed and replaced at the Contractor's expenses or may be excluded from the quantities measured for payment.
B. If the specifications, Engineer's instructions, laws, ordinances, or any public authority require any work and/or materials to be specially tested or approved, the Contractor shall give the Engineer timely notice of readiness for review. If the review is to be made by authority other than the Engineer, the Contractor shall notify the Engineer of the date fixed for review. Reviews by the Engineer will be promptly made and, where practicable, at the source of supply.

1105.10 REMOVAL OF DEFECTIVE WORK

A. Any defective work shall be removed and replaced at the Contractor's expense.
B. Should the Contractor fail or refuse to remove defective work when so ordered by the Engineer, the Engineer shall have authority to order the Contractor to suspend further operations, and may withhold payment on estimates until such defective work has been removed and replaced in accordance with the plans and specifications.
   1. Continued failure or refusal on the part of the Contractor to correct defective work promptly shall be sufficient cause for the Contracting Authority to declare the contract in default and to complete the work in accordance with 1108.11.

1105.11 UNAUTHORIZED WORK

A. Unauthorized work and work done in excess of that provided by the lines and grades shown on the plans or as given by the Engineer, or any work done without the authority of the Engineers will be considered as unauthorized and will not be paid for.
   1. Unauthorized work may be ordered to be removed and replaced at the Contractors expense.

1105.12 OTHER CONTRACTS

A. The Contracting Authority reserves the right to do, or to contract for other work adjacent to, or in the vicinity of, the work herein described.

B. The Contractor agrees to permit such other work to progress and to arrange for joint occupation of the site under such provision as the Engineer determines necessary. If in the judgment of the Engineer, such joint occupation of the site impedes progress on the work herein described, the Contracting Authority will proportionally extend the time for completion of the work.

1. The Contractor hereby waives any claim for damages or extra compensation by reason of such interference with his work.

1105.13 FINAL INSPECTION

A. Upon notification, by the Contractor or his authorized representative, that the work is completed, the Engineer shall make prompt final inspection of each item of work included in the contract. If the work is found not to be in accordance with the contract documents, the Contractor will be advised as to the particular defects to be remedied before final acceptance can be made.

1105.14 RESTRICTIONS ON MOVING AND USE OF HEAVY EQUIPMENT

A. The following restrictions shall apply to the moving and use of heavy equipment:

1. Movement of equipment to and from the project shall be in compliance with the laws governing the operation of vehicles on the highways of Iowa. Movement and operation of equipment over completed portions of pavements, bituminous surfaces, base courses, and structures which are a part of the project shall be with legal axle loads, except as modified in this article.
2. In the case of earthwork and shouldering to be done in connection with either rigid or flexible pavement, or pavement widening and resurfacing, no tractor-drawn, earth-moving equipment shall be operated, or driven on or across the pavements, except at designated crossovers, as authorized by the Engineer.
    a. When crossovers are specifically permitted, the Contractor will designate, before use, the location and number of crossovers to be used. The Engineer will not approve crossovers in areas of limited sight distances, near structures, railroad crossings, or at any other location which will place safety of the traveling public in jeopardy. At these crossovers, equipment having axle loads greater than the maximum permitted by law may be used.
    b. Crossovers shall be 30 feet in length measured along the centerline and shall not be closer than 300 feet to each other.
    c. For each crossover used, the Contractor shall, at the Engineer's option, either replace the pavement or pay the Contracting Authority at the rate of five thousand ($5,000.00) dollars on the basis of a two-lane pavement.
    d. In lieu of the surface crossover, approved hauling bridges may be used. The hauling bridge shall accommodate two lanes of public traffic, and it shall be removed from the roadway at the close of each day's operations. When a hauling bridge is used, no payment will be required.
    e. The provisions of the Supplemental Specification for Traffic Controls in effect on the contract letting date, shall apply.
3. No dragline, cranes, or power shovel shall be operated with any part of the machine resting upon a pavement, bituminous surface, base course, or structure except with approval of the Engineer and in accord with restrictions in that approval.
4. Under no conditions shall machines equipped with metal lugs or similar projections on the treads be operated on the surface of a pavement, bituminous surface, or base course.
5. For building shoulders, on completed pavements of any type, the maximum axle load used for equipment operating on pavement shall not exceed the legal axle load, as defined herein.
6. Crawler-type tractors shall not be moved on or off a pavement or base course except at places where the compacted earth adjacent to slab is at least 2 inches higher than the surface of the pavement or base course. Whenever heavy, crawler-type equipment, such as a crane or mixers is moved on or off the edge of a pavement or base course, a substantial timber approach shall be built, at the edge of slab, to prevent overloading or otherwise injuring the edge of the slab.

7. Compacting equipment having axle loads greater than 20,000 pounds may be used on the work under the following provisions:
    a. The equipment shall be transported to and from the work and across the bridges on the work in compliance with laws of the State of Iowa.
    b. For compaction of subbase, the weight of equipment used shall not be greater than that of compaction equipment used in correction of the roadbed for grade and cross section.
    c. For compaction of base course, the weight of equipment used shall not be greater than the weight of equipment used in compaction of the subbase on which the base is placed.
    d. For compaction of surface courses, the weight of equipment shall not be greater than that of equipment used in compaction of the base on which the surface course is placed.
8. For grading or any other type of work, no rollers or other equipment, having an axle load greater than 50,000 pounds or a total weight in excess of 60,000 pounds shall be operated over a culvert, except as may be authorized by the Engineer, and then, in strict compliance with prescribed precautionary measures.

1105.15 PLACEMENT OF FILL MATERIAL IN STREAMS AND WATERBODIES

A. The placement of fill material in streams is regulated by Federal law. The intent of this specification is to require contractor operations in streams and other waterbodies and adjacent swamps, marshes, bogs, or similar areas, to be in compliance with Federal regulations.
B. Fill material shall mean; any material used for the primary purpose of replacing an aquatic area with dry land, or of changing the bottom elevation of a waterbody.
C. Fill material shall consist of clean, suitable, naturally occurring material, free from toxic pollutants in other than trace quantities.
D. Temporary stream crossings shall be bridged or culverted so as not to restrict expected high flows or disrupt the movement of aquatic life native to the stream or waterbodies. Expected high flows are those flows, which the Contractor expects to experience during the period of time that the crossing is in place.
    1. Temporary stream crossings shall:
        a. Not extend over 100 feet into any swampy, bogy, marshy, or similar area that is adjacent to the stream or waterbody.
        b. Be maintained to prevent unnecessary erosion and other nonpoint sources of pollution.
        c. Be removed after they are no longer needed.

1105.16 COST REDUCTION INCENTIVE

A. The Contractor may submit to the Engineer, in writing, proposals for modifying the plans, specifications, or other contract requirements for the sole purpose of reducing the total cost of construction.
    1. The proposals shall not impair, in any manner, essential functions or characteristics of the projects, including but not limited to, service life, economy of operation, ease of maintenance, desired appearance, or design and safety standards.
B. Proposals shall contain the following changes:
    1. Existing requirements and proposed changes,
    2. Contract requirements that must be changed if the proposal is adopted,
    3. A detailed cost estimate of performing the work as stipulated and as proposed,
    4. The time within which the Engineer must make a decision thereon,
    5. The items of work affected by the proposed changes, including any quantity variation attributable thereto.
C. The provisions of this article shall not be construed to require the Engineer to consider any cost reduction proposal which may be submitted hereunder.
    1. Proposed changes in basic design of a bridge or pavement type will not be considered an acceptable proposal.
    2. The Contracting Authority will not be liable to the Contractor for failure to accept, or act upon, any proposal submitted pursuant to this article, or for any delays to the work attributable to any such proposal.
    3. If a proposal is similar to a change in plans or specifications under consideration by the Contracting Authority for the project at the time said proposal is submitted, or if such a proposal is based on, or similar to, standard specifications, special provisions, or plans adopted by the Contracting Authority after the advertisement for the contract, the Engineer will not accept such proposals and the Contracting Authority

reserves the right to make such changes without compensation to the Contractor under provisions of this article.

D. The Contractor shall continue to perform the work in accordance with contract requirements until a change order, incorporating the cost reduction proposal, has been issued. If a change order has not been issued by the date on which the Contractor's cost reduction proposal specifies that a decision thereon should be made, or such other date as the Contractor may subsequently have specified in writing, such proposal shall be deemed rejected.
E. The Engineer shall be the sole judge of the acceptability of a cost reduction proposal and of the estimated net savings in construction costs from adopting all, or any part of, such proposal. In determining the estimated net savings, the right is reserved to disregard the contract bid prices if, in the judgment of the Engineer, such prices do not represent a fair measure of the value of work to be performed or to be deleted.
F. The Contracting Authority reserves the right, where it deems such action appropriate, to require the Contractor to share in the Contracting Authority's costs of investigating a cost reduction proposal. Where such a condition is imposed, the Contractor shall indicate his acceptance thereof in writing, and such acceptance shall constitute full authority to deduct amounts, payable to the Contracting Authority from any money due, or that may become due, to the Contractor under the contract.
G. If the Contractor's cost reduction proposal is accepted in whole or in part, such acceptance will be by change order, which shall specifically state that it is executed pursuant to this article. Such a change order shall incorporate the changes in the plans and specifications which are necessary to permit the proposal, or such part of it as has been accepted, to be put into effect and shall include any conditions upon which the Contracting Authority's approval is based, if the approval is conditional.
    1. The change order shall also set forth the estimated net savings in the cost of performing the work attributable to the proposal effectuated by the change order, and shall further provide that the Contractor be paid 50 percent of said estimated net savings amount.
H. Acceptance of the cost reduction proposal and performance of the work thereunder shall not extend the time of completion of the contract, unless specifically provided for in the change order authorizing use of the proposal.
I. The amount specified to be paid to the Contractor in the change order which effectuates a cost reduction proposal shall constitute full compensation to the Contractor for the proposal and performance of the work thereof pursuant to the said change order.
J. The Contracting Authority expressly reserves the right to adopt a cost reduction proposal, for general use on contracts administered by the Contracting Authority, when it determines that said proposal is suitable for application to other contracts.
    1. When an accepted proposal is adopted for general use, only the contractor who first submitted such proposal will be eligible for compensation pursuant to this article, and in that case, only to those contracts awarded to him/her prior to submission of the accepted proposal and as to which such proposal is also submitted and accepted.
    2. Cost reduction proposals identical or similar to previously submitted proposals will be eligible for consideration and compensation under provisions of this article, if the identical or similar previously submitted proposals were not adopted for general application to other contracts administered by the Contracting Authority.
    3. Subject to the provisions contained herein, the State or any other public agency shall have the right to use all, or any part of any submitted cost reduction proposal without obligation or compensation of any kind to the Contractor.

PART 1106. CONTROL OF MATERIAL

1106.01 QUALITY OF MATERIALS

A. It is the intent of the specifications that first-class materials shall be used throughout the work, and that these first-class materials shall be incorporated in such a manner as to produce completed construction which is acceptable in every detail. Only materials conforming to the requirements of these specifications, approved by the Contracting Authority, shall be incorporated into the work
B. When more than one kind of manufacture of a material is specified, the option will be with the Contractor, but the choice shall be confined to the materials mentioned.

C. Whenever in any of the contract documents, an item of material or equipment is defined by describing a proprietary product or by using the name of a manufacturer or vendor, the terms “or equivalent”, or “or equal”, if not inserted, shall be implied. This specific item of material or equipment mentioned shall be understood as establishing a standard of type, function, efficiency, minimum basis of design, and quality desired. Other manufacturer’s products of comparable quality, design and efficiency, and suitable for the service intended will be considered, but no change will be made without written approval of the Contracting Authority.
D. Requests for materials substitutions must be submitted in duplicate, or in the quantities required elsewhere in the specifications, and meet the requirements of 1103.09

1106.02 SOURCE OF MATERIALS

A. At the option of the Engineer, the source of supply of each material shall be approved by the Contracting Authority before the delivery is stated.
   1. If requested by the Contracting Authority, representative preliminary samples, of prescribed character and quality, tested in accordance with the methods referred to under samples and tests, shall be submitted by the contractor or producer for examination.
   2. All materials proposed to be used may be inspected or tested at anytime during their preparation and use.
   3. If, after trial, it is found that sources of supply which have been approved do not furnish a uniform product or if products from any source do not meet the specifications, at any time, the Contractor shall furnish approved material from other approved sources. No material which, after approval has in any way become unfit for use, shall be used in the work.

1106.03 SAMPLES AND TESTS

A. Each consignment of materials required by the Engineer, shall be tested or inspected before being incorporated into the work and approved by the same Engineer before it is used.
   1. The contractor shall afford facilities for collecting and forwarding samples as the Engineer may require.
   2. Unless otherwise designated in the standard, supplemental specifications, or instructional memorandums, the inspection, sampling, testing, and basis of acceptance of materials shall be in accordance with the current AASHTO “Standard Specifications for Sampling and Testing of Transportation Materials” including published interim standards.

1106.04 STORAGE OF MATERIALS

A. The Contractor shall be responsible for care and storage of materials delivered for the work or purchased for use thereon. Material which has been delivered and has become damaged before actual incorporation in the work may be rejected by the Engineer even though it may have been previously acceptable. Stored materials shall be located to facilitate thorough inspections.

1106.05 UNACCEPTABLE MATERIALS

A. All materials not conforming to requirements of the specifications at the time they are to be used shall be considered unacceptable, and all such materials will be rejected and shall be removed immediately from the work site, unless otherwise instructed by the Engineer. No rejected materials, the defects of which have been corrected, shall be used until approval has been received.

PART 1107. LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

1107.01 LAWS TO BE OBSERVED

A. The Contractor is presumed to be familiar with all laws, ordinances, and regulations that may, in any manner, affect those engaged or employed by the Contractor, the materials or equipment used, or which may in any way, affect the conduct of the Contractor’s work. The Contractor shall conduct his work to avoid conflict with any such laws, ordinances, or regulations, and shall save harmless the Contracting Authority and its representatives against any claim arising from violation thereof.
B. The Contractor shall give preference to Iowa domestic labor, in accordance with the provisions of Chapter 73A of the Code of Iowa, and this provision is hereby specifically made a part of any contract of which these contract documents are a part. A person shall be deemed a domestic laborer of this state if he/she is a citizen and has resided in this state for more than six months.

C. The provisions of Chapter 73A of the Code of Iowa concerning preferences for Iowa products and labor shall not apply to contracts involving work financed wholly, or in part, by the federal government.
D. The Contractor and all subcontractors shall have on file with the Contracting Authority, a valid state of Iowa Contractor's Registration Number, issued by the Iowa Department of Labor Services, in accordance with Chapter 91C of the Code of Iowa.

1107.02 LIABILITY INSURANCE

A. It shall be the Contractor's responsibility to have liability insurance covering all of the construction operations incident to completion of this contract. The Contractor must have on file, with the Contracting Authority, a current "Certificate of Insurance" prior to award of contract. The certificate shall identify the following: insurance company firm name and address, contractor firm names policy period, type of policy, limits of coverage, and scope of work covered, (single project or statewide).
    1. This requirement shall apply with equal forces whether the work is performed by -- (1) persons employed directly by the Contractors (2) by a subcontractor or his employees, or (3) by an independent contractor.
B. In addition to the above, the Contracting Authority shall be included as an insured party, or a separate owner's protective policy shall be filed showing the Contracting Authority as an insured party.
C. The liability insurance shall be written by an insurance company (or companies) qualified to do business in Iowa. For independent contractors engaged solely in the transportation of materials, the minimum coverage provided by such insurance shall not be less than required by Chapter 325A, Code of Iowa, for truck operators or contract carriers as defined therein. For all other contractors, subcontractors, and independent contractors, the minimum coverage by such insurance shall be as follows:

    Public Liability Insurance
    Per person - $500,000.00
    Each occurrence - $750,000.00
    Property Damage Insurance
    Each occurrence - $500,000.00

D. Failure on the part of the Contractor to comply with the requirements of this article will be considered sufficient cause to suspend the work, withhold estimates, and to deny the Contractor from receiving further contract awards, as provided in 1103.01.

1107.03 PATENTS AND ROYALTIES

A. The Contractor shall be responsible for all claims for infringement of patents, or for royalties on tools, machinery, appliances, devices, or materials used in construction and completion of the work, except as are specifically required by the contract documents.
    1. The Contractor agrees that the Department may retain out of the money that is or may become due the Contractor an amount to cover all such claims and to retain the same, until all such claims are paid or adjusted.
B. The Contracting Authority assumes responsibility for payment of claims for damages from patent or copyright infringement or for royalties on material processes, specifications, or types of construction that are required by the contract documents.

1107.04 RESTORATION OF CONSTRUCTION WORK OPENED BY PERMIT

A. Prior to final acceptance, if any repairs to the work constructed hereunder are made necessary by construction or repair of drains or sewers, laying or repairing of pipes or conduits for telegraphy, telephone or electric wires, or from any other disturbance of said work under permission issued by the Contracting Authority, the Contractor shall, upon notification by the Engineer, immediately make necessary repairs in conformity with the specifications.
    1. Such repairs shall be paid for as extra work, however, no compensation will be allowed when such repairs are made necessary by the Contractor's negligence or carelessness.
B. The Contractor shall not authorize any person or persons to make alterations or additions to the construction work unless a permit duly authorized by the Contracting Authority is presented.

1107.05 FEDERAL PARTICIPATION

A. The attention of the Contractor is called to the provisions of the Acts of Congress known as the "Land and Water Conservation Fund Act", the "Federal Aid in Wildlife Restoration Act", the "Federal Aid in Fish Restoration Act", the "Boating Safety Act", the "Superfund Amendments and Reauthorization Act ", the "Clean Water Act" and amendments thereto, and any other acts of congress providing for fish and wildlife of conservation improvements.
   1. When the United States Government is to pay for all or any portion of the cost of an improvement or project, the construction work, although it is under the direct supervision of the Contracting Authority and subject to the laws of the State of Iowa, is also subject to the above-mentioned Acts of Congress and all rules, regulations, and reimbursements that may be imposed by the federal authority thereunder. Such construction work will, therefore, be subject to inspection by the duly authorized agents of the federal government, but such inspections will not make the federal government a party to the contract.

B. On all contracts involving Federal aid, all steel products incorporated into the work must have been manufactured in the United States. The Engineer may allow minimal amounts of these materials from foreign sources, provided the cost does not exceed 0.1 percent of the contract sum or $2,500, whichever is greater.

1107.06 SAFETY, HEALTH, POLLUTION AND SANITATION

A. In the performance of his contract, the Contractor shall comply with all applicable laws, rules, regulations, and ordinances governing safety, health, pollution, sanitation, noise control, and disposal of waste materials, and shall make available such additional safeguards, safety devices, protective equipment, and take such actions as are reasonably necessary to protect life and health of employees and the public.
   1. The Engineer will not act as an enforcement agent for compliance of rules and regulations governing industrial safety. However, violations of properly promulgated laws, rules, regulations, and ordinances reported to the Engineer by responsible agencies may result in the issuance of a suspension order until such time as the violation is corrected.

B. The Contractor shall make adequate provisions satisfactory to the Engineer for safety of inspectors, particularly at sampling locations. Provisions shall include guards for moving belts, pulleys, and wheels near the sampling point and a stable platform to be used when sampling is to be done from an elevated location.

C. There shall be suitable retention dams, in areas where approved liquid asphaltic material, or asphalt cement are stored and used, to minimize pollution of nearby areas from effect of normal rains. The Contractor shall take other necessary precautions to prevent pollution of streams, lakes, ponds, reservoirs, and other areas with fuels, oily bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

D. The disposal by open burning of landscape waste originating on the construction site shall be permitted unless prohibited by local ordinances or regulations. However, the burning of landscape waste produced in clearing, grubbing, and construction operations shall be limited to areas located at least one-fourth mile from any inhabited buildings. Rubber tires will not be used to ignite landscape waste.

E. The Contractor shall be specifically responsible for adhering to all local burning ordinances or regulations, and to ascertain what the local burning restrictions consist of in addition to the regulation stated above and to see that all subcontractors comply with those restrictions.

F. All internal combustion engines, used for any purpose on the job, or related to the job, should be equipped with a muffler of the type recommended by the manufacturer. No internal combustion engine will be operated without a muffler. Faulty or damaged mufflers must be replaced. Machinery must be properly maintained at all times in order to limit engine noise, as well as other extraneous noise.

G. When directed by the Engineer, the Contractor shall apply moisture to the construction area and haul routes, as necessary, to prevent the spread of dust, at no expense to the Contracting Authority.

1107.07 PUBLIC CONVENIENCE AND SAFETY

A. The Contractor shall conduct the work as to assure the least possible obstruction to access by the residents along the project. The Contractor should schedule and conduct the work in such a way as to provide for their safety and convenience.
   1. Work and materials required by the Engineer for public convenience and safety in excess of that provided for in the contract, shall be considered as provided for in 1109.03.

1107.08 BARRICADES AND WARNING SIGNS

A. The Contractor shall take every reasonable precaution to prevent the public from interfering with the work, and to prevent the work from interfering with the public, for providing for safety of the general public traveling to, through, within, along, and across the project, and shall take such precautions, measures, or acts as are required herein and as specifically required by the contract documents or by the Engineer. In addition,the Contractor shall provide such additional safeguards as deemed necessary to protect equipment, the work, and the public at the Contractors own expense.

B. The Contractor shall erect and maintain suitable barriers, and at night, such lights, as will prevent accidents to persons or property in and around the area of work.

C. The Contractor shall provide at his own expense, such security guards as are necessary to protect equipment and to maintain proper lighting. Security guards that may be necessary for the protection of the public shall be provided by the contractor on written order from the Engineer.

D. Whenever the work is under the Contractor's control, the Contractor shall be held responsible for any damage to the newly completed portions of the work resulting from public misuse.

1107.09 USE OF EXPLOSIVES

A. When the use of explosives is necessary for the prosecution of the work, the Contractor shall exercise the utmost care not to endanger life or property. The Contractor shall be responsible for all damage resulting from use of explosives.

B. All explosives shall be stored in a secure manner in compliance with all laws and ordinances and in quantities maintained at a practical minimum. Storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided, satisfactory to the Engineer and, in general, not closer than 1,000 feet from the road or from any building, camping area, or place of human occupancy.

C. The Contractor shall notify each public utility company, having structures in proximity to the site of the work, of the intent to use explosives. Such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury.

1107.10 PROTECTION AND RESTORATION OF PROPERTY

A. The Contractor shall replace or renew fences, sidewalks, or other property damage by reason of the work or the negligence of the Contractors employees. The Contractor shall take suitable precautions to prevent damage to telephone, telegraphy, and electric transmission lines along the highway and to pipes, conduits, and other underground structures. The Contractor shall carefully protect from disturbance all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their locations and shall not remove them until so directed.

   1. The Contractor shall be responsible for damage or injury to property resulting from the prosecution of his work, however, responsibility shall not extend to damage to fences, telephones, telegraph, or electric lines occupying the right-of-way unlawfully, provided due caution has been used in removing them. The Contractor's responsibility shall not be released until the work under the contract is completed and accepted.

1107.12 RESPONSIBILITY FOR DAMAGE CLAIMS

A. The Contractor shall indemnify and save harmless the state of Iowa, the Contracting Authority and other agencies which have concurred in the award of contract, their officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property because of any act, omissions or neglect in safeguarding or performing the work, or through use of unacceptable materials in constructing the work, and so much of the money due the said Contractor, under and by virtue of the contract, as may be considered reasonable and necessary by the Contracting Authority for such purpose, may be retained for the use of the State, or in case no money is due, the surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages, as aforesaid, shall have been settled and suitable evidence to that effect furnished to the Contracting Authority, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence of adequate protection by public liability and property damage insurance.

1. Notwithstanding the above, it is specifically agreed between the parties executing this contract that it is not intended by any of the provisions of any part of the contract documents to create in the public or member thereof a third-party beneficiary hereunder, or to authorize anyone not a party to this contract to maintain a suit for personal injuries or property damage pursuant to the terms of provisions of this contract.
2. The duties, obligations, and responsibilities of the parties to this contract with respect to third-parties shall remain as imposed by law. It being the intention of the parties that indemnity herein provided shall not extend to acts of omission, of negligence for which the Contracting Authority is solely responsible. But indemnity shall extend to all claims in which the Contractor and the Contracting Authority are found to be either jointly or concurrently negligent.

B. Responsibility of the Contractor for providing warning devices, required by 1107.08 to avoid damages or injuries on any portion of the work covered by the contract, shall not cease until the work on such portion has been released by the Engineer.
   1. A release shall be construed to mean a written statement by the Engineer to the effect that the Contractor may cease to maintain barriers and lights, that the work may be opened to the public and that the Contractor is relieved of further maintenance of that portion of the work. Such release shall not constitute an acceptance of the work.

C. The Contractor's responsibility for maintenance of lights on any individual structure shall cease upon final acceptance of such structure, or when specifically released in writing by the Engineer.

1107.13 OPENING OF SECTION OF CONSTRUCTED WORK TO THE PUBLIC

A. When any substantial portion, part, or feature of a contract is completed to the extent that its stability and integrity is not dependent upon completion of the other item, or work required in the contract, that portion, part, or feature may be released by the Engineers after conferring with the Contractor, and opened to traffic or received for public usage prior to final approval and acceptance of all work involved in the contract.
   1. The Contractor will not be responsible for damages due to the elements or the ordinary use of the public to those portions, parts, or features of the work which have been released by the Engineer.
   2. The Contractor will be responsible for any damages which may be caused by defective work or failure to comply with the contract documents.

B. The above provisions relating to a release by the Engineer will be applicable only to those portions, parts, or features of the contract for which the Engineer has furnished to the Contractor a written release.

1107.14 CONTRACTOR'S RESPONSIBILITY FOR WORK

A. The Contractor shall be responsible for the care and maintenance of partially completed and furnished work on any portion of the project until released by the Engineer from such responsibility. It will be the Contractor's responsibility to adjust the Contractor's operation or method of operation to prevent any damage of any nature to any portion of the partially completed or completed work. Repair work shall be done promptly upon being so ordered by the Engineer.

1107.15 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

A. At points where the Contractor's operations are adjacent to properties of railway, telegraph, telephone, and power companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

B. The Contractor shall cooperate with owners of underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

C. In the event of interruption to water or utility services, as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with said authority in restoration of service.
   1. If water service is interrupted, repair work shall be continuous until service is restored.
   2. No work shall be undertaken around fire hydrants until provision for continued service has been approved by the local fire authority.

1107.16 PERSONAL LIABILITY OF PUBLIC OFFICIALS

A. In carrying out any of the provisions of the contract, or in exercising any power or authority granted to any agency or representative of the Contracting Authority thereby, there shall be no liability upon such agent or representatives including the Engineer or authorized agents, either personally or as an official of the Contracting Authority, it being understood that in such matters the agent acts as the agency and representative of the Contracting Authority.

1107.17 NO WAIVER OF LEGAL RIGHTS

A. The Contracting Authority shall not be precluded or stopped by any measurement, estimate, or certificate made, either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing that any such measurement, estimate, or certificate is untrue or incorrectly made, or that the work or materials do not, in fact, conform to the contract.

B. The Contracting Authority shall not be precluded or stopped, notwithstanding any such measurement, estimate, or certificate, and payment in accordance therewith, from recovering from the Contractor and the Contractor's sureties such damages as it may sustain by reason of the Contractor's failure to comply with the terms of his contract.

C. Neither acceptance by the Contracting Authority, or any representative of the Contracting Authority, nor any payment for or acceptance of the whole or part of the work, nor any extension of time, nor any possession taken by the Contracting Authority, shall operate as a waiver of any portion of the contract, or for any power herein reserved, or any right to damages herein provided. A waiver of any breach of contract shall not be held to be a waiver of any other or subsequent breach.

PART 1108. PROSECUTION OF PROGRESS

1108.01 SUBLETTING OF CONTRACT

A. At the time specified by the contract documents or when requested by the Engineer, the Contractor shall submit in writing to the Contracting Authority for approval, the names of the subcontractors proposed for the work. Subcontractors may not be changed except at the request of and with the approval of the Contracting Authority.
   1. The Contractor is responsible to the Contracting Authority for the acts and omissions of the subcontractors, and of their direct and indirect employees, to the same extent as the Contractor is responsible for the acts and omissions of its own employees.
   2. The contract documents shall not be construed as creating any contractual relation between the subcontractor and the Contracting Authority.

B. The Contractor shall bind every subcontractor and every subcontractor agrees to be bound by the terms of the contract, the contract documents, the plans, the general conditions of the contract, the supplementary general conditions, the special conditions, and the specifications as far as applicable to the subcontractors' work.

C. The subcontractor shall be bound to the Contractor by the terms of the contract, the contract documents, the plans, the general conditions and specifications, and to assume toward the Contractor all the obligations and responsibilities that the Contractor, by those documents, assumes towards the Contracting Authority.
   1. The Contractor agrees to be bound to the subcontractor by all the same obligations that the Contracting Authority assumes to the Contractor under the terms of said documents, and by all the provisions thereof affording remedies and redress to the Contractor from the Contracting Authority.

D. The Contractor shall not assign, sublet, or transfer in whole or part any of the work herein specified without the written consent of the Contracting Authority. Any such assignment, subletting, or transfer shall not in any manner relieve the Contractor from any of the responsibilities assumed herein.

E. For convenience of reference and to facilitate the letting of contracts and subcontracts, the specifications are separated into title sections. Such separations shall not, however, operate to make the Engineer an arbitrator to establish limits to the contracts between Contractor and subcontractors.

F. This article shall further be applicable to contracts involving Federal-aid participation in construction insofar as they are consistent with the required provisions for Federal-aid contracts attached to the contracts, and shall be additional specifications insofar as they cover matters not covered by the required provisions for Federal-aid contracts.

1108.02 PROSECUTION OF WORK

A. The proposal form may designate the contract period by either completion date, approximate starting date, of specified starting date.

B. Intermediate contract periods may be designated for completion of certain portions of the contract. The contract period for each portion and the liquidated damages, if any, will be listed in the Special Provisions.

C. The return of the signed and executed contract to the Contractor shall serve as notice to the Contractor that the contract bond is acceptable, that the contract is in force, and that the Contractor may complete arrangements for materials and other work in accordance with the contract documents.

D. Should delay become apparent before or after the work is started, the Engineer will immediately notify the Contractor, in writing, that work on the contract will be delayed and, if possible, the approximate duration of such delay. For delays exceeding 2 weeks, new construction dates may be established by the Engineer after consulting with the Contractor.

1. Specified Starting Date: When a starting date is specified, working days will be charged to the Contractor starting on the specified starting date or 10 days after execution of the contract, whichever is later. Starting work prior to the specified date will be considered upon request, and working days will be charged when work starts.
2. Approximate Starting Date:
    a. Site available immediately, as determined by the Engineer: Anytime after execution of the contract and on or after the approximate starting date, the Contractor may work, weather and specifications permitting. Working days will be charged any time the Contractor is working on/or after the approximate starting date. Starting work prior to the approximate starting date will be considered upon request. If allowed, working days will be charged.
    b. Site Availability Date Unknown, as determined by the Engineer: It is expected the site will be available by the approximate starting date. If it appears the site will not be available by the approximate starting date, the Engineer will inform the Contractor of the delay and if possible the duration of the delay. The Contractor may commence work, weather and specifications permitting, any time after execution of the contract and on or after the approximate starting date provided the site has become available. If work is started under these conditions, working days will be charged. Starting work before the approximate starting date and before the site is available, will be considered only after the Contractor has submitted a signed waiver of any right to claim extra compensation for damages due to delays from any cause related to the early commencement. If approved, working days will not be charged when working prior to the date of site availability. If the Contractor is working on the project when the site becomes available, working days will be first charged on the following day.
3. Specified Completion Date: The Contractor may commence work any time after execution of the contract, weather and specifications permitting.
    a. Working days will begin to be charged whenever the Contractor starts work.
4. Winter Work: The proposal may require winter work on all or portions of the project, and working days will be counted as indicated therein. When not so specified, the Contractor may work, unless advised to the contrary be the Engineers between November 15 and April 1 with no working time charged. If the best interest of the Contracting Authority so dictates, the Engineer may require the Contractor to continue work after November 15.
    a. Working days will not be charged if working time remains on November 15, and working days may be charged for days worked if no working time remains on November 15.
5. Notice to Proceed: A notice to proceed will be issued when, in the opinion of the Engineer, considering the approximate starting date, site availability, and working days allowed, failure of the Contractor to commence work places the timely completion of the project in jeopardy. The starting date in the notice to proceed will not be less than 15 calendar days after the date of the issuance of the notice. Working days will be charged beginning with the starting date established by the notice or when the Contractor starts work if prior thereto. A notice to proceed will be issued, except:
    a. It will be assumed when a specified starting date is used.

b. It will be assumed when a specified completion date is used, the number of working days allowed will be counted back from the specified completion date, exclusive of Saturdays, Sundays, and holidays, to determine the first day working days will be charged.
c. It may be included as an agreed starting date at a preconstruction conference for projects with an approximate starting date.
d. It will be assumed when the Contractor is working at the time for issuance of the notice.
e. It will be assumed, if an early work waiver is approved, as having been issued at the time of site availability, as documented in the project records.

6. Weekly Report of Working Days: Whenever the Contractor is subject to being charged with working days, the Engineer will furnish the Contractor a weekly statement indicating the working days to be charged against the Contractor for that period. Should the Contractor believe the statement to be inaccurate, a statement should be submitted to the Engineer, in writing, stating the objection and reasons, within 10 calendar days after receipt of the statement. If the Contractor fails to submit an objection within that time, the original statement may be considered as accurate and final.
7. Work Progress: The progress of the work shall be at a rate sufficient to complete the contract within the time allowed. If it appears that the rate of progress is such that the contract will not be completed within the time allowed, or if the work is not being executed in a satisfactory and workmanlike manner, the Engineer may order the Contractor to take such steps as necessary to complete the contract within the period of time specified or to prosecute the work in a satisfactory manner.
   a. If the Contractor fails to comply with such order within 2 weeks after receipt of the order, the Contractor may be disqualified from receiving any additional bidding proposals, and the Contracting Authority shall have the right to declare the contract in default and to complete the work in accordance with 1108.11.
   b. Failure of the Contracting Authority to issue such order shall not alter the Contractor's responsibility under the contract.
   c. The Contractor's sequence of operations shall be such as to cause as little inconvenience to the general public as possible.
8. Schedule of Staging: On any project, or part of a project, on an existing road where the work may prohibit or restrict public or private access that has been previously available, the Contractor may be required to submit a schedule of staging for the Engineer's approval before work is started.
   a. Preliminary work may be required in stage construction, even though the work involved in these operations is similar, in order to minimize the inconvenience to the public and those to whom access has been previously available. This requirement will apply equally to work that is subcontracted.
9. Accelerated Work Schedule: An accelerated work schedule may be required by a note on the proposal. When required, the Contractor shall marshal the necessary forces, including but not limited to: extra crews, subcontractors, extra work hours, or other acceptable methods to insure completion of the projects or various stages of the projects within the contract period and in compliance with the specifications.
   a. A work plan shall be submitted to the Engineer for review prior to commencement of work. Work will be permitted on a 24-hour-day basis and on Sundays and holidays when traffic interference exists, though work may be restricted during peak traffic periods. No credit will be allowed for delayed or slow delivery of materials. The special provisions may include other requirements or modifications for the accelerated work schedule.
10. Preconstruction Conference: The Engineer shall schedule and conduct a preconstruction conference. The Contractor and intended subcontractors shall participate in this conference. The Engineer will invite utilities and others having responsibilities or interest in the work.

1108.03 LIMITATIONS OF OPERATIONS

A. The Contractor shall conduct the work so as to create a minimum amount of inconvenience to the public. At anytime, when in the judgment of the Engineer, the Contractor has obstructed, closed, or is conducting his/her operations on a greater portion of the project vicinity than is necessary for the proper prosecution of the work, the Engineer may require the Contractor to finish the section on which work is in progress before work is started on any additional sections.

B. Whenever work which is being done by other contractors or subcontractors is contiguous to, or a part of the work included in this contract, the Engineer shall in case of dispute, determine and define the respective rights of the various interests involved, in order to secure the completion of all parts of the work in general harmony and with satisfactory results.
C. Except when an accelerated work schedule is required, no work will be permitted on Sundays, holidays observed by the Department of Natural Resources or within the time frame of dusk until dawn (as observed by current Farmer's Almanac) unless explicit permission from the Engineer has been obtained.
    1. The Contractor should request a determination of the holidays to be observed at the beginning of each calendar year.

1108.04 METHODS AND EQUIPMENT

A. The methods, equipment, and appliances used shall produce a satisfactory quality of work and shall be adequate to maintain the schedule of progress specified. Equipment used on any portion of the project shall be such and its use so regulated that no serious or irreparable damage to the adjacent property, or highways will result from its use. If damage does occur to the highways suitable repairs shall be made.
B. When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the contract, the Contractor is free do use any methods or equipment that will accomplish the contract work in conformity with the requirements of the contract, as demonstrated to the satisfaction of the Engineer.
C. When the contract specifies that the construction be performed by use of certain methods and equipment, such methods and equipment shall be used, unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than specified in the contract, he/she may request approval from the Engineer to do so.
    1. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with contract requirements.
    2. If after trial use of the substituted methods or equipment the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue use of the substitute method or equipment and shall complete the remaining construction with the specified method and equipment.
    3. The Contractor shall remove the defective work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved or in contract time as a result of authorizing a change in methods or equipment under these provisions.

1108.05 CHARACTER OF WORKERS

A. Any employee of the Contractor who is careless, incompetent, or disorderly, or who refuses or neglects to perform work in accordance with the specifications, or who shall commit trespass upon any public or private property in the vicinity of the work, shall be discharged upon the written request of the Engineer and shall not be reemployed on any of the work unless written permission is given by the Engineer.

1108.06 TEMPORARY SUSPENSION OF WORK

A. Work shall be suspended, wholly or in part when, in the opinion of the Engineer, weather or other conditions are unfavorable to its satisfactory prosecution.
    1. Work shall also be suspended at the direction of the Engineer pending settlement of disputes arising of failure of the Contractor to comply with provisions of the contract. Written notice of suspension of work shall be given by the Engineer.
    2. When the conditions causing suspension no longer exists, written notice to resume work will be given to the Contractor by the Engineer. Promptly after such written notices, the Contractor shall resume prosecution of the work as provided in 1106.02.
B. The start of work may be delayed or work may be suspended upon request of the Contractor and with approval of the Engineer. The Engineer may require the request to be in writing and also may require the Contractor to include with the request a schedule for satisfactory completion of the work.

1108.07 EXTENSION OF CONTRACT PERIOD

A. An extension of the contract period will be granted by the Engineer for additional work requiring additional construction time and may result from a modification of the plans or extra work.
   1. If any delay is caused by active interference by the Contracting Authority, the Contracting Authority will grant such an extension of time for completion of the contract as will, in the opinion of the Engineer, compensate for such delay. An extension of the contract period will be granted by the Contracting Authority for:
      a. Additional work resulting from a modification of the plans for the project, or
      b. Other reasons beyond the control of the Contractor which, in the Contracting Authority's judgment would justify such extension.

B. All claims for extension of the contract period shall be made in writing to the Engineer no more than thirty days after the occurrence of the delays otherwise they shall be waived. In the case of continuing cause of delays only one claim is necessary.

1108.08 LIQUIDATED DAMAGES

A. Time is an essential element of the contract and it is important that the work be pressed vigorously to completion.

B. For each calendar day that any work shall remain uncompleted after the end of the contract period, number of working days allowed, or any extension granted under 1108.07, the amount per calendar day specified in the proposal form will be assessed, not as a penalty, but as predetermined and agreed liquidated damages.
   1. The Contracting Authority will prepare and forward to the Contractor an invoice for such liquidated damages.
   2. The final payment will be withheld until payment shall have been made on this invoice.

C. Assessment of liquidated damages will be based only on the number of working days required to complete the work in excess of the specified working days allowed, plus authorized extensions thereto.

D. This provision for the assessment of liquidated damages for failure to complete work within the contract period does not constitute a waiver of the Contracting Authority's right to collect any additional damages other than time delays which the Contracting Authority may sustain by failure of the Contractor to carry out the terms of the contract.

1108.09 FAILURE TO COMPLETE WORK WITHIN CONTRACT PERIOD

A. If the Contractor fails to complete his work within the contract periods or any extension thereof, as provided in 1108.07, upon written notice to the Contractor and surety, said contract shall be in default. The Contracting Authority may, at its option, permit the Contractor or the Contractor's surety to complete the work included in the contracts or may proceed to complete the work in accordance with 1106.11. In either event, the Contractor or the Contractor's surety shall be responsible for all cost's incident to the completion of the work, and also for the liquidated damages stipulated in the proposal form. The Contracting Authority may waive such portion of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the public.

1108.10 CONTRACTS IN DEFAULT

A. The Contracting Authority may declare a contract in default for any one of the following reasons:
   1. Failure to complete the work within the contract period or any extension thereof,
   2. Failure or refusal to comply with an order of the Engineer within a reasonable time,
   3. Failure or refusal to remove rejected materials,
   4. Failure or refusal to correct any defective or unacceptable work,
   5. Bankruptcy or insolvency, or the making of an assignment for the benefit of creditors,
   6. Failure to carry on the work in an acceptable manner.

1108.11 COMPLETION OF CONTRACTS IN DEFAULT

A. If for any reason a contract is declared in default, the Contracting Authority shall have the right, without process or action at law, to take over all or any portion of the work and complete it, at its option, either by day labor or by reletting the work.

1. Written notice shall be given the Contractor by the Contracting Authority that the contract has been declared in default, and upon receiving such notices the Contractor shall peaceably relinquish possession of the said work or the parts thereof specified in the notice.

B. The Contracting Authority may, at its option and, at a rental which it considers reasonable, retain all material, equipment, and tools on the work until the work has been completed.

C. Neither the Contracting Authority nor any member or employee thereof shall be in any way liable or accountable to the Contractor or the Contractor's surety for the method by which the completion of said work, or any portion thereof, may be accomplished, or for the price paid therefor.
   1. Should the cost of completing work be in excess of the original contract prices the Contractor and the Contractor's surety shall be held responsible for such excess cost.
   2. Should the cost of such completion, including all proper charges, be less than the original contract price, the amount so saved shall be paid to the Contractor.
   3. Neither by taking over the work nor by declaring the contract in default shall the Contracting Authority forfeit the right to recover damages from the Contractor or the Contractor's surety for failure to complete the entire contract.

1108.12 REMOVAL OF EQUIPMENT

A. In the case of cancellation of this contract before completion from any cause whatsoever, the Contractor, if notified to do so by the Contracting Authority, shall promptly remove any part or all of his equipment and supplies from the property of the Contracting Authority. In the event of failure of the Contractor to remove such equipment and supplies within thirty days after the issuance of the notification for removal, the Contracting Authority shall have the right to remove such equipment and supplies at the expense of the Contractor.

1108.13 ORDER OF COMPLETION AND USE OF COMPLETED PORTIONS OF THE WORK

A. The Contractor shall complete any portion or portions of the work in such order of time as the Engineer may require. The Contracting Authority shall have the right to take possession of, and use any completed or partially completed portion of the work at anytime, but such taking possession and use shall not be deemed as acceptance of the work so taken or used or any part thereof. If such prior use increases the cost or delays the work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as determined by the Engineer.

1108.14 METHOD OF SERVING NOTICES

A. Any notice to be given by the Contracting Authority to the Contractor under this contract shall be deemed to be served if delivered to any office used by the Contractor, or foreman, or agent, at or near the work, or deposited in the post office, postpaid, addressed to the Contractor at the last known place of business.

1108.15 TERMINATION OF CONTRACTOR'S RESPONSIBILITY

A. The contract shall be considered completed when the work has been accepted in writing by the Contracting Authority.
   1. Such acceptance shall release the Contractor from all further obligation with respect thereto, except as to conditions and requirements set forth in the performance bond, and if, within one year after the final acceptance or a longer period of time, as may be prescribed by law or by the terms of any applicable guarantee required by the contract documents, any of the work is found to be defective or not in accordance with the contract documents, the Contractor shall correct it promptly after receipt of a written notice from the Contracting Authority to do so unless the Contracting Authority has previously given the Contractor a written acceptance of such conditions specifically starting the condition that is accepted.
   2. The Contracting Authority shall give such notice promptly after discovery of the condition. All such defective or non-comforming work shall be removed from the site if necessary, and the work shall be corrected to comply with the contract documents without cost to the Contracting Authority.

B. The Contractor shall bear the cost of making good, all work destroyed or damaged by such removal or correction of separate contractors.

PART 1109. MEASUREMENT AND PAYMENT

1109.01 MEASUREMENT OF QUANTITIES

A. The work completed under the contract shall be measured according to United States standard measures. Payment will be based on the actual quantity of work performed under the various work classifications in the contract, unless otherwise provided below, or by the method of measurement for the various classes of work.
B. By written agreement between the Contractor and the Engineer, final settlement may be made on the basis of contract quantities without final field measurements. Such an agreement may be made before work is started or after work has been completed, if no material deviation from the original plans is involved.
    1. Except for those items for which quantities cannot be accurately predetermined0, the contract quantities have been accurately and properly estimated, but adjustments will be made for obvious errors or authorized changes.
    2. The Engineer shall exercise such controls and make such measurements, as are necessary, to assure that each item of work is done in substantial compliance with the contract documents. The use of this agreement for payment shall not be considered as a change in the contract.

1109.02 SCOPE OF PAYMENT

A. The Contractor shall accept the compensation herein provided as full payment for furnishing all materials labor, tools, and equipment for performing all work under the contract or any extension thereof allowed under 1108.07, also, for all costs arising from the action of the elements or other natural causes, agreements, and performance, nonperformance, or delays involving other contractors and third parties, or injunctions or lawsuits resulting therefrom, or from any unforeseen difficulties not otherwise provided for in the specifications and which may be encountered during prosecution of the work and up to the time of acceptance thereof, except damage to the work due to acts of war. Nothing herein shall in itself be construed to prejudice or deny any claim filed under provisions 1109.12.
B. The contract price for any item shall be full compensation for acceptable work and for materials, equipment, tools, and labor for performance of all work necessary to complete the item in accordance with the plans and specifications, except as specifically exempt in the clauses covering the basis of payment for the item.

1109.03 ADJUSTMENT IN CONTRACT PRICE

A. When the measured quantity of any item varies by more than 20% from the estimated quantity specified in the contracts an adjustment in price may be made for such item of work, and the adjustment will be made on the full variance from the contract quantity. Such adjustment may be requested by either party to the Contract.
    1. If the contract sum for an item is less than five thousand ($5,000.00) dollars, the price of that item will not be subject to adjustment.
B. If the increase or decrease in quantity is due to an alteration in plans, any price adjustment shall be requested and agreed upon before the work is done. If the increase or decrease in quantity is not the result of an alteration in plans, but results from errors in original estimates, or unforeseen conditions, price adjustments may be requested after the work is completed.
C. In making price adjustments, consideration shall be given to the portion of the cost of the work that can be classified as fixed costs, independent of the exact quantity of work performed, such as transportation and installation costs on equipment, overhead costs, etc. Any price adjustment shall be arrived from the standpoint that neither party to the contract shall be penalized by the increase or decrease in quantities which occasioned the price adjustment.
D. If changes or alterations, as outlined in 1105.04, result in a substantial increase or decrease in cost or difficulty of the work, appropriate modifications will be made in the contract by extra work order, regardless of the quantity.
E. All price adjustments shall be agreed to by the Engineer and the Contractor and shall be subject to the approval of the Contracting Authority.

1109.04 PAYMENT FOR WORK PERFORMED

A. All contract price adjustments approved by the Engineer shall be subject to the concurrence of the Contracting Authority.
B. The Contractor will receive and accept payment for work performed under his contract as follows:

1. Items or Work Performed Which Are Covered by Definite Prices Stipulated in the Contract: For all items of acceptable work performed which are covered by definite unit prices or lump-sum amounts specified in the contract, the Contractor shall receive and accept compensation at the rate specified in the contract, except as provided in 1109.03 and for items identified as that of "significant change" as provided in 1109.17.
2. Extra Work: Extra work ordered by the Engineer, of a quality or class not covered by the contract, will be paid for, either at an agreed price or on a force-account basis.
3. Agreed-Price Basis: For extra work ordered by the Engineer and performed on an agreed-price basis, the Engineer and the Contractor shall enter into a written agreement before such work is undertaken. This written agreement shall describe the extra work that is to be done and shall specify the agreed price or prices.
4. Force-Account Basis: Extra work performed on a force-account basis will be paid for in the following manner:
    a. For laborers, timekeepers, foremen, and superintendents, the Contractor shall receive the rate of wage shown on previous payrolls for the time they are actually engaged in the extra work, to which shall be added an amount negotiated up to 15% thereof, plus the amount of social security tax imposed by law upon the Contractor because of such force-account work, plus the cost of worker's compensation, public liability insurance, and employment security contributions. The percentage shall cover compensation for furnishing of necessary small tools for the work together with all other overhead expense items.
    b. The wage of the superintendent, timekeeper, or foreman who is employed partly on force-account work and partly on other work shall be prorated between the two classes of work according to the number of persons shown by the payroll, as employed on each class of work.
    c. For materials used on force-account work, the Contractor shall receive the actual cost of materials delivered on the work, including the freight and handling charges as shown by original receipted bills, to which cost shall be added an amount negotiated to 15% thereof.
    d. For machinery, tools, or equipment, fuel and lubricants therefor, except small hand tools which may be used, the Engineer shall allow the Contractor a reasonable rental rate to be agreed upon in writing before such work is begun. No profit percentage shall be added to the rate.
    e. Compensation, as herein provided, shall be accepted by the Contractor as payment in full for extra work done on a force-account basis. It will be assumed that such payment includes the use of tools and equipment for which no rate is allowed, overheads and profit.
    f. At the end of each day, the Contractor shall prepare payrolls in duplicate for labor furnished on a force-account basis, using the Contracting Authority's standard force-account forms. Both copies shall be signed by the inspector and Contractor's representative. One copy shall be furnished to the Engineer and one to the contractor.
    g. Claims for extra work performed on a force-account basis shall be submitted to the Engineer in triplicate. To the claims shall be attached such receipt or statements as the Engineer may require in support of such claims. Such claims shall be filed not later than the tenth day of the month following that in which the work was actually performed, and shall include all labor charges, rental charges on machinery, tools, and equipment, and all material charges insofar as they are available.
5. Deficient Work: Payment for work judged by the Engineer to be deficient work shall be made at the reduced rate specified in the contract documents or, if no such rate is specified, at a modification of the contract prices as determined by the Engineer.

1109.05 CANCELLED WORK

A. The Contracting Authority shall have the right to cancel any or all items from the contract when unforeseen circumstances, failure to secure permits, approvals, loss of funding, unanticipated design changes, or other reasons beyond the control of the Contractor prevent or unreasonably delay completion of the contract, or of certain items of the contract, or when the Contracting Authority determines that cancellation is in the public or national interest.

B. The Contractor may be prevented from starting work on a contract, or an identified phase of a contract, as a result of a delay caused by the Contracting Authority or others.

C. When the contract period is defined by approximate starting date and the delay prevents the Contractor's starting work on the contract or an identified phase of the contract for 30 days beyond the date which, by notice to the Engineer, the Contractor proposed to start work, the Contractor may request cancellation by written notice to the Engineer stating the reasons.
D. In either case, within 30 days from the date of the request, the Engineer will eliminate or minimize, if possible, the cause for the delay and issue a notice to proceed, redefine the basis on which the work is to proceed, or cancel the contract or phase of the contract.
E. The Contractor shall not use delays that occur prior to starting work or an identified phase of the work as a basis of a claim against the Contracting Authority except for an extension of contract period.
F. Notices described in this article should be transmitted by certified mail.
G. For finished portions of items canceled, the Contractor will be paid at the contract unit prices, in accordance with the provisions of 1109.04. For finished portions of major items canceled, the Contractor will be paid as provided in 1109.17. For all items, materials ordered and delivered for the unfinished portion of such canceled, or omitted items, the Contracting Authority will pay cost plus 10% as an overhead charge. The Contractor's expense for work of handling or transporting such material shall be included in computing the cost.
H. The Contracting Authority will also pay any actual expenses sustained by the Contractor by reason of such cancellation or omission and not represented by work completed or material delivered. In computation of material cost or expenses sustained, no anticipated profit will be included.
    1. Material paid for shall become the property of the Contracting Authority and shall be disposed of as directed by the Engineer.

1109.06 PARTIAL PAYMENTS

A. If the work extends over a period of more than one month, the Engineer may, upon request from the Contractor, prepare monthly estimates based on the amount of work completed in an acceptable manner.
    1. On contracts for which the contract sum is $10,000.00 or more, monthly estimates may be allowed, based on 90% of invoiced value of processed or fabricated materials which have been delivered on the project site, provided the materials are of acceptable quality and the manner of storage is satisfactory to the Engineer.
    2. The Engineer's monthly estimates shall be partial payments on the contract, and the allowance of a monthly estimate by the Contracting Authority does not constitute final acceptance of the work upon which the estimates are based. Each estimate shall be filed by the Contractor in the form of a claim against the Contracting Authority and certified to by the Engineer on a payment request form supplied by the Contracting Authority.
B. Three percent (3%) of each progress estimate shall be deducted and held as a suspended payment. Payments may be made on the remainder of the progress estimate, except under circumstances which would prejudice the rights of those who have filed claims pursuant to Chapter 573, Code of Iowa.
    1. The retained percentage will not be due and payable for a period of at least 30 days after the date of final acceptance of the entire contract or following the release or adjudication of claims that may have been filed, or until the Contractor has filed the sworn final estimate and sales and use tax statement with the Contracting Authority.
    2. Should a reasonable doubt arise as to the integrity of any part of the completed work, the estimate for that portion shall not be allowed until the cause for such doubt has been removed.
    3. The progress estimates and payments are approximate only, and shall be subject to correction in the final estimate and payment.
C. Failure to make partial payment within 30 days after receipt and approval of the monthly estimate by the Engineer, will cause interest to accrue and additional payment therefor to be made in accordance with provisions of Chapter 573, Code of Iowa, subject to limitations included therein.

1109.07 SUPPLEMENTAL CONTRACT FOR WORK INTERRUPTED

A. After ninety-five (95%) of the work has been performed to the satisfaction of the Contracting Authority, including consideration of the contract period, and it is apparent that conditions beyond the control of the Contractor will delay the completion of the contract for more than 60 days, the Contractor may request a supplemental contract for the uncompleted portion of work on the same terms as those of the original contract.

1. If the Contracting Authority agrees, and the surety for the Contractors consents to the extension of the bond for the time required to complete the supplemental contract, the supplemental contact will be issued. After the contract has been entered into, full payment will be made for the work completed, except under circumstances which would prejudice the rights of those who have filed claims pursuant to Chapter 573, Code of Iowa.

B. The unpaid money, held by the Contracting Authority as a retainer of the original contract price, will be due and payable to the Contractor 30 days after the date of the Contracting Authority's approval of the supplemental contract, except as provided for the release and adjudication of claims in 1109.06.

1109.08 CERTIFIED STATEMENT OF SALES TAX AND USE TAX PAID

A. Unless the Contracting Authority has issue an authorization letter and a Sales Tax Exemption Certificate for this project, before final payment can be made on a contract, the Contractor and subcontractors shall file a certified statement on forms provided by the Contracting Authority, showing the amount of Iowa sales tax and use tax paid by them on all materials which have become a component part of the finished, completed contract and on such supplies for this construction as were actually consumed on this work.

B. These statements shall be submitted in duplicate to the Contracting Authority at the completion of the contract.

1109.09 ASSIGNMENT OF MONIES

A. The Contractor shall not assign, by power of attorney or otherwise, any of the monies to become due and payable under this agreement unless the Contractor has received written consent of the Contracting Authority.

1109.10 SUBMITTALS REQUIRED BEFORE FINAL PAYMENT

A. Before final payment can be made on this contract, the Contractor shall submit to the Engineer the following:
   1. A request for prefinal and final payment.
   2. One copy of any guarantees for products incorporated into the work.
   3. Two copies of the operating instructions on each piece of equipment incorporated into the work.
   4. Statements of Sales Tax from the Contractor and subcontractors, unless in receipt of an authorization letter and a Sales tax Exemption Certificate issued by the Contracting Authority for this project.

1109.11 FINAL ACCEPTANCE AND PAYMENT

A. Final acceptance is stipulated to mean a written acceptance by the Contracting Authority. The Contracting Authority shall make final acceptance promptly upon the satisfactory completion of the work. Final payment shall be made as soon as possible following the expiration of statutory time for filing claims, or following adjudication or release of claims against the amount withheld.

B. Failure to make final payment within 70 days after completion of the work, and if all requirements of the contract are completed, will cause interest to accrue and additional payment therefor to be made in accordance with provisions of Chapter 573, Code of Iowa, subject to limitations included therein, however, this provision shall not apply when final payment includes a supplemental contract for work interrupted, as provided for in 1109.07.

C. Completion of the work will be considered as the date of approval and work acceptance by the Contracting Authority. When interest is to be paid, the date from which interest is to be calculated will be the thirty-first day after all required materials, certifications, and other documentation required to be submitted by the Contractor are received by the Engineer, however, the Contractor will be paid no interest if final payment is made within 70 days from the date of approval and work acceptance. The signed final payment request is not required documentation, but if not returned to the Engineer within 30 days, it will be considered required documentation.

D. Signing of the final payment request or acceptance of payment based thereon, shall not waive any rights of either party in the resolution of any claim filed in accordance with 1109.12.

E. The Contracting Authority shall satisfy itself as to the faithful completion of each part of the work, and may reject any portion found to be inconsistent with the terms of the contract.

1109.12 DISPUTED CLAIMS FOR EXTRA COMPENSATION

A. In any case where the Contractor deems that extra compensation is due for work or material not clearly covered in the contract and not ordered by the Engineer as extra work as defined herein, the Contractor shall notify the Engineer in writing of the intention to make a claim for extra compensation before beginning the work on which the claim is based.
B. The Contracting Authority shall be responsible for damages attributable to the performance, nonperformance, or delay of any other contractor, governmental agency, utility, firm, corporation, or individual authorized to do work on the project, only when such damage is a result from negligence on the part of the Contracting Authority, Engineer, or any of its officers or employees.
    1. In any case where the Contractor deems that extra compensation is due from the Contracting Authority as damages resulting from such performances, nonperformances, or delays, the Contractor shall notify the Engineer in writing at the time the delay occurs.
C. In either case if such notification is not given, or if after such notification is given, the Engineer is not afforded facilities for keeping strict account of actual cost, as defined for force-account construction, the Contractor thereby agrees to waive the claim for extra compensation for such work. Such notice by the Contractors and the fact that the Engineer has kept account of the cost as aforesaid, shall not be construed as establishing the validity of the claim.
    1. The claims, when filed, shall be in writing and in sufficient detail to permit auditing and evaluation by the Contracting Authority. Claims shall be supported by such documentary evidence as the claimant has available and shall be verified by affidavit of the claimant or other persons having knowledge of the facts.
    2. In the event the claimant wishes an opportunity to present the claim in person, then the claim shall be accompanied by a written request to do so.
    3. Where the claimant asks an opportunity to present the claim in person, the Contracting Authority, within a reasonable period of time after the filing of the claim, shall fix a time and place for a meeting between the claimant and the Contracting Authority or its designated representatives.
        a. The Contracting Authority shall, within a reasonable time from filing of the claim or the meeting above referred to, whichever is later, rule upon the validity of the claim and notify the claimant in writing, of its ruling together with the reasons therefor. In case the claim is found to be just, in whole or in part, it shall be allowed and paid to the extent so found.
D. The Contractor shall not institute any court action against the Contracting Authority for the adjudication of any claims until such claim has first been presented to Contracting Authority pursuant to this article and submitted to arbitration or a request for arbitration is denied pursuant to 1109.13.

1109.13 ARBITRATION

A. If a Contractor's claim, as outlined in 1109.12, has been disallowed, in whole or in part, then the Contractor may, within 30 days from the date of the ruling of the Engineer is mailed to the Contractor, make a written request to the Engineer that the claim or claims be submitted to a board of arbitration.
    1. The Engineer shall decide whether the matter is one which is subject to arbitration and shall, within 30 days of the receipt of the request for arbitration, grant or deny the request.
    2. The Engineer's decisions shall be final.
B. Said board of arbitration shall consist of three persons, one to be chosen by the Engineer, one by the Contractor, and the third by the two arbitrators.
C. The arbitrators selected shall be persons experienced and familiar with construction or engineering practices in the general type of work involved in the contract, but shall not have been a regular employee or an individual retained by either party at the time involved in the controversy, or at the time of arbitration.
D. The board of arbitration shall make its own rules of procedure and shall have authority to examine records kept by the Engineer and the Contractor.
    1. If the desired records are not produced within 10 days after they are requested, the board of arbitration shall proceed without them as best it may.
    2. In determining the findings, or awards, or both, the majority vote of the board shall govern. Copies of the findings or awards or both, signed by the arbitrators shall be filed with the Engineer and the Contractor.
    3. A majority report or minority report may be filed. The board of arbitration shall fix the cost of the proceedings, including a reasonable compensation to the arbitrators, and shall determine how the total cost shall be borne.

E. The board of arbitration shall have jurisdiction to pass upon questions involving compensation to the Contractor for work actually performed or materials furnished and upon claims for extra compensation which have not been allowed by the Engineer. Jurisdiction of the board shall not extend to:
   1. A determination of quality of workmanship, or materials furnished, or to an interpretation of the intent of the plans and specifications, except as to matters of compensation.
   2. Setting aside or modifying the terms or requirements of the contract.

F. The findings or awards or both, of the arbitration board, if acceptable to both parties to the contract, may become a basis for final payment.

G. If the findings of the arbitration board are unacceptable to either party to the contract, said findings may become the basis for further negotiations between the parties. If a solution agreeable to both parties has not been reached through the filing of a claims through arbitration, or if arbitration has been denied, either party may resort to whatever other methods for resolving the claim are available.

1109.14 CLAIMS AGAINST CONTRACTOR

A. The Contractor guarantees the payment of all just claims against him/her or any subcontractor, in connection with the work. If another contractor on the project submits a claim for alleged damages caused by delay due to the Contractor not having completed its work in a timely manner, the Contractor's bond shall remain in effect until payment of such claim is made, or until litigation is started, at which time the bond will be released.

1109.15 TIME LIMITS FOR FINAL ADJUSTMENT

A. The Contractor shall understand that the Contracting Authority will not be bound to consider applications for correction of estimates and payments after the Contractor has signed the final estimate, or after 30 days from the date when the final estimate is submitted to the Contractor for approval. Should an error be discovered as a result of the Contractor's annual audit, an application for corrections promptly made will be considered.

1109.16 NATIONAL EMERGENCY PROVISIONS

A. The Contracting Authority may, with written notice, terminate the contract, or a portion thereof, when the Contractor is prevented from proceeding with the construction contract as a direct result of an executive order of the President with respect to the prosecution of war, or in the interest of national defenses as provided in Chapter 573A of the Code of Iowa.

B. When contracts, or any portion thereof, are terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract unit prices or as mutually agreed for items of work partially completed or not started. No claim for loss of anticipated profits shall be considered.
   1. Reimbursement for organization of work (when not included in the contract) and moving equipment to and from the job will be considered where the volume of work completed is too small to compensate the contractor for these expenses under the contract unit prices, the intent being that an equitable settlement will be made with the Contractor.

C. Acceptable materials, obtained by the Contractor for the work, which have been inspected, tested, and accepted by the Engineer, and which are not incorporated into the work, shall be purchased from the Contractor at actual cost, as shown by receipted bills and actual cost records, at such points of delivery as may be designated by the Engineer.

D. Termination of a contract, or a portion thereof, shall not relieve the Contractor of its responsibilities for the completed work, nor shall it relieve the Contractor's surety of its obligation for and concerning any just claims arising out of the work performed.

1109.17 STANDARD CONTRACT CLAUSES

A. Differing site conditions.
   1. During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall

promptly notify the other party, in writing, of the specific differing conditions before they are disturbed and before the affected work is performed.

2. Upon written notification, the Engineer will investigate the conditions, and if he/she determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly.
    a. The Engineer will notify the Contractor of his/her determination whether or not an adjustment of the contract is warranted.
3. No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.
4. No contract adjustment will be allowed under this clause for any effects caused on unchanged work.

B. Suspension of work ordered by the Engineer.
1. If the performance of all or any portion of the work is suspended or delayed by the Engineer, in writing, for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer, in writing, a request for adjustment within seven (7) calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
2. Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or Subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment, excluding profit, and modify the contract in writing accordingly.
    a. The Engineer will notify the Contractor of his/her determination, whether or not an adjustment of the contract is warranted.
3. No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.
4. No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

C. Significant changes in the character of work.
1. The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work, as are necessary to satisfactorily complete the project.
a. Such changes in quantities and alternations shall not invalidate the contract nor release the Surety, and the Contractor agrees to perform the work as altered.
2. If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any anticipated profits, adjustments will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If such a basis cannot be agreed upon, an adjustment will be made either for or against the Contractor in such amount as the engineer may determine to be fair and equitable.
3. If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contracts the altered work will be paid for as provided elsewhere in the contract.
4. The term "significant change" shall be construed to apply only to the following circumstances:
    a. When the character of the work as altered, differs materially in kind or nature from that involved or included in the original proposed construction or;
    b. When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity, any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work.

1109.18 INTEREST PAYMENTS

A. Interest on monthly payment estimates.

1. Interests shall be paid to the Contractor on any progress payment approved by the Engineer under paragraph A of paragraph 1109.06 of these General Covenants and Provisions, which remains unpaid after thirty (30) days of the receipt by the Contracting Authority.
    a. Receipt by the Contracting Authority shall be defined as the date the Contracting Authority's central office mail staff receives the progress payment request and stamp it. All progress payment requests which are delivered directly to the central office by the Contractor or the Inspector of the Contracting Authority shall have a date of receipt entered by the mail room staff.
    b. Interest shall accrue on the 31st day after receipt by the Contracting Authority, if approved by the Engineer, and shall end on the date the warrant is issued by the Iowa Department of Revenue. The rate of interest shall be the same as the rate of interest in effect under 453.6 of the Iowa Code, as the date interest begin to accrue.

B. Interest on retainage.
    1. Interest shall be paid on any retained funds held under paragraph B of section 1109.06 of these General Covenants and Provisions. Interest shall be paid as outlined in Iowa Administrative Code section 561, Chapter 8.7.

END OF SECTION 00700

SECTION 00710
(Revised 9/8/95)

SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

Notice of Requirements for Affirmative Action to ensure Equal Employment Opportunity (Executive Order 11246 as amended) and Iowa Executive Orders 15 and 34. This includes employment goals for minorities and women in construction.

60-1.4 EQUAL OPPORTUNITY CLAUSE.

A. Federally assisted construction contracts.

1. Except as otherwise provided, each administering agency shall require the inclusion of the following language as a condition of any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of the equal opportunity clause.

B. The applicant hereby agrees that it will 1ncorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loans insurance, or guarantee, the following equal opportunity clause:

C. During the performance of this contracts the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee, or applicant for employment because of race, colors, religion, sex, national origin, or disability.

a. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following; Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

b. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

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

3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labors or as otherwise provided by law.

7. The Contractor will include the portion of the sentence immediately preceding paragraph 1. and the provisions of paragraphs 1-7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the

Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

a. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

b. Provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

I. DEFINITIONS.

A. Definitions as used in these specifications:

1. **Covered Area** means the entire State of Iowa, however, those areas of a Hometown Plan approved by the US Department of Labor will be considered separately.

2. **Director** means Director, Office of Federal Contract Compliance Program, United States Department of Labor or any person to whom the Director delegates authority.

3. **Employer Identification Number** means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Returns US, Treasury Department Form 941.

4. **Designated Geographical Areas**.

a. **Standard Metropolitan Statistical Area (SMSA)**. These areas represent a reasoned judgement as to how metropolitan areas are defined statistically in a uniform manner, using data items that are:

1) widely recognized as indicative or metropolitan character, (population, urban character, nonagricultural employment, population, density, and commuting ties), and

2) available from a body of Federal statistics which has been uniformly and simultaneously collected in all parts of the country, and processed and tabulated according to consistent standards. Thus, if a project is located within an SMSA, it can be concluded that a reasonable commuting area exists within the SMSA, and that goals based on SMSA statistics are accurate.

b. **Economic Area (EA).** These areas are viewed as centers of commerce, and they generally cover areas which include the places of work and residence for most workers. There are 183 such areas, defined along county lines, covering the entire country. Counties were assigned to these economic areas in accordance with commuting patterns based primarily on data gathered by the Bureau of the Census.

5. **Minority** includes:

a. **Black** (all persons having origins in any of the Black African racial groups not of Hispanic origin);

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

c. **Asian and Pacific I slander** (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands), and

d. **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).

(Note: Minority women from the above referenced groups shall be counted as satisfying both the minority and female employment goals in each geographic area.)

II. GENERAL.

A. Equal Employment Opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375. The requirements set forth in this specification shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

III. EQUAL OPPORTUNITY POLICY.

A. The Contractor will accept as his/her operating policy the following statement which is designed to farther the

provision of equal employment opportunity to all persons without regard to their age, race, color, religion, sex, national origin, or disability, and to promote the full realization of equal employment opportunity through a positive, continuing program.

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their age, race, religion, sex, color, national origin, or disability. Such action shall include: employment, upgrading, demotion, and transfer, recruitment and recruitment advertising, layoff, and termination, rates of pay and other forms of compensation, and selection of training, including apprenticeship, preapprenticeship, and/or on-the-job training."

IV. GOALS.

A. Specific goals for female and minority participation have been established.

B. The goals for female participation, expressed in percentage terms for the total hours worked by the Contractor's aggregate workforce in each trade on all construction work, is 6.9 percent, with no timetable. This goal applies nationwide.

1. Goals for minority participation in Iowa, expressed in percentage terms for the total hours worked by the Contractor's aggregate workforce in each trade on all construction work, are shown on the map of Iowa that follows. The goals shown apply to each designated geographical area, as shown on the map.

C. These goals are applicable to all the Contractor's construction work (whether or not it is non-Federal or Federally assisted) performed in the designated area. For each contract and/or subcontract in excess of $10,000, the goals for minority participation will apply for all work to be performed in geographical areas designated by the Director pursuant to 41 CFR 60-4.6, and the goal for female participation will apply nationwide.

1. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on his/her implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and his/her efforts to meet the goals established for minority participation for the geographical area where the work is to be performed, or nationwide goal for female participation.

2. The hours of minority and female employment and training must be substantially uniform throughout the time period for the work of the contracts and within each trade, and the Contractor shall make a good-faith effort to employ minorities and women evenly on each of his/her projects.

3. 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, the Executive Orders and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

D. The Contractor shall provide written notification to the Department of Natural Resources (on behalf of the Director of the Office of Federal Contract Compliance Programs) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under this contract.

1. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number, estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontracts and the geographical area in which the contract work is to be performed.

E. Application of M inority Participation Goals.

1. **Minority Participation.** A single minority participation goal is established for each SMSA and EA. Timetables for the achievement of minority goals are not provided. A separate goal is established for each SMSA and for each EA. When a contract or subcontract to which this specification applies is for work located within a SMSA, the goal for what SMSA applies. When a contract or subcontract to which this specification applies is for work located outside an SMSA, the goal for that EA applies.

a. The applicable goal for the Contractor or subcontractors is the goal for each geographical area where the work is being performed, and all the work of the Federal or Federally assisted construction contractor or subcontractor is covered, whether the work is being performed for a contract to which the specification applies or not. Therefore, a contractor with work in SMSA "X" would apply the goal for

SMSA “X” for that work. The same contractors however, would apply the SMSA “Y” goal to all his/her work in SMSA “Y”, even though the Contractor’s work in SMSA “Y” is neither Federal nor Federally assisted.

2. **Participation of Minority Women.** The Contractor and required subcontractors will be permitted to count minority women belonging to one of the recognized minority groups listed in Article I of this specification as satisfying both the minority goal for each designated geographic area and the overall female goals. Conversely, nonminority women will only count toward satisfying the overall female goal.

V. STANDARD FEDERAL EQUAL EM PLOYM ENT OPPORTUNITY CONSTRUCTI ON CONTRACT SPECI FICATIONS (EXECUTIVE ORDER 11246).

A. Whenever the Contractors or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, he/she shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation set forth herein.

B. If the Contractor is participating (pursuant to 41 CFR 60-4.5) In a Hometown Plan approved by the US Department of Labor in the covered area either individually or through an association, his/her affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan.

1. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with his/her obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which he/she has employees.
2. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor’s or subcontractor’s failure to make good faith efforts to achieve the Plan goals and timetables.

C. The Contractor shall implement the specific affirmative action standards provided in paragraphs 6a through p. Article V, of these specifications. The goals set forth in the specifications are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which he/she has employees in the covered area. The Contractor is expected to make substantially uniform progress toward his/her goals in each craft during the period specified.

D. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor’s obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

E. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such 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 program, approved by U.S. Department of Labor.

F. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluations of the Contractor’s compliance with these specifications shall be based upon his/her effort to achieve maximum results form his/her actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

1. Endure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor’s employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project.
    a. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of, and carry out, the Contractor’s obligations to maintain such a working environments with specific attention to minority or female individuals working at such sites or such facilities.

2. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
3. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the- street applicant and minority or female referral form a union, a recruitment source, or community organization, and of what action was taken with respect to each such individual.
    a. If such individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

4. Provide immediate written notification to the Director, when the union or unions with which the Contractor has a collective bargaining agreement, have not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet his/her obligations.
5. Develop on-the-job training opportunities and/or participate in training programs for the area which 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. Training programs may be specifically required elsewhere in the contract documents. The Contractor's responsibility for training opportunities is not necessarily limited to training programs that are specifically required. The Contractor shall provide notice of these programs to the sources compiled under 6b above.
6. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting his/her EEO obligations, by including it in any policy manual and collective bargaining agreement, by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees, at least once a year, and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
7. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions, including specific review of these items with on-site supervisory personnel, such as superintendents, general foremen, etc. , prior to the initiation of construction work at any 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 EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to, and discussion the Contractor's EEO policy, with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.
9. Direct the Contractor's 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 one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment sources the Contractor shall 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 other minority persons and women and, where reasonable, provide after schools summer, and vacation employment to minority and female youths both on the site and in other areas of the Contractor's workforce.
11. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
12. Conduct, at least annually, an inventory and evaluation, of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
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 EEO policy and the Contractor's obligations under these specifications are being carried out.

14. Ensure that all facilities and company activities are nonsegregated, except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
15. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractor and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
16. Conduct a reviews at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

G. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (6a through p).

1. The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of the obligations under 6a through p of these specifications, provided the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet his/her individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor.
2. The obligation to comply, however, is the Contractor's, and failure of such group to fulfill an obligation shall not be a defense for the Contractor's noncompliance

H. A single overall goal for women and goals for minorities in each designated area are included in Article IV of these specifications. The Contractor is required to provide equal 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 the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved the goal for women generally, the Contractor may be in violation of the Executive Order if a specific minority group or women are underutilized.

I. The Contractor shall not use the goal, or affirmative action standards to discriminate against any person because of age, race, color, religion, sex, national origin, or disability.

J. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts, pursuant to Executive Order 11246.

K. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

L. The Contractors in fulfilling his/her obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph G of these specifications, so as to achieve maximum results from his/her efforts to endure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

M. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records.

1. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, 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.
2. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, Contractor shall not be required to maintain separate records.

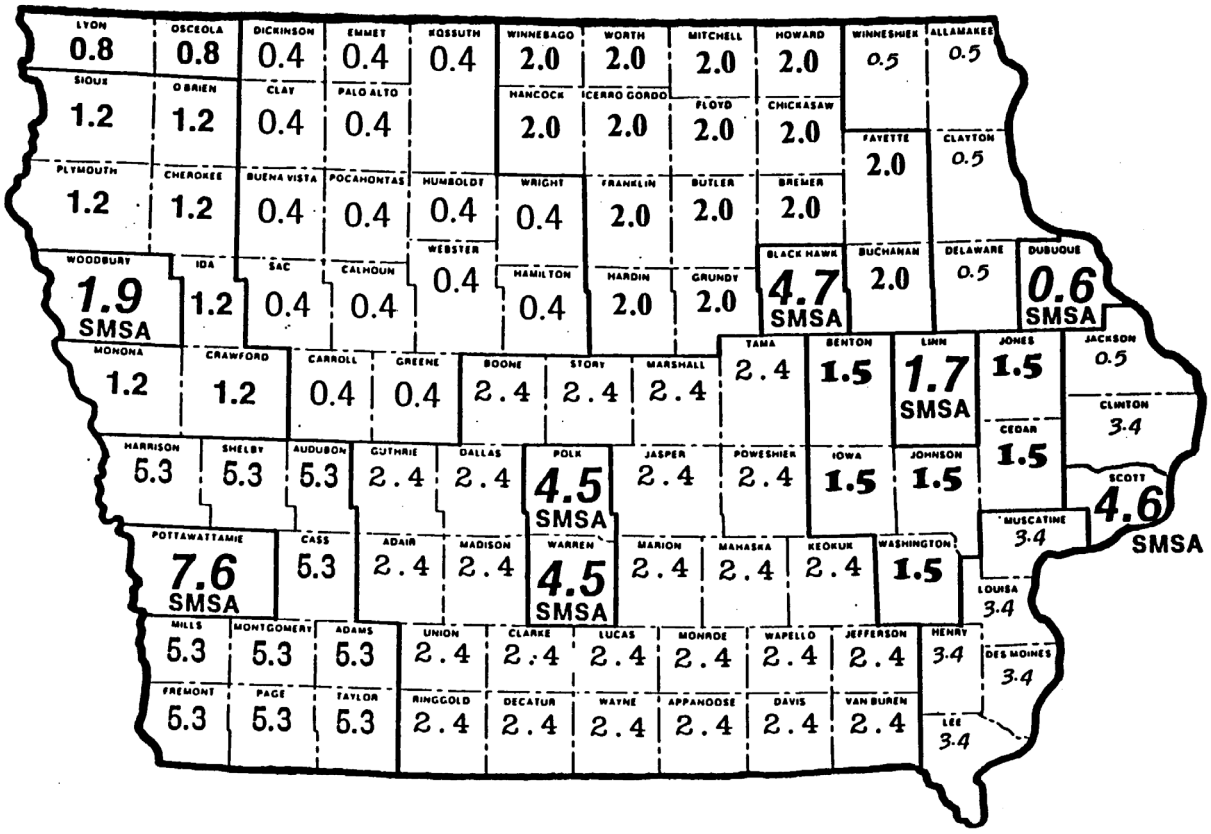
N. Nothing herein provided shall be construed as a limitation upon the application of other Iowa which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the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

VI. SUPPLEM ENTAL REPORTING REQUIREM ENTS.

A. The Contractor and subcontractors are required to make available upon request its Affirmative Action Program containing goals and time specifications. These contractual provisions shall be fully enforced. Any breach of the provisions shall be regarded as a material breach of contract.

B. The Contractor will keep such records as are necessary to determine compliance with equal employment opportunity obligations. The records kept by the Contractor will be designed to indicate the number of minority and nonminority group members and women employed in each work classification on the project. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department of Natural Resources and any Federal Agency funding any part of this project.

"Minority employment goals are expressed as a percentage (%) of total hours worked for each craft and/or trade in each county."



PART 0 - GENERAL

0.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

0.01 GENERAL

A. The General Conditions of the contract are the General Covenants and Provisions bound within.
   1. These General Covenants and Provisions are herein modified or supplemented by this Supplementary Covenant and Provisions.
   2. Articles of the General Covenant and Provision not directly affected by this section remains in full force as written, unless exceeded in requirements herein or elsewhere in these Specifications.

0.03 DEFINITION OF TERMS

A. Article 1100.03 “Definition of Terms” is supplemented and modified as follows:
   1. General: A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including Drawings which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in Contract Documents are defined generally in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to the extent not stated more explicitly in another provision of Contract Documents.
   2. Imperative Language: Used generally in Specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities, which must be fulfilled indirectly by Contractor, or when so noted, by others.
   3. Bureau Chief: The individual appointed by the Iowa Department of Natural Resources as the head of the Land and Waters bureau.
   4. DNR Construction Inspector: The Department of Natural Resources Construction Inspector will be the direct representative of the department at the project location with the authority to verify compliance with the provisions of each and all divisions of this Project Manual. Contact the DNR Construction Inspector regarding questions on site review, inspections and project coordination.
   5. Procurement Supervisor: The Procurement Supervisor will answer all questions regarding Bidding and Contract Procedures.
   6. General Requirements: The provisions of requirements of Division-1 sections. General requirements apply to entire work of Contract and, where so indicated, to other elements which are included in project.
   7. Indicated: The term “indicated” is a cross-reference to details, notes or schedules on Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as “shown,” “noted,” “scheduled,” and “specified” are used in lieu of “indicated,” it is for the purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.
   8. Directed, Requested,...,: Where not otherwise explained, terms such as “directed,” “requested,” “authorized,” “selected,” “directed by Engineer,” “requested by Engineer,” etc. However, no such implied meaning will be interpreted to extend Engineer’s responsibility into Contractor’s area of construction supervision.
   9. Approve: Where used in conjunction with Engineer’s response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of the term “approved,” will be held to limitations of Engineer’s responsibilities and duties as specified in General Covenants and Provisions and Supplementary Covenants and Provisions. In no case will “approval” by Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of contract documents.
   10. Project Site: The space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on Drawings, and may or may not be identical with description of land upon which project is to be built.
   11. Furnish: Except as otherwise defined in greater detail, the term “furnish” is used to mean supply and deliver

to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

12. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.
13. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.
14. Installer: The entity (person, firm...) engaged by the Contractor or its subcontractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in portions of the work they are to accomplish.

PART 1 - INSTRUCTIONS TO BIDDERS

1.01 GENERAL

A. Article 1101.101 "General" is supplemented and modified as follows: Add:

F. All Bidders must complete and return Form 5700-49 with their bids (See 00310).

1.02 DRAWINGS AND SPECIFICATIONS

A. Article 1101.02 "Drawings and Specifications" is supplemented and modified as follows:
   1. The Drawings and Specifications which are enumerated in the Index of drawings and Table of Content of this project manual are part of this contract.

1.07 ESTIMATE OF QUANTITIES

A. Article 1101.07 "Estimate of Quantities" is supplemented and modified as follows:
   1. Estimated quantities are minimum quantities required. Bidding contractors shall determine their own quantities as required to complete the work to provide a total bid for a complete and proper project.

1.14 AWARD OF THE CONTRACT

A. Article 1101.14 "Award of the Contract" is supplemented and modified as follows: Delete paragraph B and C and replace with the following:
B. The Department of Natural Resources Reserves the right to reject all bids or any proposal or to waive informalities in any proposal or to accept any proposal which will best serve the interests of the program for which Federal assistance is awarded.
C. If, at the time this contract is to be awarded, the lowest proposal submitted by a qualified, responsible bidder is in the best interest of the program, the contract will be awarded, and the bidder to whom the award is made will be promptly notified after the Department of Natural Resources meeting.

PART 4 - SCOPE OF WORK

4.03 INCREASED OR DECREASED QUANTITIES

A. Article 1104.03 "Increased or Decreased Quantities" is supplemented or modified as follows:
   1. The Contractor shall be responsible for furnishing all labor, equipment and material necessary to complete all the work required for this project. There will be no additional compensation for any increases of quantities determined to be necessary by the Engineer/DNR Construction Inspector to accomplish the intent of these contract documents.

4.10 PERMITS AND ARRANGEMENTS WITH OTHER GOVERNMENTAL AGENCIES

A. Article 1104.10 "Permits and Arrangements with Other Governmental Agencies" is supplemented and modified as follows:
   1. Contractor shall take out and pay for any building permit which may be required, secure and pay for all permits, certificates and licenses required to prosecute the work, and shall arrange for and pay for all inspections required by local authorities.
   2. Apply and pay for NPDES Stormwater Discharge Permit (DNR's General Permit No. 2) for Construction Operation, as required by EPA regulations dated March 10, 2003, for any land-disturbing activity which will

disturb an area of one or more acres, with the Iowa DNR.

a. Permits are available from the DNR Storm Water Coordinator. (Tel. (515) 217-0875)

4.13 DRAWINGS AND SPECIFICATIONS

A. Article 1104.13 "Drawings and Specifications" is supplemented and modified as follows:

1. The Contractor shall be responsible for distributing to all involved in this project, Drawings and Specifications in quantities reasonably necessary for the completion of the portion of work they are responsible for. No additional payment will be made for shortcomings resulting from misunderstanding of Contract Documents due to any shortage of information between General Contractor, Subcontractors, and Material Suppliers.

4.14 THE CONTRACTING AUTHORITY'S RIGHT TO OCCUPY

A. Article 1104.14 "The Contracting Authority's Right to Occupy" is supplemented and modified as follows: Add:

B. Personnel of the Iowa Department of Natural Resources, the assisting Federal Agency, and the Iowa Department of Economic Development shall be allowed access to all area of the work site as required for the performance of their official duties.

4.15 CONSTRUCTION STAKES AND BENCH MARKS

A. Article 1105.07 "Construction Stakes and Bench Marks" is supplemented and modified as follows:

1. The Contractor will be responsible for setting the necessary stakes to establish centerlines, slopes, alignment, grade and other stakes as required for construction.
2. The Contractor shall assume full responsibility for the accuracy and correctness thereof.

PART 6 - CONTROL OF MATERIALS

6.03 SAMPLES AND TESTS

A. Article 1106.03 "Samples and Tests" is supplemented and modified as follows:

1. All testing required by the contract documents or the DNR Construction Inspector shall be considered a part of the Contract and shall be paid for by the Contractor.

PART 7 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7.05 FEDERAL PARTICIPATION

A. Article 1107.05 "Federal Participation" is supplemented and modified as follows: Add:

B. If the project involves federal assistance, comply with the following requirements.

1. Debarment and Suspension:
   a. **All Bidders must complete and return Form 5700-49 along with their bid.**
   On all federally assisted contracts and subcontracts in excess of $25,000.00, any bidder or equipment supplier whose firm or affiliate is listed in the GSA publication "List of Parties Excluded from Federal Procurement and Nonprocurement Programs will be prohibited from submitting a bid who is listed in this publication will be determined to be a nonresponsive bidder.

2. Violation Facilities: On all federally assisted contracts and subcontracts in excess of $100,000.00, the Contractor shall comply with all applicable standards, orders or requirements issued under section 306 of the Clean Air Act (42 U. S. C. 1857(h)), section 5O8 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and EPA regulations (40 C.F.R. Part 15) which prohibit the use under nonexempt Federal contracts, grants or loans, of facilities included on the EPA List of Violating Facilities.
3. Energy Efficiency: On all federally assisted contract and subcontracts, the Contractor shall comply with mandatory standards and policies on energy efficiency contained in the State's energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163).
4. Where federal assistance for a project involving construction is received, comply with the following additional requirements:
   a. The Copeland Act: The Copeland (Anti-Kickback) Act, and the regulations of the Department of Labor under 29 CFR Part 3 prohibit Contractors and Subcontractors from inducing any person involved in your project to give up any part of the compensation to which that person is entitled under an employment

contract.

b. The Contract Work Hours and Safety Standards Act: The Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.) and the regulations for the Department of Labor under 29 CFR Part 5 require Contractors and Subcontractors to pay wages to laborers and mechanics on the basis of an eight hour work day and 40 hour work week and to pay at least time-and-a-half for work performed in excess of these time limitations. Also, the Act prohibits your contractors and subcontractors from requiring laborers and mechanics to work in hazardous, unsanitary, or dangerous conditions (see 29 CFR Part 1926).

c. Convict labor: You may not use convict labor unless the convicts are on work release, parole, or probation (see 18 U.S.C. 436).

5. Minority Business Enterprise/Women's Business Enterprise: Each contractor must fully comply with the requirements, terms, conditions of the Environmental Protection Agency's policy to award a fair share of subagreements to minority and women's businesses. The description of the affirmative steps to be taken are attached (See Region VII Procedures for Implementation of 40 CFR Part 33.240 attached).
6. Anti-Lobbying Act of 1990: The contractor which is awarded the low bid for a federally assisted contract and subcontract in excess of $100,000.00, will need to complete the attached certification (See Recipient Certification - Anti-Lobbying Act of 1990).

C. Additional Requirements under DNR Federal Grant Agreements regarding Termination of Contracts: Where construction contracts are being funded in whole or in parts by federal government monies, the following shall apply:

1. Termination for Cause: The Department may terminate this Contract in whole or in part, at any time before the expiration date, whenever the Department has determined that the Contractor has materially failed to comply with the conditions of the Contract.
   a. The Department shall promptly notify the Contractor in writing of the determination and reasons for the termination, together with the effective date.
   b. Payments made to the Contractor or recoveries by the Department under Contract terminated for cause shall be in accord with the legal rights and liabilities of the parties.

2. Termination for Convenience: The Department or the Contractor may terminate the Contract in whole or in part when both parties agree that continuation of the Contract would not produce beneficial results commensurate with future expenditure of funds.
   a. The two parties shall agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated.
   b. The Contractor shall not incur new obligations for the terminated portion after the effective date and shall cancel as many outstanding obligations as possible.
   c. The Contractor shall prepare and deliver to the Department copies of the final report summarizing the work performed and the results obtained to date.

E. Records:

1. Access to Records: The Department, the Federal Grantor Agency, the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Contract for the purpose of making audit, examination, excerpts and transcription.
2. Retention of Records: All records in the possession of the Contractor pertaining to this Contract shall be retained by the Contractor for a period of three (3) years beginning with the date upon which the final payment under this Contract is issued.

PART 9 - MEASUREMENT AND PAYMENTS

9.01 MEASUREMENT OF QUANTITIES

A. Article 1109.01 "Measurement of Quantities" is supplemented and modified as follows:

1. For the purpose of this project, Contract Quantities will be quantities determined by Contractor and

submitted to Engineer as price breakdown within 30 days after the award of contract.

9.03 ADJUSTMENT IN CONTRACT PRICE

A. Article 1109.03 “Adjustment in Contract Price” is supplemented and modified as follows:
   1. No adjustment in contract price shall be made unless the increase or decrease of quantity is due to an alteration of Contract Documents after the Contract is awarded.
   2. Changes in contract resulting in a decrease in the Scope of the Work shall be computed on the basis of Contractor’s price breakdown, and rebated to the Contracting Authority.
   3. Additional work determined to be necessary but not covered by the Contract shall be computed on the basis of the price breakdown or as outlined in 1109.04, as applicable, and paid for by the Owner.

9.10 SUBMITTAL REQUIRED BEFORE FINAL PAYMENT

A. Article 1109.10 “Submittals Required Before Final Payment” is supplemented and modified as follows:
   1. Submit to the Engineer or the DNR Construction Inspector all submittals required in Section 01300 before final payment can be made, unless otherwise specified.
   2. Other submittals may be required in other sections.

END OF SECTION 00811A

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the Contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions, and General Requirements.

1.02 GENERAL:

A. Special Condition:

1. Build America, Buy America Act:

This project shall comply with section 70914 of the Infrastructure Investment and Jobs Act, Public Law Number 117-58, which includes the Build America, Buy America Act. Section 70914 of this act requires the following Buy America Preference:

a. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
b. All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
c. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of or permanently affixed to the structure.

Any waivers from these requirements must be in writing and meet the requirements of section 70914(b) of the Build America, Buy America Act.

The fabricator/supplier of all iron, steel, manufactured products, and construction materials shall provide a letter certifying all of the materials are in compliance the Build America, Buy America Act, and the necessary supporting documentation will be retained by the fabricator/supplier for a minimum of seven years from the time the products are shipped for incorporation into the project.

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions and the Supplementary Covenants and Provisions.

1.02 SUMMARY OF WORK:

A. Work Covered by Contract Documents:
   1. Name of the project is “Lake Enhancements”, Project Number 26-01-32-02. Drawings and Specifications are dated August 2026.
   2. Briefly and without force and effect upon contract documents, work of the contract can be summarized as follows:
      a. This project is designed to add a concrete water control structure with stop logs and associated piping to facilitate water level management on 12 Mile Lake (Emmet Co.).

B. Occupancy:
   1. Owner: The DNR shall have the right to enter the building or work site and store or attach such fixtures or furniture as it may elect, or to do other work providing that such storage or work will not interfere with the completion of the Contractor’s work. Such occupancy by the DNR shall in no way imply final acceptance of any portion of the Contractor’s work.

1.04 MEASUREMENT AND PAYMENTS:

A. Measurements and payments shall be in accordance with Section 01250 of these specifications.

B. Before ordering any fabricated material or doing any work, verify all measurements at the project site. No additional compensation will be allowed because of difference between actual dimensions and the measurements indicated on the drawings. Report any difference immediately to the DNR for instructions before proceeding with the work.

1.06 COORDINATION:

A. Project Coordination:
   1. Take out and pay for any building permit which may be required, secure and pay for all permits, certificates and licenses required to prosecute the work, and arrange and pay for all inspections required by local authorities.
   2. Visit the site, compare the Drawings and Specifications with any work in place, and verify all conditions, including other work, if any, being performed. Failure to visit the site will in no way relieve the Contractor from necessity of furnishing any materials or performing any work that may be required in accordance with Drawings and Specifications.

B. Job Site Administration: Take complete charge of work under this contract. Coordinate the work of all trades and all phases of general, structural, plumbing, mechanical, and electrical work.

1.07 FIELD ENGINEERING:

A. Provide such field engineering services as are required for a proper completion of the work.
   1. Immediately upon entering project site for the purpose of beginning work:
      a. Establish actual project location, set back and side yards, if any, with the DNR Construction Inspector.
      b. Establish and maintain all lines and levels.

B. Additional requirements for field engineering may also be described in other sections of these specifications.

C. Verify all figures shown on Drawings before laying out work and report all discrepancies to the DNR Construction Inspector. Contractor will be held responsible for any error resulting from failure to do so.

1.09 ABBREVIATIONS AND SYMBOLS:

A. Reference to a technical society, institution, association, or government authority is made in the Specifications in accordance with the following abbreviations:

AAMA	Architectural Aluminum Manufacturers Association
AASHO	American Association of State Highway Officials
ACI	American Concrete Institute

AIA	American Institute of Project Engineers
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALS	American Lumber Standards
APA	American Plywood Association
ATI	Asphalt Tile Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWI	Project Architectural Wood Work Institute
AWPA	American Wood Preservers' Association
AWS	American Welding Society
CS	Commercial Standard, U.S. Department of Commerce
FGJA	Flat Glass Jobbers Association
FS	Federal Specification
GA	Gypsum Association
IES	Illuminating Engineering Society
MIA	Marble Institute of America
MLMA	Metal Lath Manufacturers Association
MS	Military Specification
MSTD	Military Standard
NAAMM	National Association of Metal Manufacturers, The
NHLA	National Hardwood Lumber Association
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NEC	National Electric Code of NBFU
NFPA	National Fire Protection Association
NLMA	National Lumber Manufacturers Association
NTMA	National Terrazzo and Mosaic Association, Inc.,
NWMA	National Woodwork Manufacturers Association
SDI	Steel Deck Institute
SSPC	Steel Structures Painting Council
SCPI	Structural Clay Products Institute
SPR	Simplified Practice Recommendations, U.S. Department of Commerce
TCA	Tile Council of America
UL	Underwriters' Laboratories, Inc.
USA	United States of America Standards Association

1.13 PROJECT MEETINGS:

A. Preconstruction Conference: Soon after award of contract and prior to the start of construction, attend a preconstruction conference with the representative of the Owner to define the requirements for contract administration and construction operation.
   1. Contact the DNR Construction Inspector who will determine the time, date and place of the conference.

B. Progress Meetings: The Contractor or the Contractor's representative shall be available at the job site to meet with the DNR Construction Inspector, as frequently and as arranged during the preconstruction conference, to discuss work progress.
   1. Give verbal report of progress, discuss work schedule, and present all conflicts, discrepancies and other difficulties for resolution.

1.16 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS:

A. Definitions: Specific administrative and procedural minimum actions are specified in this section, as extension of provisions in other contract documents. These requirements have been included for special purposes as

indicated. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized as an indication by Project Engineer that such temporary activity is not required for successful completion of the work and compliance with contract documents.

B. General: Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the work. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have replaced the need.

C. Temporary Utilities: The types of services required may include, but not by way of limitation, water, sewerage, surface drainage, electrical power and telephones. Where possible and reasonable, connect to existing franchised utilities for required services; comply with service companies recommendations on materials and methods, or engage service companies to install services. Locate and relocate services (as necessary) to minimize interference with construction operations.
   1. Sanitary Facilities:
      a. Temporary Toilets: When such or permanent facilities do not exist, provide and maintain toilets for use by workers. Keep toilets in sanitary condition.
      b. Temporary toilet facilities shall meet OSHA requirements.

D. Security:
   1. Protection of Work and Property:
      a. Place and maintain such barricades as may be necessary to prevent public access to the project site at no cost to the Owner.

E. Options and Substitutions:
   1. Bid shall include all equipment, materials, and services as specified, noted on the Drawings or required for a complete and proper installation.

1.19 CONTRACT CLOSEOUT:

A. Final Cleaning:
   1. Remove waste material and rubbish caused by the Work and leave all work clean and free of debris of any kind.
   2. Keep the site and access road reasonably clean and free of rubbish or waste material in order that the work may progress efficiently. Remove such rubbish or waste material entirely from the premises at each time of such cleaning.
   3. When the Work is completed and ready to turn over to the Owner, leave such work clean. This applies to all areas affected by contract work.
   4. On completion of the Work, thoroughly police and clean-up the premises surrounding the building.

B. Final Inspection:
   1. Request a final inspection in writing, at least ten days prior to the anticipated date of completion, from the DNR Construction Inspector.
   2. Work will not be considered ready for final inspection until all the work has been completed and the Contractor has certified that all items are properly operating and in strict compliance with the Contract Documents.
   3. The Contractor or project supervisor shall be at the job site during the final inspection.
   4. After the inspection, the DNR Construction Inspector will present the Contractor a list of items not meeting contract requirements which must be made acceptable before final payment is made.

END OF SECTION 01000

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 DESCRIPTION OF WORK:

A. Provide such field engineering services as are required for proper completion of the work including, but not necessarily limited to:
   1. Establishing and maintaining lines and levels;
   2. Structural design of shores, forms, and similar items provided as part of the Contractor's means and methods of construction;
   3. Establishing finish grade stakes (including blue tops) as necessary;

B. Additional requirements for field engineering may also be described in other sections of these specifications.

1.03 REFERENCES:

A. Refer to Section 1105.07 "Construction Stakes and Bench Marks" of the General Covenants and Provisions for assignment of responsibilities for the Owner and Contractor.

1.04 SUBMITTALS:

A. Comply with pertinent provisions of Section 01300, if applicable.

1.05 PROCEDURES:

A. In addition to procedure directed by the Contractor for proper performance of the Contractor's responsibilities:
   1. Locate and protect control points before starting work on the site.
   2. Preserve permanent reference points during progress of the work.
   3. Do not change or relocate reference points or items of the work without specific approval from the DNR Construction Inspector.
   4. Promptly advise the DNR Construction Inspector of a lost, destroyed, or reference point-requiring relocation due to other changes in the work.
      a. When directed by the DNR Construction Inspector, replace referenced stakes at no additional cost to the Owner.

B. Meet with DNR Construction Inspector to establish actual building location, set backs, and side yards, if required.

END OF SECTION 01050

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 LUMP SUM / UNIT PRICE BID:

A. Bid each item on a Unit Price basis or Lump Sum basis as required, including furnishing all labor, equipment and materials necessary to complete all the work indicated in the Contract Documents.

1.03 QUANTITIES:

A. Various estimated quantities are furnished within the Contract Documents to assist the Contractor in reviewing the Project prior to bidding. The estimated quantities are not intended to be used by the Contractor as sole basis for determining the scope and volume of the work. The Contractor is responsible for verifying all quantities necessary to submit bids for the construction of a proper and complete project.

1.04 MEASUREMENT:

A. The contractor is responsible for constructing the project to the final lines and grades shown. Owner will measure construction units only to ensure that at least minimum quantities have been properly installed.

1.05 SCOPE:

A. Each item in the Bidder's Proposal Schedule of Prices will be paid at the unit or lump sum price. The price for each item shall be considered full compensation for furnishing superintendence, overhead, bonds, insurance, mobilization, testing and profit necessary to complete the construction of the item of the project listed in the Bidder's Proposal.

B. It is not the intent of the Bidder's Proposal to itemize each and every item and system required. Items required for project completion and not specifically mentioned in Bidder's Proposal shall be included with items which they would be considered subsidiary.

1.06 ESTIMATED QUANTITIES:

A. The items and quantities described above, as well as others listed throughout the Contract Documents, are provided for the bidder's review and consideration. The quantities listed herein are not guaranteed by the owner or the Project Engineer to be totally accurate nor to include all items of work. They are provided for the bidder's convenience to assist in the preparation of the bid. The bidder is responsible for preparing his own quantity takeoff and bid preparation.

END OF SECTION 01250

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 SUMMARY:

A. Provide submittals required in this Section, refer to technical specification for submittal requirements for each section of the work to be performed.

1.03 PROGRESS SCHEDULE:

A. Submit a project schedule to the Project Engineer for approval within 30 days after award of contract, but not later than the contract start date. The type of schedule required is at Contractor's option.
B. Prepare an approved, reproducible form and include the following:
   1. Breakdown of work activities in categories so approved and segmented as necessary to allow close monitoring of progress of the work during construction.
   2. Order of the work necessary to meet time for completion.
   3. Breakdown of the work schedule of all subcontractors scheduled in cooperation with Contractor's work.
   4. Anticipated monthly value for work completed.
   5. Space for the additional display of actual performance on the schedule.
C. After necessary revisions have been made and approved, present one print of schedule to each subcontractor and three copies to the Owner.
D. Upon request, update the schedule to reflect changes required by actual conditions and indicate actual work completed. Provide same number of copies as required for original submission.
E. Payment will be withheld until progress schedule in acceptable form has been received by Project Engineer.

1.04 PRICE BREAKDOWN:

A. Within 30 days after award of contract, but not later than the contract start date, submit to the Project Engineer for approval a price breakdown of major lump sum bid items into smaller components for the purpose of determining monthly progress payments.
B. Include profit and overhead prices in each item.
C. Payment will be withheld until receipt of price breakdown.
D. Provide breakdown as follows:
E. Items listed above include, but are not limited to, the following:

1.05 SHOP DRAWINGS AND MANUFACTURER'S LITERATURE:

A. Prior to installation of any item specified as requiring submittal, submit two (2) copies for Owner's use plus the number required for return to the Contractor, of manufacturer's literature containing detailed specifications and performance data, or shop drawings fully describing the items showing fabrication, layout, setting or erection details, including erection plan and details as required.
B. Number all submittals consecutively . Resubmittals shall bear the original submittal number plus a letter suffix: Example - #30A is the first resubmittal of item #30; #30B is the second resubmittal, etc.
C. Shop drawings used at site must be approved by the Project Engineer.
D. Do not construe the approval of shop drawings to be a complete check. This approval will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility to comply with all terms and conditions of the plans and specifications. The Contractor shall be responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work.

1.06 SAMPLES:

A. Submit in Duplicate:
B. Provide samples of sufficient size to permit an accurate appraisal of color, texture, finish, workmanship, and other appropriate characteristics.

C. Submit samples with shop drawings when both are required.
D. Field Samples and Mock-Ups:
   1. Erect mock-ups at location acceptable to the DNR Construction Inspector, at project site.
   2. Construct each sample or mock-up complete to the dimension indicated, including work of all crafts required in finish work.

1.07 QUALITY ASSURANCE:

A. Coordination of Submittals:
   1. Prior to submitting required material, carefully review and coordinate all aspects of each item being submitted.
   2. Verify that each item and its submittal conform in all respects with the specified requirements.
   3. Prior to sending submittals to Project Engineer, the stamp and sign each submittal, certifying that they conform in all respects with the specified requirements.
B. Substitutions:
   1. The contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when listed with the Project Engineer prior to the bid date, and when substantiated by Contractor's submittal of required data within 35 calendar days after award of contract.
   2. The following products do not require further approval except for interface within the work:
      a. Products specified by reference to standard specifications such as ASTM or similar standards.
      b. Products specified by manufacturer's name and catalog model number for which another product is not substituted.
   3. Do not substitute materials, equipment or methods unless such substitutions have been specifically approved in writing.
C. Or Equal:
   1. Where the phrase "or equal," or "or equal as approved by the Project Engineer," occurs in the Contract Documents, do not assume that the materials, equipment or methods will be approved as equal unless the item has been specifically approved for this work by the Project Engineer.
   2. The Project Engineer's decision shall be final.

1.08 RESUBMISSION REQUIREMENTS:

A. Shop Drawings:
   1. Revise initial Drawings as directed and resubmit in accordance with submittal procedures.
   2. Indicate on Drawings all changes which have been made in addition to those requested by the Project Engineer.
B. Product Data and Samples: Resubmit new data and samples as specified for initial submittal.
C. Make all resubmittals within 7 calendar days after date of Project Engineer's previous review.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

A. Project Engineer will distribute copies of shop drawings and product data, after review, to:
   1. DNR Construction Inspector (1 copy)
   2. Project Engineer's File (1 copy)
   3. General Contractor (remaining copies)
B. Project Engineer will distribute samples in accordance with requirements.

1.10 CONTRACTOR RESPONSIBILITIES:

A. Review shop drawings, product data, and samples prior to submission to the next level of control.
B. Verify:
   1. Field dimensions.
   2. Field construction criteria.
   3. Catalog numbers and similar data.
C. Coordinate each submittal with requirements of:
   1. The work.
   2. The contract documents.

3. The work of other contractors.

D. Contractor's responsibility for errors and omissions in submittals is not relieved by Project Engineer's review of submittals.
E. Notify Project Engineer, in writing, of proposed deviations in submittals from contract requirements, prior to or at the time of submission.
F. Contractor's responsibility for deviations in submittals from contract document requirements is not relieved by Project Engineer's review of submittals.
G. Do not begin any work which requires submittals without having Project Engineer's stamp and initials or signature indicating approval.

1.11 REQUIRED SUBMITTALS:

A. Include, but do not limit to, the following submittals:

Spec. Section	Item Description	Shop Drawing	Product Data	Samples, Test Results, Certification
N/A				

1.12 RECORD DRAWINGS:

A. Provide and maintain at the project site, one complete set of prints of the project drawings. The drawings shall be kept in good, clean and readable condition.
B. The project site drawings shall have neatly inscribed all changes in work including relocation of lines, valves and fixtures, change in type of materials, etc. Changes shall be noted with red pencil or red ink.
C. Submit these corrected prints at time of final acceptance and prior to final payment. Note all data and changes on these record drawings in sufficient detail and clarity and provide information necessary for preparation of "as-built" drawings.
D. Final payment will be withheld until a set of corrected prints of the record drawings has been received by the Project Engineer/DNR Construction Inspector.

1.13 GUARANTEES, WARRANTIES AND CERTIFICATES:

A. Submit all guarantees, warranties and certificates prior to final payment.
B. Refer to Section 01700 of these specifications.

1.14 OPERATING AND MAINTENANCE INSTRUCTIONS:

A. Submit all operating and maintenance instructions to the DNR Construction Inspector prior to final payment.
B. Refer to Section 01700 of these specifications.

1.15 CHANGE ORDER PRICE QUOTES:

A. In the event of the need for change order, the DNR Construction Inspector will request a price quote from the Contractor for proposed changes to the contract.
B. For evaluation purposes, the Contractor's quote shall be broken down to show the costs of labor and materials for each proposed category of work included with the change, along with the total cost for Contractor's overhead, profit and bond for the proposed change.
C. All contract time extensions required as a result of a proposed change must be justified and supported in detail at the time of the proposal.

1.16 TEST REPORTS:

A. Refer to Section 01400 of these specifications.

1.17 DELIVERY TICKETS:

A. Submit to the DNR Construction Inspector one legible copy of each delivery ticket for all material delivered to the construction site.

B. The delivery ticket shall show brand name, catalog number and number of items received.

END OF SECTION 01300

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 SCOPE:

A. Supplementary tests and reports required in this section with any tests, reports, and other information that may be required additionally in any section of the specifications.
B. Inspection, sampling, and testing is required, but not limited to, the following:
   1. Section 03300 – Cast In Place Concrete
C. Sampling and testing frequencies and requirements are to comply with IDOT IM-204.

1.03 TESTS BY INDEPENDENT TESTING LABORATORY:

A. Testing Laboratory:
   1. Contractor to select and pay for an independent testing laboratory, acceptable to the Project Engineer, to perform specified services required by the contract.
   2. Employment of testing laboratory will in no way relieve Contractor's obligations to perform work in accord with the contract.
   3. Include in lump sum bid the cost for all testing services required. No separate payments will be made for testing. Include all associated costs in the various appropriate bid items. Project Engineer/DNR Construction Inspector will direct all tests. The Contractor shall pay the testing firm.
B. Contractor Shall:
   1. Make available at no cost, all material to be tested.
   2. Provide labor necessary to supply samples and assist in making tests.
   3. Advise laboratory of the identity of material sources and instruct suppliers to allow inspections by laboratory.
C. Testing laboratory shall:
   1. Submit written report promptly, covering each inspection and test to the Project Engineer, including:
      a. Date issued.
      b. Project title and number.
      c. Testing laboratory name and address.
      d. Name and signature of laboratory technician.
      e. Date of inspection and sampling.
      f. Record of temperature and weather.
      g. Date of test.
      h. Identification of product and specification section.
      i. Location of project.
      j. Type of inspection or test.
      k. Observations regarding compliance with Contract Documents.
   2. Promptly notify Project Engineer of irregularities or deficiencies of work which are observed during performance of testing services.
   3. Perform additional services required by the Project Engineer/DNR Construction Inspector.
D. Laboratory is not authorized to:
   1. Release, revoke, alter or enlarge on, contract requirements.
   2. Approve or accept any portion of work.
   3. Perform any duties of the Contractor.
E. Conduct tests in accordance with the requirements of the designated specifications or, where not specified, the latest appropriate standard of the American Society for Testing and Material.

1.04 LABORATORY SERVICES AND TESTS REQUIRED:

A. Concrete:
   1. Secure samples of aggregates Contractor proposes to use and test for compliance with specifications.

2. Certify compliance with specification of cement proposed for use by the Contractor.
3. Review concrete design mix proportions for the required concrete strengths using materials Contractor proposes to use on the project. Incorporate specified admixtures and not less than amount of cement specified. Perform appropriate laboratory tests, including compression tests of cylinders and slump test to substantiate mix designs. Submit one copy of report to the Project Engineer, one copy to the DNR Construction Inspector, and one copy to the Contractor, clearly indicating the results of the mix design review.
4. When requested by the DNR Construction Inspector, inspect and test material during concrete work to substantiate compliance with specifications and mix requirements.
5. Slump Test: The DNR Construction Inspector will require slump tests to be performed as he desires in accordance with the provisions of these specifications.
6. Test Cylinders:
    a. Each test shall consist of a set of three cylinders provided by the Contractor. Sampling and testing frequencies and requirements are to comply with IDOT IM-204.
    b. Provide a minimum of one set of test cylinders each day concrete is placed.
    c. The Contractor shall make and cure test cylinders in conformity with ASTM C-31.
    d. Note on record drawings placement locations represented by test cylinders.
7. Perform compression tests in accordance with applicable sections of IDOT specifications.
8. Identify all test cylinders with symbols to indicate location on the job where concrete tests were made. Note on record drawings.

B. Aggregate gradation and compaction as per applicable specifications.

1.05 CONTRACTOR'S RESPONSIBILITIES:

A. Furnish product mix design to meet or exceed Contract Documents.
B. Cooperate with laboratory personnel and provide access to work, as well as to manufacturer's operations.
    1. Monitor each inspection, sampling and test.
C. Provide to laboratory, preliminary representative samples of material to be tested, in specified quantities.
D. Furnish copies of mill test reports.
E. Furnish verification of compliance with contract requirements for material and equipment.
F. Furnish casual labor and facilities:
    1. To provide access to work to be tested.
    2. To obtain and handle samples at site.
    3. To facilitate inspections and tests.
    4. For laboratory's exclusive use for storage and curing of test samples.
G. Notify laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests. Notify DNR Construction Inspector when work is ready for testing. Schedule testing after approval of the DNR Construction Inspector. The Department of Natural Resources will not pay for any testing scheduled without the DNR Construction Inspector's specific authorization.
H. Correct work which is defective or which fails to conform to the Contract Documents in accordance with the general condition. Do not delay the project schedule or the work of other contractors with corrective work.
I. Pay all costs of re-testing when test results indicate non-compliance with contract requirements.
J. Patch all surfaces and areas disturbed by testing operations.

END OF SECTION 01400

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 WEATHER PROTECTION:

A. General:
   1. Provide necessary protection against weather to maintain all materials, apparatus, fixtures, and work free from damage whether in shipment, in storage, or in place.
   2. Do not perform wet work when temperature is below 40 degrees Fahrenheit or is forecast to be below 40 degrees Fahrenheit within the ensuing 48 hours, except when work is properly protected and sufficient heat is provided.

B. Heat Provision:
   1. When heat is required for proper weather protection, provide temporary enclosures of work and acceptable means to provide sufficient heat to maintain a temperature of not less than 50 degrees Fahrenheit. Provide higher temperatures when required by these specifications.
   2. Use only heating apparatus and fuels of approved safe types. Keep equipment and surroundings in a clean, safe condition. Use flame resistant tarpaulins and other materials for temporary enclosure of space. Use vented heaters only.

1.03 TEMPORARY UTILITIES:

A. Electricity, Lighting and Heating:
   1. Provide such temporary service as may be required for construction purposes with required distributing facilities and meter.
   2. Pay the cost of all electrical energy used on this part of the project until completion of the contract. If partial occupancy by the Owner occurs prior to completion, the Owner will pay proportional share of electrical energy used.
   3. Provide light bulbs required for all temporary construction lighting and replace when necessary.
   4. Use no temporary service material in permanent system without written approval of the Owner. When temporary electrical lines are no longer required, remove them and restore any parts of buildings or grounds damaged by such removal to original condition.
   5. Provide and maintain temporary lighting at barricades as required for safety.
   6. Provide any heating required by these specifications.

B. Telephone:
   1. Provide and pay all charges for telephone service.

C. Water:
   1. Provide, protect, and maintain an adequate water supply for use on the project for construction purposes, either by means of the permanent water supply line or by installing a temporary waterline as may be required.
   2. Install, valve, maintain, and protect such water supply lines as may be required.
   3. Remove temporary lines when they are no longer required. Restore to original condition any part of grounds or buildings damaged by removal.
   4. Pay the cost of all water used on this portion of the project until final completion of the contract.

D. Toilets:
   1. Provide and maintain suitable, weather tight, painted sanitary toilet facilities for all workers during construction period. When toilet facilities are no longer required, promptly remove from site. Disinfect, clean or treat the area as required.
   2. Provide and maintain facilities in accordance with requirements of applicable local and state health authorities and OSHA.
   3. Keep all toilet facilities clean and supplied with toilet paper at all time.

1.04 OPERATION AND STORAGE AREAS:

A. All operations of the Contractor (including storage of materials) upon premises shall be confined to areas authorized or approved by the DNR.
B. Premises adjacent to the construction will be made available for use by the Contractor without costs whenever such use will not interfere with other uses or purposes.
C. Do not enter on or occupy with personnel, tools, equipment, or material any ground outside the DNR's property without the written consent of the owner of such ground.
D. Other contractors and employees or agents of the DNR may for all necessary purposes enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.
E. Provide and maintain weather tight storage sheds for own use.
F. Provide storage sheds with substantial floors raised a minimum of six (6) inches above the ground.
G. Locate all storage sheds as approved by the DNR Construction Inspector.
H. Completely remove from site after completion of work.

1.05 PROTECTION AND RESTORATION:

A. General: Protect all structures, including walks, pipelines, trees, shrubbery, and lawns during the progress of the work; remove from the site all debris and unused materials; and, upon completion of the work, restore the site as nearly as possible to its original condition, including the replacement, at the Contractor's sole expense, of any facility or landscaping which has been damaged.

1.06 ACCESS ROADS:

A. Temporary Roads and Storage Areas:
   1. Construct and maintain all temporary access roads and storage areas required. Locate and construct all roads, ramps, mats, storage areas, and similar items in a manner approved by the Owner and provide overall management of available site areas.
B. Laws and Regulations:
   1. Observe all laws and regulations of the local, county, and state authorities in the use of all public roads and highways for the transportation of materials and equipment in connection with work on the project. Observe all overhead construction, bridges, cables, and the like. Repair damage to roads, highways, overhead construction and similar off-site items, resulting from operations in connection with this project.

1.07 WATER CONTROL:

A. Carry on construction work in a manner that will direct surface water away from the structures and away from adjoining property.
B. Provide own means of pumping, well pointing or otherwise maintaining excavations free from ground water encountered. Provide means of properly conveying such water off the construction site.

1.08 PARKING:

A. Make necessary provisions for parking of all employees on the project within the site limits. Include necessary access roads and maintenance of all roads and parking areas during construction period.
B. Park vehicles to avoid interference with normal construction activities and to avoid interference with Owner's operation.

1.10 SAFETY:

A. Provide at least one non-freezing-type fire extinguisher in each workshop and shed used for storage of materials on the premises. Place in readily accessible location.
B. Provide and maintain a basic first aid kit.
   1. Provide first aid supply commensurate with size of project with items necessary for first aid treatment of all injuries.
   2. Advise workers of the location of first aid supplies.
   3. Post telephone numbers of nearest hospital or ambulance service and fire station in conspicuous location. Advise all workers of location of telephone numbers.

END OF SECTION 01500

PART 1 - GENERAL

1.01 SUMMARY:

A. Section Includes: The work consists of furnishing all labor, material and equipment for the control and prevention of environmental pollution and damage as the result of construction operations under this Contract and for those measures set described herein, as indicated on the Drawings, specified herein, and as required for the construction of all work of this contract.
   1. Scope: 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.
   2. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract.
      a. Confine activities to areas defined by the Drawings and Specifications.

B. Related Sections: Drawings and General Provisions of the Contracts, including the General Covenants and Provisions, Supplementary Covenant and Provisions and General Requirements.

1.02 REFERENCES:

A. Provide protection of Air Resources in accordance with the following state and local codes and rules: Iowa Department of Environmental Quality Act, Oh. 455B of the 1977 Code of Iowa; Iowa Department Rules, 1973 I.D.R. 267 et seq.

1.03 DEFINITIONS:

A. Environmental pollution and damage: 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.

1.04 QUALITY ASSURANCE:

A. Quality Control: Establish and maintain quality control for environmental protection of all items set forth herein.
   1. Record on daily reports any problems in complying with laws, regulations and ordinances and corrective action taken.
   2. Assure compliance of subcontractors with this section.

B. Regulatory Requirements:
   1. Notification: The Project Engineer/DNR Construction Inspector will notify the Contractor in writing of any observed noncompliance with the aforementioned Federal, state or local laws, or regulations, permits and other elements of the Contractor's environmental protection plan.
   2. After receipt of such notice, inform the Project Engineer/DNR Construction Inspector of proposed corrective action and take such action as may be approved.
   3. If the Contractor fails to comply promptly, the Project Engineer/DNR Construction Inspector may issue an order stopping all or part of the work until satisfactory corrective action has been taken.
      a. No time extensions shall be granted such suspension.

C. National Pollutant Discharge Elimination System (NPDES): Contractor to provide a Notice of Intent (Form 1415) for application of a General Permit for Storm Water Discharge, file all necessary Forms and Drawings with the applicable Bureau of the DNR, and pay necessary application fees.(Required for sites of one acre or more)
   1. For Storm Water General Permit Assistance: Contact (515)281-7017 or (515)281-8693 for information.

D. Pollution Control Training: Train personnel in all phases of environmental protection.
   1. Include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control.

1.05 PROJECT/SITE CONDITIONS:

A. Environmental Requirements:

1. Protection of Land Resources: Prior to beginning construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area.

1.06 Maintenance of Pollution Control Facilities:

A. Maintain all constructed facilities and portable pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

PART 2 - PRODUCTS

2.01 MATERIAL AND EQUIPMENT:

A. Provide and maintain material and equipment necessary to perform the specified work.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Verification of Conditions: Prior to beginning construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area.
B. Limits of Work Area:
   1. Mark the areas that are not required to accomplish work to be performed under this contract.
   2. Mark or fence isolated areas within the general work area which are to be saved and protected.

3.02 PROTECTION OF LAND RESOURCES:

A. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without special permission from the Contracting Authority.
B. Do not fasten nor attach ropes, cables, or guys to any trees for anchorage unless specifically authorized.
C. Where such special emergency use is permitted, provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.

3.03 PROTECTION OF MONUMENTS AND MARKERS:

A. Protect monuments and markers before and during construction operations.
B. Where construction operations are to be conducted during darkness, the markers shall be visible.
C. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

3.04 PROTECTION OF LANDSCAPE:

A. Clearly identify trees, shrubs, vines, grasses land forms and other landscape features to be preserved by marking, fencing, or wrapping with boards, or any other approved techniques.

3.05 Location of Field Offices, Storage and Other Contractor Facilities:

A. Place field offices, staging areas, stockpile storage, and temporary buildings in areas approved by the Project Engineer/DNR Construction Inspector.
B. Do not temporarily move or relocate Contractor facilities unless approved by the Engineer/DNR Construction Inspector.

3.06 Disposal of Solid Wastes:

A. Place solid wastes in containers to be emptied on a regular schedule.
   1. Conduct handling and disposal to prevent contamination.
   2. Transport all solid waste off state property and dispose of in compliance with Federal, state, and local requirements for solid waste disposal.

3.07 Disposal of Chemical Waste:

A. Store chemical waste in corrosion resistant containers; remove from the work area and dispose of in accordance with Federal, state and local regulations.

3.08 Disposal of Discarded Materials:

A. Handle discarded materials other than those which can be included in the solid waste category as directed by the Contracting Authority.

3.09 Preservation and Recovery of Historical, Archeological and Cultural Resources:

A. Existing historical, archeological and cultural resources within the Contractor's work area will be so designated by the Department and precautions taken to preserve all such resources as they existed at the time they were pointed out to the Contractor.
B. Install protection and assume responsibility for the preservation of these resources as designated on the Drawings, or if not designated as necessary for their preservation.
C. Report any unusual items that might have historical or archeological value, found or observed during construction activities as soon as practicable to the DNR Construction Inspector.

3.10 Protection of Water Resources:

A. Keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters.
B. Implement applicable management techniques to control water pollution in accordance with the listed construction activities which are included in this contract.
C. Installation, maintenance and removal of water pollution control methods and materials to be incidental to other items of work on the project, unless a specific Bid Item for Erosion Control exists.
D. Comply with detailed Project Plans for temporary erosion control procedures to be performed on this project.

3.11 Protection of Fish and Wildlife Resources:

A. Keep construction activities under surveillance, management and control to minimize interference with, disturbance to and damage of fish and wildlife.
B. List species that require specific attention along with measures for their protection prior to beginning of construction operations.

3.12 Protection of Air Resources:

A. Keep construction activities under surveillance, management and control to minimize pollution of air resources. Perform or operate activities, equipment, processes, and work to accomplish the specified construction in strict accordance with the State of Iowa and all Federal emission and performance laws and standards.
B. Implement special management techniques as set out below to control air pollution by construction activities.
    1. Control of Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities at all times, including weekends, holidays and hours when work is not in progress.
        a. Maintain all work areas within or outside the project boundaries free from particulates which would cause the applicable air pollution standards to be exceeded or which would cause a hazard or a nuisance.
        b. 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.
        c. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times, The Contractor must have sufficient competent equipment available to accomplish this task.
        d. Perform control of particulates as the work proceeds and when ever a particulate nuisance or hazard occurs.
    2. Control hydrocarbons and carbon monoxide emissions from equipment in accordance with Federal, State and local allowable limits at all times.
    3. Control odors at all times for all construction activities.
    4. Assume responsibility for monitoring of air quality throughout the entire areas affected by the construction activities.

3.13 Protection of Sound Intrusions:

A. Keep construction activities under surveillance and control to minimize damage to the environment by noise.

3.14 Mosquito Control:

A. During dredging and due to large areas of shallow water in the disposal area, mosquito breeding must be controlled.
B. Deposit dredge material to minimize stagnant water pools.
C. Conduct non-aerial spraying or other methods of application of EPA approved chemicals to control mosquito breeding.

3.15 CLEANING:

A. Post Construction Clean Up: Cleanup all areas used for construction.
B. Restoration of Landscape Damage: Restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas, in accordance with the plan submitted for approval by the Contracting Authority.

END OF SECTION 01560

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 MATERIAL:

A. All materials, equipment, and other items incorporated in the work of this project must be new, and both materials and workmanship of best grade of their respective kinds.
B. To assure ready availability of materials, parts, or components for repair, replacement or future expansion purposes, all materials, equipment, and related components must be obtained from sources which maintain a regular, domestic stock.
C. Throughout all sections of these specifications, provide other material not specifically described but required to provide Owner with a complete and proper installation of all phases of the work of this contract. Select these materials subject to the approval of Project Engineer/DNR Construction Inspector.

1.03 ITEMS NOT IN CONTRACT:

A. All items indicated “N.I.C.” on drawings or specifications are items not included in this contract.
B. Provide necessary provisions in the work of this project to permit proper installation of “N.I.C.” items.

1.04 TRANSPORTATION AND HANDLING:

A. Provide protection against damage for all materials during delivery to and storage at the site.
B. Handling of all materials and equipment shall be such as will prevent damage to such material and/or equipment.
C. Replace or repair to the satisfaction of the DNR Construction Inspector, all items damaged because of Contractor’s failure to properly protect during transportation and handling, when on or off the project site, at no additional cost to the Owner.

1.05 STORAGE AND PROTECTION:

A. Protect all materials, work, and equipment against damage at all times.
B. Refer to Section 01500 for requirements for storage sheds. Store all materials that might be damaged within storage sheds.

END OF SECTION 01600

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 CLEANING UP:

A. Keep premises free of accumulation of surplus materials and rubbish from contractor and subcontractor operations.
   1. Remove all rubbish from premises.
B. Remove rubbish weekly and at other times as required by the DNR Construction Inspector. Keep interior of building free at all times of unattended combustible rubbish.
C. Immediately prior to final inspection:
   1. Clean all surfaces to condition acceptable for immediate occupancy.
   2. Remove all marks, stains, fingerprints, paint droppings, and other foreign matter from all finished items.

1.03 GUARANTEES, BONDS AND AFFIDAVITS:

A. Submit all written guarantees, bonds and affidavits required to the Owner prior to final payment.
B. Guarantees shall extend the full period of the required guarantee period after:
   1. Replacement of work found defective during guarantee period.
   2. Repair of inoperative items or adjustments to proper working conditions of items not operating properly at time of inspection at final completion.

1.04 RECORD DRAWINGS:

A. Required prior to final payment. Refer to Section 01300 of these specifications. Submit to DNR Construction Inspector.

1.05 SHOP DRAWINGS:

A. Refer to Section 01300 of these specifications.

1.06 TESTS:

A. Complete all tests required to prove actual operating performance of equipment and systems incorporated into the project. Refer to Section 01400 of these specifications.
B. Submit reports of all tests to the Owner prior to final payment.

1.07 MAINTENANCE AND OPERATING:

A. Refer to Section 01730 of these specifications, if applicable.

1.08 DAMAGE TO EXISTING STRUCTURES:

A. Prior to final acceptance by the Owner, repair or otherwise return to original condition any parts of the existing facilities which have been damaged during construction.

1.09 FINAL INSPECTION:

A. Request a final inspection in writing, at least ten days prior to the anticipated date of completion, from the DNR Construction Inspector.
B. Work will not be considered ready for final inspection until all the work has been completed and the Contractor has certified that all items are properly operating and in strict compliance with the contract documents.
C. The Contractor or his project supervisor shall be present at the job site during the final inspection.
   1. The DNR Construction Inspector will present the Contractor, after the final inspection, a list of any items not meeting contract requirements. This list will be confirmed in writing and all items listed must be made acceptable before final payment will be made.

END OF SECTION 01700

PART 1 - GENERAL

1.01 SUMMARY:

A. Section Includes: To aid the instruction of operating and maintenance personnel, and to provide a source of information regarding the systems incorporated into the Work, furnish and deliver the data described in this section and in pertinent other sections of these specifications.
   1. Additional data requirements may be described in individual sections.

B. Related Sections: Drawings and General Provisions of the contract, including the General Covenants and Provisions, Supplementary Covenants and Provisions and General Requirements.

1.02 SUBMITTALS:

A. Comply with pertinent provisions of Section 01300.

B. Submit two copies of a preliminary draft of the proposed manual or manuals to the Engineer for review and comments.

C. Unless otherwise directed in other sections, or in writing by the Engineer, submit two copies of the final manual to the DNR Construction Inspector.

1.03 QUALITY ASSURANCE:

A. In preparing required data, use only personnel thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with this section's requirements, and sufficiently skilled in technical writing to communicate the essential data.

PART 2 - PRODUCTS

2.01 INSTRUCTION MANUALS:

A. Where instruction manuals are required to be submitted under other sections of these specifications, prepare in accordance with the provisions of this section.

B. Format:
   1. Size: 8-1/2" x 11"
   2. Paper: White bond, at least 20 lb. weight
   3. Text: Neatly written or printed
   4. Drawings: 11" in height preferable; bind in with text; foldout acceptable; larger drawings acceptable but fold to fit within the manual and provide a drawing pocket inside rear cover or bind in with text.
   5. Flysheets: Separate each portion of the manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
   6. Binding: Use heavy-duty plastic or fiberboard covers with 3-ring binders. All binding is subject to the Owner's approval.
   7. Measurements: Provide all measurements in U.S. standard units: feet-and-inches, lbs., and cfm.

C. Provide front and back covers for each manual, using durable Owner's approved material, clearly identified on or through the cover with at least the following information:

   OPERATING AND MAINTENANCE INSTRUCTIONS
   (name and address of work)
   (name of contractor)
   (general subject of this manual)
   (space for approval signature of)
   (the owner and approval date)

D. Contents include at least the following:
   1. Neatly typewritten index near the front of the manual, giving immediate information as to location within the manual of all emergency information regarding the installation.
   2. Detailed list of subcontractors, including address, phone number and product or equipment installed.
   3. Complete instructions regarding operation and maintenance of all equipment involved, including lubrication, disassembly, and reassembly.

4. Complete nomenclature of all parts of all equipment.
5. Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.
6. Copy of all guarantees and warranties issued.
7. Manufacturers' bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.
8. Such other data as required in pertinent sections of these specifications.

PART 3 - EXECUTION

3.01 INSTRUCTION MANUALS:

A. Preliminary:
   1. Prepare a preliminary draft of each proposed manual.
   2. Show general arrangement, nature of contents in each portion, probable number of drawings and their size, and proposed method of binding and covering.
   3. Secure the Architect's approval prior to proceeding.

B. Final: Complete the manuals in strict accordance with the approved preliminary drafts and the Architect's review comments.

C. Revisions:
   1. Following the instruction of operation and maintenance personnel, review all proposed revisions of the manual with the DNR Construction Inspector.

END OF SECTION 01730

STANDARD CONSTRUCTION SPECIFICATIONS FOR WETLAND RESTORATION

2008 EDITION



GREAT LAKES/ATLANTIC REGIONAL OFFICE

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201 MOBILIZATION

201.10 DESCRIPTION

The work shall include the supply of all labor, material and equipment to transport all needed labor, material and equipment to and from a project site to successfully complete that project as shown on the plans or described by the Engineer. When work consists of construction in a number of different locations at a given project site, mobilization shall include the transportation of the required labor, material and equipment between the various locations at the project site.

201.20 METHOD

The Contractor shall conduct all mobilization operations in a timely orderly, manner. Unless otherwise approved by the Engineer, mobilization operations shall commence no later than one week after the pre-construction meeting. Mobilization shall commence no later than one week after project completion and be finished within two weeks of project completion. During all operations, the Contractor is responsible for maintaining public and private property in original condition.

201.30 METHOD OF MEASUREMENT

Mobilization shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Mobilization shall be measured in the following manner:

1) Lump Sum (LS): Mobilization shall be measured on a lump sum basis during completion of the entire project.
2) Each (EA): Mobilization shall be measured per (each) mobilization required to complete identified phases of a project that need to be completed at different construction times.

201.40 METHOD OF PAYMENT

The completed work for Mobilization, measured as specified, shall be paid for at the contract unit price. Payment shall be made according to the following schedule:

1) 25% of contract unit price at project start up.
2) 50% of contract unit price at half project completion.
3) 100% of contract unit price at project completion.

The unit price bid for mobilization shall include supplying all materials, equipment, labor and any incidental items necessary for performing all mobilization operations described in this specification. A Contractor may be eligible for a separate mobilization payment when the Contractor is required to discontinue work by the Corporation for reasons other than seasonal termination of work. The payment shall be commensurate to the amount of equipment and materials that are required to be removed from the project site and that payment shall not exceed the original unit price specified for mobilization.

202 SITE PREPARATION

202.10 DESCRIPTION

This specification shall cover the supply of all labor, materials, and equipment required for clearing and grubbing, and site preparation. The work shall include:

a) Removal from site and disposal of all trees, roots, brush, stone, rubbish and all other surface litter in designated areas by burying or burning.

b) Coordination of necessary clearing and grubbing operations to allow timely completion of construction staking of a project.

c) Grubbing to remove grass and debris.

d) Stripping of six (6) inches of topsoil and re-spreading after construction is completed, unless otherwise specified on the plans.

e) Final clean up of the site prior to demobilization will require the spreading and shaping of all materials stockpiled or moved to facilitate construction including but not limited to vegetative material.

202.20 CONSTRUCTION METHODS

Clearing shall consist of the cutting, removing, disposal and cleaning up of all timber, brush and fallen timber, stumps, shrubs, and rubbish. Trees and shrubs designated for preservation shall be marked and protected from scoring, barking or other injury during construction operations.

Grubbing shall consist of the removal and disposal of all roots, stumps, imbedded logs or objectionable debris to a depth of not less than twelve (12) inches below the original ground surface. Where no trees or brush exist, grubbing shall consist of removal of grass and debris prior to placement of fill material.

Topsoil stripping and stockpiling shall be performed for the footprint of all embankments and at the surface area of all pothole and channel excavations. Unless otherwise specified, upon completion of the construction, the stockpiled material shall be spread and finished to a reasonably smooth surface.

Trees, logs, stumps, brush and other debris shall be burned and buried or disposed of in areas designated by the Engineer. Areas such as borrows, pits, and excavations so designated shall be left in a neat and finished appearance free from debris. All material s disposed of shall be covered with clean fill and leveled in such a way as to promote drainage.

202.30 METHOD OF MEASUREMENT

Site preparation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Site preparation shall be measured in the following manner:

1) Lump Sum (LS): Site preparation shall be measured on a lump sum basis of site preparation operations. No separate measurement will be made for topsoil removal and replacement, clearing and grubbing or coordination of clearing and grubbing operations for construction staking.

2) Cubic Yard-Plan (CY-P): Site preparation shall be measured on a plan quantity basis of site preparation operations. This quantity shall be the neat line site preparation quantity for the specified depth at the footprint of the embankment or the surface area of potholes and channels as calculated from the construction plans. This measurement shall not include clearing and grubbing

or topsoil stripping and stockpiling of borrow areas as these quantities are considered incidental to embankment construction. No separate measurement for clearing and grubbing or coordination of clearing and grubbing operations for construction staking will be made.

3) Cubic Yard-Staked Quantity (CY-S): Site Preparation shall be measured on a staked quantity basis of site preparation operations. This quantity shall be the area of work, as determined by superimposing the construction staking notes on the original ground elevations, multiplied by the specified depth. This measurement shall not include clearing and grubbing or topsoil stripping and stockpiling of borrow areas as these quantities are considered incidental to embankment construction. No separate measurement for clearing and grubbing or coordination of clearing and grubbing operations for construction staking will be made.

4) Linear Feet (LF): Site preparation shall be measured on a linear feet basis. The length shall be the actual staked centerline distance of site preparation completed according to plans and specifications.

5) Acre (AC): Site preparation shall be measured on an acre basis. The dimension shall be the actual staked outside dimensions of site preparation completed according to plans and specifications.

6) Hourly-Recorded (HR-R): Site preparation shall be measured on a per diem basis. The per diem basis shall be the actual hours as recorded from an approved rpm/hr recording system for each piece of equipment used to complete the excavation portion of this project. No separate recording shall be made for mobilization and idling of equipment, unless otherwise specified.

When Site Preparation is not listed on the Standard Bid Form or when a unit price bid has not been entered for Site Preparation, it shall be considered incidental to the excavation, embankment, structure, and piping operations, and no measurement shall be made.

202.40 METHOD OF PAYMENT

The completed work for site preparation, measured as specified, shall be paid for at the contract unit price. The unit price bid for site preparation shall include supplying all materials, equipment, labor and any incidental items necessary for performing all site preparation operations described in this specification.

203 EXCAVATION

203.10 DESCRIPTION

This specification shall cover the supply of all labor, materials, and equipment required for the excavation, hauling and spreading of materials from within the limits of the cut area as shown on the plans, including but not limited to, excavation of designated areas; peninsula cutoffs; pothole and dugout construction; and key trench construction. The work shall include control of water during excavation, the shaping of slopes to the lines and grades shown on the drawings and the disposal of materials within designated areas. Unless otherwise specified, all material to be excavated shall be considered unclassified regardless of their nature or the manner in which they are removed.

203.20 CONSTRUCTION METHODS

203.21 SITE PREPARATION

Prior to any excavation, sites shall be cleared and grubbed with topsoil removed in accordance with the specification for **SITE PREPARATION**. Material cleared and grubbed shall be disposed of per the Engineer's directions. Topsoil removed shall be stockpiled and later re-spread on those areas at a thickness of six (6) inches, unless otherwise specified.

203.22 EXCAVATION

Excavation shall mean the removal of all materials encountered within the limits of excavation as shown on the drawings or as staked by the Engineer. Excavation shall be performed in as nearly a continuous operation as possible, trimmed and leveled to conform to the required lines, grades and tolerances. Areas over-excavated shall be replaced with suitable materials compacted to a density at least equal to that of the in-situ material or to the satisfaction of the Engineer.

Suitable material excavated from the excavation areas shown on the plans shall be used in any embankments called for on the plans. This shall include areas stripped of topsoil or unsuitable material that need to be backfilled with suitable material or key trenches. Placement of these embankments or backfills shall be done in accordance with the specification for **EMBANKMENT CONSTRUCTION**.

Excavated material unsuitable for embankments shall be deposited in locations shown on the plans or as directed by the Engineer. Unsuitable excavated materials shall be deposited as uniformly and continuously as possible in successive layers. No specific compaction will be required but where the material is placed with equipment other than tractor scrapers, blading and leveling is required to minimize voids. The fill shall be leveled upon completion to conform to lines and grades and enable the area to be seeded.

Rock excavation operations shall be controlled by the Contractor to produce the size gradations specified for other parts of the work, if the rock is designated by the Engineer as suitable for use.

203.23 DISPOSAL OF WASTE MATERIALS

All surplus or unsuitable excavated materials designated as waste by the Engineer shall be disposed of at the locations shown on the plans or as directed by the Engineer.

203.24 CONTROL OF SURFACE AND SUBSURFACE WATER

The Contractor is responsible for control of surface water, subsurface water, and drainage during the construction period. All temporary fills, crossings, and culverts necessary to promote drainage during construction will be installed and removed at the Contractor's expense prior to acceptance of the work. Any claims arising from upstream or downstream damages as a result of the construction or failure of these temporary works will be the Contractor's responsibility.

It is the responsibility of the Contractor to control the surface and sub-surface water and drainage in any excavation area, dewatering placement area and borrow area. Should material quality lessen through inadequate drainage, the Contractor may be directed by the Engineer to construct drainage facilities or develop an alternate borrow area at the Contractor's expense.

203.30 METHOD OF MEASUREMENT

Excavation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. No measurement for over-excavation shall be made. Excavation shall be measured in the following manner:

1) Lump Sum (LS): Excavation shall be measured on a lump sum basis and no separate measurement shall be made for the volume of material excavated.
2) Cubic Yards-Plan Quantity (CY-P): Excavation shall be measured on a plan quantity basis. This quantity shall be the neat line excavation quantities calculated from the construction plans.
3) Cubic Yards-Staked Quantity (CY-S): Excavation shall be measured on a staked quantity basis. The quantity shall be calculated by superimposing construction staking notes on original ground and using average end area methods of volume calculation.
4) Linear Feet (LF): Excavation shall be measured on a linear feet basis. The length shall be the actual staked centerline distance of excavation completed according to plans and specifications.
5) Hourly-Recorded (HR-R): Excavation shall be measured on a per diem basis. The per diem basis shall be the actual hours as recorded from an approved rpm/hr recording system for each piece of equipment used to complete the excavation operations. No separate recording shall be made for mobilization and idling of equipment, unless otherwise specified.

When a unit price bid has not been entered for Excavation, it shall be considered incidental to the embankment, structure, and piping operations, and no measurement shall be made.

203.40 METHOD OF PAYMENT

The completed work for excavation, measured as specified, shall be paid for at the contract unit price. The unit price bid for excavation shall include supplying all materials, equipment, labor and any incidental items necessary for performing all excavation operations described in this specification. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water. No payment for excavation of suitable material will be made when excavating in a designated borrow area to obtain material that is to be placed, measured and paid in accordance with the specification for **EMBANKMENT CONSTRUCTION**.

204 EMBANKMENT CONSTRUCTION

204.10 DESCRIPTION

The work shall include the supply of all labor, material and equipment required to complete the construction of key trenches, dams, dikes, berms, levees or roadway embankments as shown on the plans and as staked in the field. The work shall include:

a) Excavation of suitable materials from borrows or excavations.

b) Placement of materials from designated borrow areas or excavation into embankments such as dams, dikes, berms, levees or roadways.

c) Leveling and trimming of embankments and borrow areas.

204.20 CONSTRUCTION METHODS

204.21 SITE PREPARATION

Prior to any embankment or key trench construction, sites shall be cleared and grubbed with topsoil removed in accordance with the specification for **SITE PREPARATION**. Material cleared and grubbed shall be disposed of per the Engineer's directions. Topsoil removed shall be stockpiled and later re-spread on those areas at a thickness of six (6) inches, unless otherwise specified.

204.22 FILL MATERIAL

Unless otherwise specified, all material shall be placed in loose lifts of not more than eight (8) inches thickness and shall be compacted by suitable compaction equipment to a minimum of 95% of maximum density as determined by the Standard Proctor Method ASTM D698. Moisture content shall be in the range of -l% to +3% of optimum moisture content.

204.23 KEY TRENCH CONSTRUCTION

The Contractor shall not commence key trench construction until such work as specified in the specification for **SITE PREPARATION** has been completed to the satisfaction of the Engineer.

Where specified on the plans, the key trench excavation shall be made to the lines and grades shown on the drawings but may be altered during construction upon the direction of the Engineer to adjust for variation in soil conditions. Excavated material, if acceptable in quality to the Engineer, may be stockpiled for use in site preparation or embankment construction. Unacceptable materials shall be disposed of by placing into designated areas. The key trench completed to the original ground surface elevation shall be rough leveled prior to commencing embankment construction.

204.24 EMBANKMENT CONSTRUCTION

The Contractor shall not commence embankment construction until such work as specified in the specification for **SITE PREPARATION** and the key trench, where specified, has been completed to the satisfaction of the Engineer.

Embankment material excavated from ditches/borrows with tractor-scraper units shall be placed in successive layers across the entire width of the embankment. Each layer must be spread as deposited longitudinally along the embankment with each layer not exceeding eight (8) inches in thickness. With the Engineer's approval, the initial layer may be increased in thickness in wet areas to provide a working

pad capable of supporting the hauling equipment. The embankment at all times must be maintained in a reasonably level condition and hauling equipment shall be directed over the full width of each layer to facilitate uniform compaction.

Where embankment material is excavated with bucket equipment from ditches or borrow, it shall be deposited into the embankment within reach of the equipment. To prevent berm failure, stock piling on berms will not be permitted. Materials shall be placed and spread in layers with each layer after spreading not to exceed eight (8) inches in thickness.

All embankments will be construction staked to final grade elevations shown on the drawings. Embankments shall be brought to these elevations using embankment material graded to a tolerance of +/- 0.1 feet. Topsoil or riprap materials are to be placed on top of embankment construction. Topsoil depths shall be six (6) inches, unless otherwise specified, while riprap depths shall be as specified on the drawings. All embankment construction must be as continuous as possible and the fill maintained such that drainage is assured at all times.

Should fill settlement occur during the construction of the embankment and within seven days of substantial completion, and prior to acceptance of the work, additional material shall be placed and trimmed to achieve final grade by the Contractor at his own expense. After embankments have been constructed to grade, they shall be leveled and trimmed to conform to the lines, grades and cross-sections shown on the plans and/or as staked. Acceptance of finished embankment may be made progressively during the course of construction upon the request of the Contractor. A completed embankment once accepted by the Engineer shall not be used by the Contractor for haulage, access or other purposes without the consent of the Engineer.

Water used in conjunction with embankment construction activities shall be applied and paid as described in the specification for **WATER**.

204.25 TRIMMING

The crest, side slopes and berms of the embankment shall be leveled and trimmed to conform to the lines and grades shown on the drawings. The crest shall be constructed to the elevation shown on the plans prior to acceptance of the work. Acceptance of the finished embankment may be made progressively during the course of construction upon the request of the Contractor. Once accepted by the Engineer, the Contractor shall not use a completed embankment for haulage, access or other purposes.

204.26 HAUL ROADS AND BORROW AREAS

The construction, maintenance and removal of all haul roads from the borrow areas shall be the responsibility of the Contractor and be considered incidental to the work. Borrow areas shall be maintained during construction in a graded condition such that drainage is assured and that operations can resume quickly after precipitation periods. The maximum depth of any borrow area inside wetland units shall be three (3) feet unless otherwise specified on the plans. Following completion of the work, borrows are to be left in a graded condition acceptable to the Engineer and all haul roads, access roads and temporary crossings are to be removed.

204.27 CONTROL OF SURFACE AND SUBSURFACE WATER

The Contractor is responsible for control of surface water, subsurface water, and drainage during the construction period. All temporary fills, crossings, and culverts necessary to promote drainage during construction will be installed and removed at the Contractor's expense prior to acceptance of the work.

Any claims arising from upstream or downstream damages as a result of the construction or failure of these temporary works will be the Contractor's responsibility.

It is the responsibility of the Contractor to control the surface and sub-surface water and drainage in any excavation area, dewatering placement area and borrow area. Should material quality lessen through inadequate drainage, the Contractor may be directed by the Engineer to construct drainage facilities at the Contractor's expense.

204.30 METHOD OF MEASUREMENT

Embankment construction shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. No measurement for embankment constructed beyond the staked limits will be made. Embankment construction shall be measured in the following manner:

1) Lump Sum (LS): Embankment shall be measured on a lump sum basis of placed embankment. No separate volume measurement shall be made.
2) Cubic Yard-Plan Quantity (CY-P): Embankment shall be measured on a plan quantity basis. This quantity shall be the neat line quantity of placed embankment including site preparation calculated from the construction plans. This measurement shall also include site preparation quantities. Site preparation quantities to be added to embankment quantities shall be calculated as described in the specification for **SITE PREPARATION**. This measurement shall not include clearing and grubbing or topsoil stripping and stockpiling of borrow areas as these quantities are considered incidental to embankment construction.
3) Cubic Yard-Staked Quantity (CY-S): Embankment shall be measured on a staked quantity basis of placed embankment. This quantity shall be measured by superimposing the construction staking notes on the original ground elevations and using the average end method of volume calculation. This measurement shall also include site preparation quantities. Site preparation quantities to be added to embankment quantities shall be calculated as described in the specification for **SITE PREPARATION**. This measurement shall not include clearing and grubbing or topsoil stripping and stockpiling of borrow areas as these quantities are considered incidental to embankment construction.
4) Linear Feet (LF): Embankment shall be paid on a linear feet basis. This quantity shall be measured by the actual staked centerline distance of all embankment constructed according to plans and specifications.
5) Hourly-Recorded (HR-R): Embankment shall be measured on a per diem basis. The per diem basis shall be the actual hours as recorded from an approved rpm/hr recording system for each piece of equipment used to complete the embankment operations. No separate recording shall be made for mobilization and idling of equipment, unless otherwise specified.

No separate measurement shall be made for the fill around pipes, pipeline, and water control structures. This work shall be considered incidental to those bid items.

204.40 METHOD OF PAYMENT

The completed work for embankment construction, measured as specified, shall be paid for at the contract unit price. The unit price bid for embankment construction shall include supplying all materials, equipment, labor, and any incidental items necessary for performing all embankment construction operations described in this specification. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water.

205 CONSTRUCTED TOPOGRAPHY

205.10 DESCRIPTION

This specification shall cover the supply of all labor, materials, and equipment required for the construction of potholes, dugouts, basins, meandered channels, peninsula cutoffs or other topographic reconstruction as shown on the plans. The work shall include the excavation, hauling and spreading of materials from within the limits of the cut area, control of water during excavation, the shaping of slopes to the lines and grades shown on the drawings and the disposal of materials within designated areas.

205.20 CONSTRUCTION METHODS

205.21 SITE PREPARATION

Prior to any excavation, sites shall be cleared and grubbed with topsoil removed in accordance with the specification for **SITE PREPARATION**. Material cleared and grubbed shall be disposed of per the Engineer's directions. Unless otherwise specified, the debris shall be placed in the spoil areas and secured by incorporating it into the earth fill. Preparation of the site shall be done in a manner that destroys as little vegetation as feasible outside the area to be occupied by the topographic feature and the associated spoil areas. Topsoil removed shall be stockpiled and later re-spread on those areas at a thickness of six (6) inches, unless otherwise specified.

205.22 EXCAVATION

Excavation shall mean the removal of all materials encountered within the limits of excavation as shown on the drawings or as staked by the Engineer. Excavation shall be performed in as nearly a continuous operation as possible to conform to the required lines, grades and tolerances. Areas over-excavated shall be replaced with suitable materials compacted to a density at least equal to that of the in-situ material or to the satisfaction of the Engineer. The depth specified is nominal so the actual depth may vary 6 inches above and below the specified depth. The side slopes of the excavated basins shall be free of abrupt changes and blend into the existing ground contours.

Connection ditches shall have 3:1 or flatter side slopes. For curved segments, a scour hole effect shall be obtained by over-excavating the outside of the ditch with the inside of the curve being shallower.

Material excavated from the designated locations shall be used to create multiple upland habitat conditions based on the height, shape, and location of habitat mounds. Where designated on plans, spoil shaped into a mound shall be placed 25 to 30 feet from edge of basin. The side slopes of the mound shall be 6:1 or flatter. Large spoil areas may be shaped into multiple mounds. The completed earth fill in the mounds and ridges shall be left rough graded. No compaction of the earth fill will be required. Where designated on plans, spoil shaped into a ridge shall be continuous, with a minimum height of 1 foot. The ridge shall be used on the down slope side of a basin to impound additional water over the basin area. Unless otherwise specified, all material to be excavated shall be considered unclassified regardless of their nature or the manner in which they are removed.

205.23 CONTROL OF SURFACE AND SUBSURFACE WATER

The Contractor is responsible for control of surface water, subsurface water, and drainage during the construction period. All temporary fills, crossings, and culverts necessary to promote drainage during construction will be installed and removed at the Contractor's expense prior to acceptance of the work.

Any claims arising from upstream or downstream damages as a result of the construction or failure of these temporary works will be the Contractor's responsibility.

It is the responsibility of the Contractor to control the surface and sub-surface water and drainage in any excavation area, dewatering placement area and borrow area. Should material quality lessen through inadequate drainage, the Contractor may be directed by the Engineer to construct drainage facilities at the Contractor's expense.

205.30 METHOD OF MEASUREMENT

Constructed topography shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. The Standard Bid Form shall list the appropriate unit of measurement for each applicable feature, i.e., potholes, dugouts, channels, etc. Constructed Topography shall be measured in the following manner:

1) Lump Sum (LS): Topographic features shall be measured on a lump sum basis and no separate measurement shall be made for the volume of material excavated.
2) Acre-Plan Quantity (AC-P): Surface areas shall be measured on a plan quantity basis. This quantity shall be the neat line areas as calculated from the construction plans.
3) Cubic Yards-Plan Quantity (CY-P): Topographic features shall be measured on a plan quantity basis. This quantity shall be the neat line excavation quantities calculated from the plans.
4) Cubic Yards-Staked Quantity (CY-S): Topographic features shall be measured on a staked quantity basis. The quantity shall be calculated by superimposing construction staking notes on original ground and using average end area methods of volume calculation.
5) Linear Feet (LF): Topographic features shall be measured on a linear feet basis. The length shall be the actual staked centerline distance of excavation completed according to plans and specifications. No measurement shall be made for over-excavation, or excavation quantities or operations conducted outside of given stakes.
6) Each (EA): Topographic features shall be measured on an individual feature basis. The estimated number of features will be shown on the Standard Bid Form. The volume of material excavated from individual sites will vary. A neat line plan quantity estimate of material to be excavated will be shown on the plans.
7) Hourly-Recorded (HR-R): Topographic features shall be measured on a per diem basis. The per diem basis shall be the actual hours as recorded from an approved rpm/hr recording system for each piece of equipment used to complete the constructed topography operations. No separate recording shall be made for mobilization and idling of equipment, unless otherwise specified.

Mobilization of equipment between the individual feature sites will not be measured. This work shall be considered incidental to the construction of the topographic feature.

205.40 METHOD OF PAYMENT

The completed work for constructed topography, measured as specified, shall be paid for at the contract unit price. The unit price bid for constructed topography shall include supplying all materials, equipment, labor, and any incidental items necessary for performing all operations described in this specification. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water. No payment for excavation of suitable material will be made when excavating in a designated borrow area to obtain material that is to be placed, measured and paid in accordance with the specification for **EMBANKMENT CONSTRUCTION**.

206 WATER

206.10 DESCRIPTION

The work shall include the supply of all labor, material, and equipment required to add water to embankments as directed by the Engineer. The work shall include:

a) Locating and procuring a suitable water source.

b) Delivery of water to the site, applying and mixing water with embankment material.

206.20 MATERIALS

Water used for construction shall be reasonably clean and shall not affect normal soil characteristics.

206.30 CONSTRUCTION METHODS

Water shall be applied to the embankment areas in a way that maintains the specified moisture content. Sufficient equipment shall be on the project site to secure and maintain the specified moisture content until the required density is secured. Water shall be applied uniformly over the working area.

206.40 METHOD OF MEASUREMENT

Water shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Water shall be measured in the following manner:

1) Lump Sum (LS): Water shall be measured on a lump sum basis for applied water. No separate measurement shall be made.

2) KGAL - Plan Quantity (KG-P): Water shall be measured on a plan quantity basis. The quantity shall be the one thousand gallon (KGAL) increments as calculated using soil investigation information and listed on the plans or shown on the Standard Bid Form. No measurement shall be made for the volume of water applied.

3) KGAL - (KG): Water shall be measured on a volume basis. The water measured shall be the actual amount of applied water in one thousand-gallon (KGAL) increments used in the construction of the project. The amount used shall be measured in the field as agreed to by the Contractor and the Engineer.

206.50 METHOD OF PAYMENT

The completed work for water, measured as specified, shall be paid for at the contract unit price. The unit price bid for water shall include supplying all materials, equipment, labor and any incidental items necessary for performing all water operations described in this specification.

301 WATER CONTROL STRUCTURES

301.l0 DESCRIPTION

The work of this section shall include the supply of all labor, materials, and equipment required to complete the installation of the water control structures as called for on the drawings and/or specified herein. These water control structures may include but are not limited to the following:

a) Stoplog control structures

b) Gate control structures

c) Fixed level control structures

d) Any other structures specified on the plans

This work shall consist of coupling the structure to the pipe; excavation; bed preparation; installation of structure and associated hardware with the use of a concrete base pad or form, reinforcement, and concrete placement, or framing and supports as shown on the plans. Work shall also include the supply, placing and compaction of backfill to the lines and grades shown on the drawings or as specified.

301.20 MATERIALS

301.21 SUPPLY OF MATERIALS

Unless otherwise specified, the Contractor shall supply all couplers, nuts, bolts, riser controls, stoplog channels, sealants, and all accessories necessary to complete the installation as shown on the plans or recommended by the material manufacturer.

The structure material, diameter and length shall be as specified on the plans. Unless otherwise specified, the structure shall adhere to the aluminum corrugated metal specification as listed below. All culverts, inlet and outlet pipes, and appurtenances shall match the material and coating of the base riser unless otherwise specified on the plans. All materials supplied by the Contractor shall be subject to inspection by the Engineer.

The following specifications for each material type shall be adhered to.

1) Aluminum corrugated metal pipe risers. The minimum acceptable series for aluminum CMP shall be 3000 Series. The material shall meet the requirements of AASHTO M197.

   a) Pipe shall be close riveted or of a "lock seam" construction. Unless otherwise specified all pipes shall have a 2-2/3" x 1/2" corrugation. The gauge of the pipe shall be as follows unless otherwise specified on the plans:

Pipe Diameter	2-2/3” x ½” Corrugations Metal Thickness	3” x 1” Corrugations Metal Thickness
12"-21"	14	NA
24"-36"	12	14
42"-54"	10	12
60"-96"	8	10

   b) All welds shall be 3/16” fillets unless otherwise specified on the plans and should conform to Welded Joint Requirements of the latest edition of the AISC Manual. All

bolted connections shall utilize stainless steel bolts, nuts, and washers, grade 18-8 or 304 or better.

c) The minimum acceptable series for all structural aluminum, channels, angles, plates, rounds, etc. shall be 5000 Series, unless otherwise specified.

d) The portion of the riser that will be embedded in the concrete base shall be coated with asphalt mastic prior to installation.

2) Steel corrugated metal pipe risers. Where stated as acceptable on the plans, steel corrugated metal risers shall be made of galvanized or aluminized Type II steel. Galvanized steel corrugated metal pipe shall meet the composition requirements of AASHTO M218. The aluminized Type II steel shall conform to the requirements of AASHTO M274.

a) Pipe shall be close riveted or of a "lock seam" construction. Unless otherwise specified all pipes shall have a 2 2/3" x 1/2" corrugation. The gauge of the pipe shall be as follows unless otherwise specified on the plans:

Pipe Diameter	2-2/3" x ½" Corrugations Metal Thickness	3" x 1" Corrugations Metal Thickness
12"-21"	16	NA
24"-36"	14	16
42"-54"	12	14
60"-96"	10	12

b) Risers made of galvanized or aluminized Type II steel shall be coated. This coating shall be a double bituminous coating (dipped or sprayed), or a 10 mil polymeric film laminate. The coatings shall be applied to both the inside and outside of the riser. The bituminous coating shall be of double thickness and be in accordance with AASHTO M190 Type "A" Standard Specification. All spray coatings shall conform to AASHTO M243.

c) All welds shall be 3/16" fillets unless otherwise specified on the plans and should conform to Welded Joint Requirements of the latest edition of the AISC Manual.

3) Pre-cast concrete risers. Where stated as acceptable on the plans, pre-cast concrete structures shall conform to the requirements of ASTM C478. The risers shall be of the length shown on the plans. All pipe shall be connected to the riser utilizing a flexible watertight connector as approved by the Engineer.

4) Fiberglass, High Density Polyethylene (HDPE) Pipe, and Polyvinyl Chloride (PVC) Pipe Risers. Where stated as acceptable on the plans, Fiberglass, HDPE, and PVC risers shall be approved by the Engineer and shall be of the length shown on the Plans.

a) The minimum acceptable series for all structural aluminum, channels, angles, plates, rounds, etc. shall be 5000 Series, unless otherwise specified.

b) All bolted connections shall utilize stainless steel bolts, nuts and washers, grade 18-8 or 304 or better.

c) The pipe stubs for the structure shall incorporate a gasketed bell and spigot design with the ability to accept watertight HDPE pipe. The gasketed joint shall meet the requirements of ASTM F477 with a minimum watertight performance of 10.8 psi. 36" through 60" diameters shall have a reinforced bell and spigot.

d) The structure manufacturer shall weld and/or bond all stub joints on both the interior and exterior of the riser.

e) Fiberglass risers shall be of three-piece construction. The two-piece exterior shell shall consist of two molded fiberglass shells with reinforcing ribs and flanges. The fiberglass shall be a polyester resin. The center stop gate shall be of polyethylene construction.

f) HDPE risers shall have a smooth interior and annular exterior corrugations. The Engineer shall approve the pipe utilized for the structure. The material shall meet the requirements of ASTM D3350 with a minimum cell classification 335420C. 12" to 48" risers shall meet the requirements of AASHTO M294, Type S. 54" and 60" risers shall meet the requirements of AASHTO MP7.

g) PVC risers shall meet the material requirements of ASTM D1784. 12"to 15" risers shall meet the requirements of ASTM D3034. 18" and larger diameter risers shall meet the requirements of ASTM F679.

5) Unless otherwise specified, all corrugated metal pipe connections shall be made utilizing the flange coupler as shown on the plans.

6) Where called for the plans, annular connecting bands shall be the same material and have the same coating, corrugations, and gauge as specified for the pipe that is to be connected.

a) The connecting bands shall be either 24" in width or have a minimum of nine (9) corrugations. The minimum circumferential overlap shall be six (6) inches. If helical pipe is used, a minimum of four (4) re-rolled annular corrugations shall be formed to allow the use of the annular overlapping connecting bands.

b) To provide for a watertight joint, a closed cell expanded gasket shall be used in conjunction with connecting band. The gasket shall be at least 24" in width, 3/8" thick, with an unstretched diameter ten (10) percent less than normal pipe size and shall comply with ASTM D1056, Grade SCE-43. Mastic shall be placed on each side of the gasket.

c) The binders for the connecting bands will consist of a minimum of 6 rods and tank lugs, three (3) per side, in accordance with the plans. The minimum rod diameter shall be 7/16" with ½" threads. All rods and lugs shall be stainless steel, grade 18-8 or 304 or better.

7) When called for on the plans, the Contractor shall supply to the site ready mix concrete, or site mix concrete in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE**. Forms, reinforcing steel or wire mesh, for the concrete pad for the control structure will be the responsibility of the Contractor. Installation of a concrete base for all prefabricated risers shall be considered incidental to the riser installation and no separate measurement or payment shall be made for this work.

301.22 HANDLING AND STORAGE OF MATERIALS

All materials shall be handled and stored in careful and workmanlike manner to the satisfaction of the Engineer. Any dents or depressions as a result of storage and handling during transportation or installation shall not be allowed. The Contractor shall be responsible for replacement and reinstallation of the damaged riser at his own expense.

301.30 CONSTRUCTION METHODS

301.31 CONTROL OF SURFACE/SUBSURFACE WATER

The Contractor is responsible for control of surface water, subsurface water, and drainage during the construction period. All temporary fills, crossings, and culverts necessary to promote drainage during construction will be installed and removed at the Contractor's expense prior to acceptance of the work.

Any claims arising from upstream or downstream damages as a result of the construction or failure of these temporary works will be the Contractor's responsibility.

It is the responsibility of the Contractor to control the surface and sub-surface water and drainage in any excavation area, dewatering placement area and borrow area. Should material quality lessen through inadequate drainage, the Contractor may be directed by the Engineer to construct drainage facilities at the Contractor's expense.

301.32 CMP, FIBERGLASS, HDPE, & PVC CONTROL STRUCTURE INSTALLATION

Prior to installation of the control structure, any protective coating that has been removed from the structure exposing the pipe shall be recoated. Welding, drilling, bolting or otherwise attaching devices, temporary or permanent, to the structure to assist in structure installation is prohibited.

The Contractor shall compact the in-situ material below the base elevation prior to assembly and erection of the structure. This bed shall be fully leveled and compacted throughout the full width and length of the trench and to the exact grade as specified, so that the structure shall be uniformly and evenly supported across its footprint.

The control structure, as delivered to the site, shall be cast-in-place into the concrete foundation. Cast-in-place concrete, reinforcing, mixing, delivery and placement shall be carried out in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE**.

The structure shall be supported with adequate falsework so as to maintain the lines and grades shown on the plans, and to maintain those lines and grades without movement, until the concrete has reached the strength as specified herein.

Care shall be taken in the placement of the concrete so as not to splash concrete on the control structure. All concrete splashed on the structure shall be cleaned off immediately, to the satisfaction of the Engineer.

Contractor shall install the bottom stoplog as shown on the plans. All other stoplogs, slide gates, tiedowns, lock, grating, railing, and assembly tools shall be removed from the control structure prior to installation of the control structure in the concrete base. All of these items shall be re-installed after completion of structure installation.

Falsework, chairs, or supportive devices used in supporting the control structure in the formwork, and to be permanently incorporated in the concrete shall be of the same material and shall be considered as reinforcement. All such falsework, chairs, and supportive devices shall be approved by the Engineer prior to installation. No supportive devices shall protrude from the finished surface of the concrete, unless approved by the Engineer.

Culvert assembly and installation shall be carried out in accordance with the specification for **CULVERT AND PIPE INSTALLATION**.

301.33 CONCRETE CONTROL STRUCTURE INSTALLATION

The Contractor shall compact the in-situ material below the base elevation prior to assembly and erection of the structure. This bed shall be fully leveled and compacted throughout the full width and length of the trench and to the exact grade as specified, so that the structure shall be uniformly and evenly supported across its footprint.

The control structure shall be set or cast-in-place to the lines and grades shown on the plans. Reinforcement, stoplog channels, gate bolts and other items to be cast-in-place shall be installed as called for on the plans. Falsework, chairs, or supportive devices to be permanently incorporated in the concrete shall be of the same material and shall be considered as reinforcement. All such falsework, chairs, and supportive devices shall be approved by the Engineer prior to installation. No supportive devices shall protrude from the finished surface of the concrete unless approved by the Engineer.

The structure shall be finished in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE** and once completed, slide gates, stoplogs, grating or railing as specified in the plans shall be installed.

Any culvert or inlet/outlet pipe to be used in conjunction with a pre-cast or cast-in-place concrete control structure shall be installed according to the specification for **CULVERT AND PIPE INSTALLATION**. That portion of the culvert, which is to be embedded in the concrete, shall have a 1/2" thick butyl or mastic gasket between the culvert and concrete. The gasket shall meet the requirements of ASTM D1056 for "RE" closed all grades while the mastic shall meet AASHTO M190 Type "A" specification.

301.34 BACKFILL

If, in the opinion of the Engineer, the site-excavated material is unsuitable for backfill, the Contractor shall supply, from an assigned borrow area, suitable impervious backfill material. No granular backfill will be allowed unless approved by the Engineer. The payment for supplying this impervious fill shall be considered incidental to the water control structure installation.

If no compaction is specified on the plans or in the specifications the Contractor shall compact the backfill to in-situ conditions or embankment compaction requirements whichever is greater.

Initial backfill shall be deposited in horizontal, uniform layers not exceeding six (6) inches in thickness before compaction, and each layer shall be thoroughly compacted throughout to ensure thorough tamping of backfill around the structure and under the haunches of the pipe stubs. This is to be achieved by hand compaction for a distance of two (2) feet from the structure. Hand compaction of fill material shall be accomplished by the application of motor driven hand tampers or other approved equipment in such a manner that every point of the surface of each layer will be compacted. Each layer will be inspected and approved by the Engineer prior to proceeding with the next layer of fill.

After the above initial backfilling has been completed and approved, the remaining backfill, consisting of suitable site material, shall be placed in layers not exceeding eight (8) inches before compaction. Each layer shall be compacted by mechanical means to a density equivalent to that of the surrounding unexcavated material. Each layer will be inspected and approved by the Engineer prior to proceeding with the next layer of backfill.

No boulders, rock, ice, snow, organic material, or debris shall be permitted in the trench. This material will be classified as unsuitable material and treated as such.

Compaction equipment or methods that produce horizontal or vertical earth pressures which may cause excessive displacements or which may damage the installation shall not be used.

Backfill shall be executed to the lines and grades shown on the plans and as specified herein. No separate measurement shall be made for backfill. Compensation shall be included as payment for water control structures.

301.35 APPURTENANCE INSTALLATION

Any appurtenances to be used in conjunction with a water control structure shall be installed according to the specification for **STRUCTURE AND CULVERT APPURTENANCES**.

301.40 QUALITY CONTROL

301.41 WORKMANSHIP AND MATERIALS

All workmanship and materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Engineer including all operations from the selection and production of materials through to final acceptance of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto, notwithstanding any inspection or approval that may have been previously given. The Engineer reserves the right to reject any materials or works, which are not in accordance with the requirements of this specification.

301.42 ACCESS

The Engineer shall be afforded full access for the inspection and control testing of materials, both at the site of work and at any plant or borrow pit used for the supply of the materials, to determine whether the materials are being supplied in accordance with this specification.

301.50 METHOD OF MEASUREMENT

Water control structure installation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Water control structure installation shall be measured in the following manner:

1) Lump Sum (LS): Water control structure installation shall be measured on a lump sum basis of installed structure(s). No separate measurement of control structure(s) shall be made.
2) Each (EA): Water control structure installation shall be measured on an individual basis. Measurement shall be made for each structure installed.

No separate measurement shall be made for the excavation, installation, and removal of cofferdams, dewatering, backfill, compaction, assembly and installation of pipe. This work shall be considered incidental to the water control structure installation measurement described herein.

301.60 METHOD OF PAYMENT

The completed work for water control structures, measured as specified, shall be paid for at the contract unit price. The unit price bid for water control structures shall include the supply of all equipment, materials, labor and any other incidental items necessary to install water control structures as described in this specification and shown on the plans. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water.

302 STRUCTURE AND CULVERT APPURTENANCES

302.10 DESCRIPTION

The work shall include the supply of all labor, materials, equipment and any other incidental item necessary to complete the installation of appurtenances associated with water control structures and culverts as called for on the plans and/or specified herein. These appurtenances include but are not limited to:

a) Covers, lids and trash racks for water control structures
b) Stoplogs for water control structures
c) Water control gates for structures or culverts
d) T-sections for culverts
e) Fish screens for water control structures
f) Locking rods
g) Lifting hooks

This work shall include the installation of the various appurtenances to the associated water control structure or culvert. Work shall include all hardware necessary to install the appurtenance per manufacturer's recommendations or as specified on the plans or herein.

302.20 MATERIALS

302.21 SUPPLY OF MATERIALS

Unless otherwise specified, the Contractor shall supply all required appurtenances and those accessories recommended by the material manufacturer or required to complete installation of the appurtenance. All appurtenances shall be constructed as shown on the plans.

Corrugated metal pipe appurtenances and anti-seep diaphragms shall be of the same design, material and gauge as the water control structure or culvert it is attached to.

Unless otherwise specified on the plans, all appurtenances for concrete, fiberglass, HDPE, and PVC structures shall be constructed of aluminum. The minimum acceptable series for all structural aluminum, channels, angles, plates, rounds, etc. shall be 5000 Series, unless otherwise specified. All bolted connections shall utilize stainless steel bolts, nuts and washers, grade 18-8 or 304 or better.

With the exception of the water control gates, all appurtenances shall be of the same material and color as the associated water control structure unless otherwise specified on the plans or described herein. Painting shall consist of one shop coat of zinc base primer with two coats of alkyd enamel flat paint to both sides of the material.

302.22 HANDLING AND STORAGE OF MATERIALS

All materials shall be handled and stored in a careful and workmanlike manner to the satisfaction of the Engineer.

Any dents or damage caused by mishandling during transportation or installation shall not be allowed. The Contractor shall be responsible for replacement and reinstallation of damaged appurtenances at his/her own expense.

302.30 INSTALLATION

All appurtenances shall be installed per manufacturer's recommendations or as specified on the plans or herein. Water control gates shall be installed to provide a watertight seal with the culvert. The Contractor shall install the gate with all-necessary framework and hardware to allow efficient operation of the gate. Planking/grating, railing, and bracing shall be provided as shown on the plans or specified herein.

Anti-seep diaphragms and associated fittings shall be attached to the culvert at the stations shown on the plans. Diaphragms should be located midway between two adjacent seams or at least four feet from a field joint. Backfill operations shall be carried out as not to damage diaphragms.

302.40 QUALITY CONTROL

302.41 WORKMANSHIP AND MATERIALS

All workmanship and materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Engineer including all operations from selection and production of materials through the final acceptance of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto, notwithstanding any inspection or approval that may have been previously given. The Engineer reserves the right to reject any materials or works, which are not in accordance with the requirements of this specification.

302.42 ACCESS

The Engineer shall be afforded full access for the inspection and control testing of materials, both at the site of work and at any plant used for the supply of the materials, to determine whether the materials are being supplied in accordance with this specification.

302.50 METHOD OF MEASUREMENT

Appurtenances shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Appurtenances shall be measured in the following manner:

1) Incidental (INC): Supply and installation of the appurtenances shall be considered incidental to the construction and installation of the associated water control structure and no measurement shall be made. This shall apply when appurtenances is not listed on the Standard Bid Form.
2) Lump Sum (LS): Appurtenances shall be measured on a lump sum basis of installed appurtenances. No separate measurement shall be made for individual appurtenances.
3) Each (EA): Appurtenances shall be measured on an individual basis. Measurement shall be made for each appurtenance installed.

302.60 METHOD OF PAYMENT

The completed work for structure and culvert appurtenances, measured as specified, shall be paid for at the contract unit price. The unit price bid for structure and culvert appurtenances shall include supplying all materials, equipment, labor and any incidental items necessary to install appurtenances as described in this specification or shown on the plans.

303 CULVERT AND PIPE INSTALLATION

303.10 DESCRIPTION

The work of this section shall include the supply of all labor, materials and equipment required to complete the installation of all culverts with associated earthwork called for on the drawings and/or specified herein.

This work shall consist of excavation; cofferdams and dewatering; preparing the bed for the pipe; assembly of the pipe sections, installation of pipe sections; and backfill and compacting to the lines and grades shown on the drawings, as specified.

303.20 MATERIALS

303.21 SUPPLY OF MATERIALS

Unless otherwise specified, the Contractor will supply all materials necessary to complete the installation as shown on the plans or recommended by the material manufacturer.

All culverts and inlet and outlet pipes shall be of the diameter and length as shown on the plans. The pipe shall match the material and coating of the base riser unless otherwise specified on the plans. Unless otherwise specified, the pipe shall adhere to the aluminum corrugated metal specification as listed below. All materials supplied by the Contractor shall be subject to inspection by the Engineer.

The following specifications for each material type shall be adhered to.

1) Aluminum corrugated metal pipe. The minimum acceptable series for aluminum CMP shall be 3000 Series. The material shall meet the requirements of AASHTO M197.
   a) Pipe shall be close riveted or of a "lock seam" construction. Unless otherwise specified all pipes shall have a 2-2/3" x 1/2" corrugation. The gauge of the pipe shall be as follows unless otherwise specified on the plans:

Pipe Diameter	2-2/3" x ½" Corrugations Metal Thickness	3" x 1" Corrugations Metal Thickness
12"-21"	14	NA
24"-36"	12	14
42"-54"	10	12
60"-96"	8	10

   b) All welds shall be 3/16" fillets unless otherwise specified on the plans and shall conform to the Welded Joint Requirements of the latest edition of the AISC Manual. All bolted connections shall utilize stainless steel bolts, nuts, and washers, grade 18-8 or 304 or better.
2) Steel corrugated metal pipe. Where stated as acceptable on the plans, all steel CMP shall be made of galvanized or aluminized Type II steel. Galvanized steel corrugated metal pipe shall meet the composition requirements of AASHTO M218. The aluminized Type II steel shall conform to the requirements of AASHTO M274.

a) Pipe shall be close riveted or of a "lock seam" construction. Unless otherwise specified all pipes shall have a 2 2/3" x 1/2" corrugation. The gauge of the pipe shall be as follows unless otherwise specified on the plans:

Pipe Diameter	2-2/3" x ½" Corrugations Metal Thickness	3" x 1" Corrugations Metal Thickness
12"-21"	16	NA
24"-36"	14	16
42"-54"	12	14
60"-96"	10	12

b) Pipe made of galvanized or aluminized Type II steel shall be coated. This coating shall be a double bituminous coating (dipped or sprayed), or a 10 mil polymeric film laminate. The coatings shall be applied to both the inside and outside of the pipe. The bituminous coating shall be of double thickness and be in accordance with AASHTO M190 Type "A" Standard Specification. All spray coatings shall conform to AASHTO M243.

c) All welds shall be 3/16" fillets unless otherwise specified on the plans and shall conform to the Welded Joint Requirements of the latest edition of the AISC Manual.

3) Unless otherwise specified, all corrugated metal pipe connections shall be made utilizing the flange coupler as shown on the plans.

4) Where called for the plans, annular connecting bands shall be the same material and have the same coating, corrugations, and gauge as specified for the pipe that is to be connected.

a) The connecting bands shall be either 24" in width or have a minimum of nine (9) corrugations. The minimum circumferential overlap shall be six (6) inches. If helical pipe is used, a minimum of four (4) re-rolled annular corrugations shall be formed to allow the use of the annular overlapping connecting bands.

b) To provide for a watertight joint, a closed cell expanded gasket shall be used in conjunction with connecting band. The gasket shall be at least 24" in width, 3/8" thick, with an unstretched diameter ten (10) percent less than normal pipe size and shall comply with ASTM D1056, Grade SCE-43. Mastic shall be placed on each side of the gasket.

c) The binders for the connecting bands will consist of a minimum of 6 rods and tank lugs, three (3) per side, in accordance with the plans. The minimum rod diameter shall be 7/16" with ½" threads. All rods and lugs shall be stainless steel, grade 18-8 or 304 or better.

5) High Density Polyethylene (HDPE) Pipe. Where stated as acceptable on the plans, water tight HDPE pipe shall have a smooth interior and annular exterior corrugations. The pipe shall be approved by the Engineer and shall be of the length shown on the Plans.

a) The material shall meet the requirements of ASTM D3350 with a minimum cell classification 335420C.

b) The pipe shall incorporate a gasketed bell and spigot design. The gasket shall meet the requirements of ASTM F477 with a minimum watertight performance of 10.8 psi.

c) 12" to 48" HDPE pipe shall meet the requirements of AASHTO M294, Type S.

d) 54" and 60" HDPE pipe shall meet the requirements of AASHTO MP7.

e) 36" through 60" diameters shall have a reinforced bell and spigot. The gasket corrugation shall be reinforced with a closed cell structural foam core.

6) Pre-cast concrete pipe and box section culverts shall conform to the requirements of AASHTO M170 and AASHTO M273 respectively.

7) When called for on the plans, the Contractor shall supply to the site ready mix concrete, or site mix concrete in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE**. Forms, reinforcing steel or wire mesh, for the concrete pad for the control structure will be the responsibility of the Contractor. The installation of this concrete shall be considered incidental to the culvert installation and no separate measurement or payment shall be made for this work.

303.22 HANDLING AND STORAGE OF MATERIALS

All materials shall be handled and stored in careful and workmanlike manner to the satisfaction of the Engineer. Any dents or depressions as a result of storage and handling during transportation or installation shall not be allowed. The Contractor shall be responsible for replacement and reinstallation of the damaged pipe at his own expense.

303.30 CONSTRUCTION METHODS

303.31 CONTROL OF SURFACE/SUBSURFACE WATER

The Contractor is responsible for control of surface water, subsurface water, and drainage during the construction period. All temporary fills, crossings, and culverts necessary to promote drainage during construction will be installed and removed at the Contractor's expense prior to acceptance of the work. Any claims arising from upstream or downstream damages as a result of the construction or failure of these temporary works will be the Contractor's responsibility.

It is the responsibility of the Contractor to control the surface and sub-surface water and drainage in any excavation area, dewatering placement area and borrow area. Should material quality lessen through inadequate drainage, the Contractor may be directed by the Engineer to construct drainage facilities at the Contractor's expense.

303.32 EXCAVATION

The Contractor will be required to excavate the base to the lines of excavation and to a depth of the invert elevations as shown on the plans. Base excavation shall extend a minimum of three (3) feet or one pipe diameter, whichever is greater, beyond the ends and sides of the pipe, or pipes, and the excavation shall be transitioned to meet the existing channel slopes. If necessary, the excavation shall be dewatered in order to prevent disturbing the natural soil conditions at the base of the excavation and to allow the placing and compacting of the backfill material in the dry.

Cofferdams will be required for all excavations in active watercourse channels and in areas of ground water seepage. Cofferdams must be built to withstand all the forces to which they may be subjected and shall be located such as to give sufficient clearance for the construction of cutoff trenches and/or sump pits for dewatering unless otherwise provided. Cofferdam placement, maintenance and removal shall be the responsibility of the Contractor and shall be considered as incidental to the placement of the culvert.

Dewatering shall be accomplished by constructing cut-off trenches and sump pits around the outside perimeter of the pipe beds. These shall be excavated to a depth of no less than two (2) feet below the elevation of the base of the excavation. Trenches and sump pits shall be shored and braced with cribs as necessary. The Contractor will be required to provide sufficient pumping capacity to lower and maintain the ground water approximately one (l) foot below the base of excavation.

The excavated base shall be inspected by the Engineer prior to commencement of backfilling. If the Engineer deems further excavation to be required below the bottom of the excavation line shown on the plans and specified herein, the Contractor shall excavate such additional materials as directed by the Engineer. The work involved in doing this additional excavation will be classified as extra work and will be paid for as such.

The Contractor shall not over excavate below specified lines and grades. If, in the opinion of the Engineer, the Contractor over excavates material in an area, he shall replace at his expense the over excavated material with suitable site material and compact that material to a density equal to the surrounding in-situ material, or to the satisfaction of the Engineer.

Excavated material not required as backfill shall be classified as "surplus material" and will be dealt with as shown on the plans. Unless otherwise specified, disposal of surplus material shall be considered incidental to the bid item culvert and pipe installation.

No separate payment shall be made for excavation. Compensation shall be included as payment for the bid item culvert and pipe installation.

303.33 INSTALLATION OF AND ASSEMBLY OF CULVERTS

The Contractor, after preparation of the bed, shall assemble the pipe sections, progressively in accordance with the manufacturer's instructions or as directed by the Engineer.

All pipe supplied to the site shall be inspected prior to assembly, for chipping or damage in handling and shall be repaired as directed by the Engineer. Welding, drilling, bolting or otherwise attaching devices (temporary or permanent) to the structure to assist in structure installation is prohibited.

All materials damaged, distorted by more than five (5) percent of nominal dimensions, lost, broken or deemed unsuitable due to the Contractor's method of installation, handling or from neglect shall be replaced by the Contractor at his expense.

303.34 BACKFILL

All materials to be used for bed preparation and back fill will be suitable site material as approved by the Engineer. In the event that no suitable site material is available from designated borrow areas for the pipe installation, the Contractor shall supply suitable material from an approved borrow area. The payment for placing this fill will be classified as extra work and will be paid for as such. Material used for backfill from designated borrow areas will be installed per the details specified in the specification for **EMBANKMENT CONSTRUCTION**. No separate payment will be made for excavation and backfill.

The Contractor shall compact the in-situ material below the invert elevations prior to assembly and erection of the pipe. This bed shall be fully leveled and compacted throughout the full width and length of the trench and to the exact grade as specified, so that the barrel of the pipe shall be uniformly and evenly supported throughout its entire length.

Initial backfill shall be deposited in horizontal, uniform layers not exceeding six (6) inches in thickness before compaction, and each layer shall be thoroughly compacted throughout to ensure thorough tamping of backfill under the haunches and around the pipe. This is to be achieved by hand compaction for a distance of two (2) feet from the pipe circumference. Hand compaction of fill material shall be accomplished by the application of motor driven hand tampers or other approved equipment in such a manner that every point of the surface of each layer will be compacted. Each layer will be inspected and approved by the Engineer prior to proceeding with the next layer of fill.

After the above initial backfilling has been completed and approved, the remaining backfill, consisting of suitable site material, shall be placed in layers not exceeding eight (8) inches before compaction. Each layer shall be compacted by mechanical means to a density equivalent to that of the surrounding unexcavated material. Each layer will be inspected and approved by the Engineer prior to proceeding with the next layer of backfill.

No boulders, rock, ice, snow, organic material or debris shall be permitted in the trench. This material will be classified as unsuitable material and treated as such.

Compaction equipment or methods that produce horizontal or vertical earth pressures which may cause excessive displacements or which may damage the installation shall not be used.

Backfill shall be executed to the lines and grades shown on the plans and as specified herein. No separate measurement shall be made for backfill. Compensation shall be included as payment for culvert and pipe installation.

303.35 ROAD SURFACE AT CULVERT CROSSING

Any road material removed as necessary for the installation of the culvert shall be replaced with material of the same quality to the width, depth, consistency and compaction of existing road on each side.

303.40 QUALITY CONTROL

303.41 WORKMANSHIP AND MATERIALS

All workmanship and materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Engineer including all operations, from the selection and production of materials, to final acceptance of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Engineer reserves the right to reject any material or work that is not in accordance with the requirements of this specification.

303.42 ACCESS

The Engineer shall be afforded full access for the inspection and control testing of materials, both at the site of work and at any plant or borrow pit used for the supply of the materials, to determine whether the materials are being supplied in accordance with this specification.

303.50 METHOD OF MEASUREMENT

Culvert installation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Culvert installation shall be measured in the following manner:

1) Incidental (INC): Supply and installation of the culverts shall be considered incidental to the construction and installation of the associated water control structure and no measurement shall be made. This shall apply when culvert installation is not listed on the Standard Bid Form.
2) Linear Feet (LF): Culvert installation shall be measured on a linear foot basis. The linear feet measured shall be the actual bottom length of an installed culvert size group. No measurement shall be made for couplers.
3) Each (EA): Culvert installation shall be measured on an individual basis. Measurement shall be made for each culvert installed.

No separate measurement shall be made for the excavation, installation and removal of cofferdams, dewatering, backfill, compaction, assembly and installation of pipe. This work shall be considered incidental to the culvert installation measurement described herein.

303.60 METHOD OF PAYMENT

The completed work for culvert and pipe installation, measured as specified, shall be paid for at the contract unit price. The unit price bid for culvert and pipe installation shall include supplying all materials, equipment, labor and any incidental items necessary for the installation of culverts as described in this specification. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water.

304 CAST-IN-PLACE REINFORCED CONCRETE

304.10 DESCRIPTION

The work shall include the supply of all labor, materials, and equipment necessary to complete the construction of all cast-in-place concrete as shown on the plans and/or specified herein. The work shall include, but is not limited to the following:

a) Supply, erection and removal of all formwork

b) Supply and placement of reinforcement

c) Supply, placing and curing of concrete

d) Finishing of all concrete surfaces as specified

Unless otherwise specified herein or on the plans, the materials and work shall adhere to the requirements of the American Concrete Institute's "Specification for Structural Concrete", ACI 301-99.

304.20 MATERIALS

304.21 CEMENT

The cement shall be Portland Cement ANSI/ASTM C150, Type II A unless otherwise specified by or acceptable to the Engineer.

304.22 ADMIXTURES

All air-entraining agents shall conform to the specifications in ASTM C260. Use of calcium chloride shall not be allowed. Use of other admixtures shall only be allowed when approved by the Engineer. Approval will only be given when it is shown that the specified admixture will not affect the integrity of the concrete. Approved use of an admixture still requires concrete to meet specified slump, air and strength requirements.

304.23 WATER

Mixing water for concrete shall be fresh, clean, and potable.

304.24 AGGREGATES

Aggregates shall be free from dirt and organic material and shall meet the following gradation:

Aggregate Type	% Passing by Weight						
	1" Sieve	3/4" Sieve	1/2" Sieve	3/8" Sieve	#4 Sieve		
Coarse	100	90-100	20-55	0-15	0-5		
	3/8" Sieve	#4 Sieve	#8 Sieve	#16 Sieve	#30 Sieve	#50 Sieve	#100 Sieve
Fine	100	95-100	80-100	50-85	25-60	10-30	2-10

Aggregates will be inspected and approved by the Engineer prior to use.

304.25 REINFORCING STEEL

Reinforcing steel, except as otherwise specified, shall be deformed bars rolled from new billet stock, and shall conform to the requirements of ASTM A615, Grade 60. Sizes, details and locations of bars shall be as shown on the drawings and as may be specified herein.

All reinforcing steel shall be free of all dirt, scale, oil, grease, and other coating that may reduce bonding to concrete. The required reinforcing shall be of the size and grade specified on the plans.

304.26 STORAGE AND HANDLING OF MATERIALS

Cement shall be stored off the ground in a dry location at all times.

Aggregates shall be stored separately in a manner that will prevent segregating, mixing, and intrusions of foreign materials.

Reinforcement shall be stored on skids or racks off the ground.

304.30 CONSTRUCTION METHODS

All excavation and backfill associated with concrete structures shall be conducted in accordance with the specification for **EXCAVATION** and the specification for **WATER CONTROL STRUCTURES**.

304.31 WORKMANSHIP

Work shall be supervised by a competent foreman at all times and shall be performed by skilled and experienced workmen.

304.32 MIX REQUIREMENTS

All concrete shall be either site mix or ready-mix to achieve a 4,000 psi 28 day compressive strength, a 1 to 4 inch slump, and 4 to 6 percent air entrainment.

For the installation of corrugated metal pipe risers as described in the specification for **WATER CONTROL STRUCTURES**, the concrete used to pour the base shall have the following design mix:

PER CUBIC YARD DESIGN MIX

6 bags cement (Portland Cement ANSI/ASTM C50, Type IIA, 94 lb. ea.)

36 gallons water (adjust for moisture in aggregate)

2875 pounds of aggregates (38% fine aggregate)

Unless otherwise noted the Contractor shall submit a concrete mix design to the Engineer for all other concrete used in construction prior to the pouring of that concrete. Acceptance of this design by the Engineer does not relieve the Contractor's responsibility to meet above strength, slump or air requirements.

304.33 MIXING AND PLACING

The Contractor shall notify the Engineer two working days in advance of any concrete pour. This advance notice will allow the Engineer to schedule the concrete testing and inspection services. No concrete shall be poured without notification or approval of the Engineer.

Concrete shall be mixed only in quantities required for immediate use. Mixing procedures shall be approved by the Engineer prior to commencement. Water may be added on site by the Contractor as needed as long as slump and air requirements are met. Failure to adhere to these requirements may result in rejection of that batch. The minimum mixing time for all site batch mixes shall be 10 minutes and 75 revolutions for all mixes delivered by transit mixers. No concrete shall be placed in forms after mixing longer than 1-1/2 hours.

The concrete temperature shall be maintained between 50 ^{o}F to 90 ^{o}F during all phases of mixing and placement. When weather conditions will affect the concrete temperature it shall be kept within the stated range by methods approved by the Engineer.

Cold weather concreting procedures shall include but will not necessarily be limited to; preheating of forms and subgrade prior to pouring, heating of poured concrete for a minimum of 5 days and adequate protection of poured concrete during curing. Preheating of forms and subgrade as well as poured concrete shall be done in a manner to maintain temperatures between 50 ^{o}F and 90^{o}F. All procedures shall be outlined to the Engineer for approval prior to any concrete pour.

Hot weather concreting procedures shall include but will not necessarily be limited to; temperature control of concrete materials, wetting of subgrade, forms, and reinforcement prior to concrete placement and moist curing of poured concrete. All procedures shall be outlined to the Engineer for approval prior to any concrete pour.

Formwork, falsework, and reinforcing shall be inspected and approved by the Engineer prior to concrete placement. Earth surfaces shall be firm, moist, contain no frost or ice, and be free of debris. All formwork shall be oiled or moistened prior to concrete placement.

All reinforcement shall be accurately placed to the dimensions shown on the drawings and shall be secured in place by bar supports, spacers, chairs, wiring and nails. No welding of reinforcement shall be allowed. Bars shall be located so as to have the minimum concrete cover as shown on the drawings. Unless otherwise specified, the minimum cover shall be three inches at all times.

Where not otherwise shown or specified, bars in tension shall be lapped 36 diameters and bars in compression 24 diameters, but not less than twelve (12) inches in either case.

Bar supports and spacers shall be of steel or plastic and of suitable design and strength to hold the reinforcement accurately in place before and during the placing of concrete.

Footing reinforcement shall be supported on hychairs set on concrete blocks whose top surface is flush with the subgrade, or hung from supports above the forms with sufficient steel hangers. Steel in slabs on the ground shall be supported on hychairs to ensure its proper position in the slab. Hy chairs shall be set on concrete bricks or concrete blocks whose top surface is flush with the subgrade surface.

Shop drawings and reinforcing bar shop lists shall be submitted for approval by the Engineer prior to any pour.

Concrete shall be placed by hand, buggy, trough or suitable placement method. Concrete shall not be allowed to freefall more than five feet. Concrete shall be handworked or mechanically vibrated to achieve a dense, homogenous, structure free of cold joints and honeycombing. If cold joints are necessary in pouring a structure the Contractor shall install waterstops at all such joints. All exposed edges shall be chamfered as shown on the plans. All exposed concrete not in forms shall be sealed or closed by giving these areas a float finish prior to the final broom finish.

Formwork shall not be removed until the concrete has hardened adequately to prevent surface damage and support applied loads. Forms shall remain on poured structures a minimum of 3 days unless otherwise directed by the Engineer. For cold weather concrete pours, forms shall remain on poured structures for a minimum of 5 days, unless otherwise directed by the Engineer. Under no circumstances shall backfilling occur prior to the minimum required days listed above.

304.34 FINISHING

All minor surface defects, small honeycomb areas, or broken edges shall be repaired using a drypack mortar consisting of 1 part cement and 2-1/2 parts of fine sand. Exposed steel forming ties shall be removed to a depth of one (l) inch below the planned concrete surface and the surface defect repaired with a dry pack mortar. All repairs shall be done in an efficient and timely manner after formwork is removed. Any necessary repairs shall be made prior to application of the concrete finish coat.

All exposed concrete surfaces shall have a grout cleaned or sack rubbed finish per ACI 301-99 or have two (2) coats of a cement-based waterproofing finish, approved by the Engineer, applied. This finish shall extend to a minimum of six (6) inches below the finished backfill lines.

Concrete shall be cured by means of waterproof paper, polyethylene or placement compound. Curing treatment shall be applied after concrete surfaces are finished.

304.35 TESTING

Unless otherwise specified, the Engineer or Engineer's representative will perform concrete testing during the course of the work to determine if specifications have been met. Testing shall include slump and air content measurements. Failure to meet specified requirements will mean rejection of that batch. In addition, four cylinders shall be made for compressive strength tests. Cylinders shall be taken randomly during a pour. Until notification by the Engineer, all cylinders shall be stored as close to the placed concrete as possible and covered from, or exposed to, the elements in the same manner as the placed concrete.

One cylinder shall be tested at 7 days and two at 28 days to determine the compressive strength. If either of the 28-day specimens fails to achieve 4000 psi, the fourth cylinder will be tested at 56 days and must achieve 4000 psi. If both cylinders achieve 4000 psi at 28 days, the fourth cylinder may be discarded. Failure of a cylinder to meet the specified strength for any pour shall require the removal of the concrete. In the event that the concrete does not meet the required strength, the Contractor may attempt to show that the placed concrete meets the specifications. This would require that the Contractor, at their own expense, hire a private, licensed concrete testing firm to perform an in-situ test. The firm and the method must be approved by the Engineer.

304.40 METHOD OF MEASUREMENT

Reinforced concrete shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Reinforced concrete shall be measured in the following manner:

1) Lump Sum (LS): Reinforced concrete shall be measured on a lump sum basis of placed concrete. No separate measurement of volume shall be made.
2) Cubic Yards-Plan Quantity (CY-P): Reinforced concrete shall be measured on a plan quantity basis. The quantity shall be the neat line volume of placed concrete calculated from the construction plans.

3) Cubic Yards (CY): Reinforced concrete shall be measured on a volume basis. The volume shall be the actual number of cubic yards of concrete placed. The volume shall be measured in the field using load tickets from the concrete supplier. No measurement for excess or wasted concrete shall be made.

No separate measurement will be made for reinforced concrete placed as a base for water control structures. The concrete shall be considered incidental to those bid items.

304.50 METHOD OF PAYMENT

The completed work for cast-in-place reinforced concrete, measured as specified, shall be paid for at the contract unit price. The unit price bid for cast-in-place reinforced concrete shall include supplying all materials, equipment, labor and any incidental items necessary for performing all concrete installation operations described in this specification.

305 RIPRAP, REVETMENT & AGGREGATE PLACEMENT

305.10 DESCRIPTION

This work shall consist of supply and placement of rock riprap, filterstone, concrete revetment or other aggregate as protective covering along the side slopes, bases of channels, slopes around culverts, and on embankments or such other places as may be indicated on the plans, as specified herein, or as directed by the Engineer.

305.20 MATERIALS

305.21 BEDDING MATERIAL

Where called for on the plans and unless otherwise specified, material used for bedding shall be well-graded sand and gravel with the following gradation:

Percent (%) Passing by Weight				
3" Sieve	1" Sieve	1/2" Sieve	#4 Sieve	#100 Sieve
100	75-85	45-65	15-35	0-15

The bedding material shall be from a source approved by the Engineer.

305.22 FILTER FABRIC

Unless otherwise specified, filter fabric shall be utilized in the installation of all riprap and revetment. The filter fabric shall be a nonwoven polyester or polypropylene geotextile. This geotextile shall have a minimum grab tensile strength of 150 pounds as determined by ASTM D4632. The geotextile shall have a maximum opening size equivalent to a #70 U.S. standard sieve.

The contractor shall supply all pins and other items necessary to fasten the filter fabric to the ground so it will not slide or form gaps when placing rock riprap.

All materials shall be handled and stored in a careful and workmen-like manner to the satisfaction of the engineer.

For concrete revetment, the geotextile shall be bonded to the base of the concrete block mats with an overlap of two to three feet incorporated on one end and one side adjacent to each other.

305.23 RIPRAP

The contractor shall supply rock, which will consist of fieldstone or rough, unhewn quarry rock. Stone containing shale, sandstone, or other material that will disintegrate readily shall not be used. Class designations shall be based on the following gradations:

Riprap Class	Percent of Total Weight Smaller Than Given Size						
	30"	24" 18" 12"	9"			6"	3"
Class I	100	100	100	100	100	35-80	0-20
Class II	100	100	100	50-75	10-50	0-10	
Class III	100	100	50-75	10-50	0-10		
Class IV	100	85-100	60-80	20-40		0-20	

If the rock riprap class de signation is not specified on the construction plans, CLASS I rock riprap shall be acceptable. The rock shall be approved by the Engineer prior to installation.

305.24 CONCRETE BLOCK REVETMENT

Concrete block revetment systems shall be supplied in a manner that meets the requirements as specified on the plans. Unless othe rwise specified, the concrete shall be i n accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE.** The cabl es shall be stainless steel aircraft cable of Type 302 or 304 stainless and of Type 1 x 19 construction. Stainless steel clamps of the type and number recommended by the revetment manufacturer shall be provided. Anchors shall be provided in accordance with the manufacturer's recommendations.

305.25 OTHER AGGREGATE

Any other aggregate a s called for on the plans shall be supplied in a manner that meets the gradation as specified on the plans. The rock shall be approved by the Engineer prior to installation.

305.30 CONSTRUCTION METHODS

305.31 SUBGRADE PREPARATION

The areas on which the rock, revetme nt or other aggreg ate is to be placed shall be graded to the lines shown on the plans. The soil surface shall be smooth and free from any obstructions to provide adequate contact area between the soil and the bedding material or filter fabric.

305.32 BEDDING MATERIAL

When called for on the plans, a six (6) inch layer of bedding material shall be placed as shown prior to the placing of any riprap or revetment.

305.33 FILTER FABRIC

The filter fabric shall be placed under al l riprap in such a way that there is adequate contact area between the soil and the fabric. Installation shall start on the downstream end of the slope. Pins shall be installed to prevent the filter fabric from sliding or f orming gaps during installation of the filter material and placement of the rock riprap.

When filter fabric is to be placed on a slope, an anchor trench shall be constructed on the top of the slope and a toe trench shall be constructed on the low er end of the installation. The trenches shall be perpendicular to the slope and must be at least one foot wide and one foot deep. The filter fabric shall be placed in the anchor trench and the toe trench. The trenches shall be backfilled and co mpacted to adequately anchor the filter fabric.

Where a seam is needed to provide a continuous coverage of the f ilter fabric, the two pieces of filter material shall be overlapped a minimum of two feet. Pins shall be placed in the overlap area to prevent slipping during placement of the filter material and rock riprap.

Great care shall be taken to protect the filter fabric from damage either from the wheels or tracks or any sliding caused by the equipment.

The fabric shall not be exposed to the sun for more than seven days. If the fabric meets the requirements of ASTM D4355, less than 30% strength loss at 500 hours, the maximum exposure shall be 30 days.

305.34 RIPRAP

Riprap shall be placed by equipment capable of controlling the drop of the rock riprap. The maximum drop of the rock shall be three (3) feet. Pushing or rolling rocks over the geotextile will not be allowed. Placement will be in such a manner that the smaller stones will be uniformly distributed throughout the mass. Sufficient handwork shall be done to provide a neat and uniform surface, with the depth being specified herein and as shown on the plans. The surface may not vary from the theoretical surface by more than 4" at any point for riprap, unless otherwise specified.

305.35 CONCRETE BLOCK REVETMENT

The concrete revetment mats shall be laid from the downstream end of the project to the upstream end to ensure the geotextile joints are shingled to direct flow over the joint and prevent undermining. The gaps between each mat shall not be greater than two (2) inches or they shall be filled using a grout mixture as recommended by the manufacturer. The outside edges of the mat system shall be entrenched and buried at least one block into the ground. After installation of the mat system, the top surface shall be covered with topsoil and seeded, if specified on the plans.

305.36 OTHER AGGREGATE

Upon completion and approval of the subgrade preparation by the Engineer, the aggregate shall be placed and compacted on the prepared subgrade to the dimensions shown on the plans. The location and method of placement shall be shown on the plans. Equipment used for placement operations shall be approved by the Engineer.

305.40 METHOD OF MEASUREMENT

Riprap, revetment and aggregate placement shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Riprap, revetment and aggregate placement shall be measured in the following manner:

1) Lump Sum (LS): Riprap revetment and aggregate placement shall be measured on a lump sum basis of placed riprap. No measurement for volume or weight shall be made.
2) Square Yard (SY): Riprap, revetment and aggregate placement shall be measured on a square yard basis. The quantity shall be the neat line measured quantity of the finished surface completed and accepted in-place, at the specified thickness. No separate measurement shall be made for excess riprap or aggregate.
3) Cubic Yard - Plan (CY-P): Riprap and aggregate placement shall be measured on a cubic yard-plan basis. The quantity shall be the neat line quantity of installed riprap material calculated from the construction plans. No separate measurement shall be made for excess riprap or aggregate.
4) Ton (TN): Riprap and aggregate placement shall be measured on a ton basis. The measurement shall be made by the collection of weight tickets from the supplier and shall be based on the short ton. Measurement shall be based on the actual amount of placed riprap or other aggregate. No measurement shall be made for excess rock.

No separate measurement shall be made for the filter fabric or bedding material used in the riprap placement. The supply and installation of these materials shall be considered incidental to the riprap placement.

305.50 METHOD OF PAYMENT

The completed work for riprap, revetment and aggregate placement, measured as specified, shall be paid for shall be paid for at the contract unit price. The unit price bid for riprap, revetment and aggregate placement shall include supplying all materials, equipment, labor, and any incidental items necessary for performing all riprap and aggregate installation operations described in this specification.

306 TOE DRAIN INSTALLATION

306.10 DESCRIPTION

The work shall include the supply of all labor, materials, and equipment necessary to complete the toe drain installation as shown on the plans and/or specified herein. The work may include, but is not limited to:

a) Trench excavation

b) Supplying and installing a drainage medium

c) Supplying and installing geotextile fabric, pipe and fittings

306.20 MATERIALS

306.21 DRAINAGE MEDIUM

The drainage medium shall be filter sand meeting the gradation requirements of ASTM C33 - Concrete Sand Gradation Requirements:

% Passing by Weight					
3/8" Sieve	#4 Sieve	#16 Sieve	#50 Sieve	#100 Sieve	#200 Sieve
100	95-100	45-80	10-30	2-10	Less than 5

306.22 PIPE & FITTINGS

The collector pipe shall be perforated polyvinyl chloride (PVC) pipe with a geotextile wrap as described below. The discharge pipe shall be non-perforated PVC pipe. The collector and discharge pipe shall meet the requirements of AASHTO M278.

306.23 GEOTEXTILE FABRIC

The filter fabric shall be a nonwoven polyester or polypropylene geotextile. This geotextile shall have a minimum grab tensile strength of 90 pounds as determined by ASTM D1682. The geotextile shall have an equivalent opening size between a #40 - #100 U.S. standard sieve.

The fabric shall not be exposed to the sun for more than seven days. If the fabric meets the requirements of ASTM D4255, less than 30% strength loss at 500 hours, the maximum exposure shall be 30 days.

306.30 METHOD OF CONSTRUCTION

306.31 TRENCH EXCAVATION

The trench shall be excavated to the dimensions and elevation shown on the plans by a method approved by the Engineer. Where excavations shall be carried out through soft or saturated soil conditions, bracing and shoring of the trench, excavating flatter side slopes, or other method of stabilizing the side slopes may be necessary. In no instance shall the trench remain open at the end of a working day.

306.32 DRAINAGE MEDIUM

The filter sand used as a drainage medium shall be placed in the loose lifts not greater than 12" and compacted to a minimum relative density of 70% as determined by ASTM D4253 and ASTM D4254. A drainage medium is only required for the collector pipe.

306.33 COVER MATERIAL

Material placed over the drainage medium shall be designated on the plans and compacted as required in the construction specification for that material.

306.34 COLLECTION AND DISCHARGE PIPE

The collection and discharge pipe shall be installed in the excavated trench on stable material. If material stability is questionable the Engineer will require coarse material placed as a foundation for the pipe. Backfill material shall be embankment material compacted to 95% of standard proctor.

306.40 METHOD OF MEASUREMENT

Toe drain installation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Toe drain installation shall be measured in the following manner:

1) Lump Sum (LS): Toe drain installation shall be measured on a lump sum basis of installed toe drain. No separate measurement shall be made for trench excavation, drainage medium, or collection and discharge pipe.
2) TRENCH - Linear Feet (LF): Trench excavation shall be measured on a linear foot basis. The quantity shall be the actual linear feet of trench excavation parallel to the embankment. No measurement for volume of material excavated or excess trench excavation shall be made.
3) DRAINAGE MEDIUM
   a) Lump Sum (LS): Drainage medium shall be measured on a lump sum basis of installed medium. No separate measurement shall be made for volume of medium used or excess drainage medium.
   b) Cubic Yards - Plan Quantity (CY-P): Drainage medium shall be measured on a plan quantity basis. The quantity shall be the neat line cubic yard measurement of installed drainage medium. No measurement shall be made for drainage medium installed above and beyond the lines and grades shown on the construction plans.
4) PIPE - Linear Feet (LF): Pipe shall be measured on a linear foot basis. The quantity shall be the actual linear feet of installed pipe parallel and perpendicular to the embankment. No measurement for excess pipe material shall be made.

306.50 METHOD OF PAYMENT

The completed work for toe drain installation, measured as specified, shall be paid for at the contract unit price. The unit price bid for toe drain installation shall include supplying all materials, equipment, labor and any incidental items necessary for performing all toe drain installation operations described in this specification. No payment shall be made for dewatering or the control and drainage of surface/sub-surface water. No payment for excavation of suitable material will be made when excavating in a designated borrow area to obtain material that is to be placed, measured and paid in accordance with the specification for **EMBANKMENT CONSTRUCTION** .

307 SHEET PILING

307.10 DESCRIPTION

The work in this section shall consist of furnishing and installing the specified kinds and types of sheet piling at the location(s) shown on the plans. This shall include the furnishing of all labor, materials, tools, equipment, transportation, and any incidental items required to provide and install the sheet piling. This shall also include delivery of the sheet piling to the project site and removal of excess sheet piling from the project site.

307.20 MATERIALS

Sheet pile material shall be made of new, standard ASTM A36 grade steel, and be of the sections shown or specified on the plans. Alternate sheet piling may be used if approved by the Engineer and if it has a thickness and section modulus equal or greater than that specified on the plans. The sides of each piling shall be furnished with an interlock that is continuous for the full length of the pile. The interlock shall have an opening of sufficient width to allow free slippage of the adjoining sheet pile.

Sheet pile dimensions and weight variations shall be within the tolerances as shown on the plans. Unacceptable sheet pile shall not be driven.

A sufficient amount of sheet piling shall be provided to construct a structure of the dimensions shown on the plans. If an alternate sheet pile section is approved for use by the Engineer, then structure width dimensions may vary slightly. This variance (plus or minus) may not equal more than one section width of the original specified section. In addition, it is the Contractor's responsibility to ensure that the specified structural steel will fit the alternate sheet piling.

307.30 SHIPPING

Sheet pile material shall be obtained and supplied to the project site in a timely manner. Piling shall be handled in such a manner as to ensure no injury to the pile.

307.40 DRIVING

307.41 EQUIPMENT

The Contractor shall provide the necessary driving equipment that is capable of driving the specified sheet pile to the depth and alignment shown based on the soils information provided and knowledge of equipment capability.

Driving hammers may be drop, single acting, double acting, diesel, vibratory, or as approved by the Engineer. Regardless of the type of hammer utilized, the energy developed by the hammer shall be of sufficient energy to adequately drive the sheet pile without damaging it.

Pile driver leads shall be of a type that will hold the pile and pile hammer in proper alignment during the driving operations and shall be long enough to preclude the necessity for the use of punches or chasers. Leads for drop hammers shall be steel or steel shod. Generally, the recommendations of the pile hammer manufacturer shall be followed with respect to pile leads.

Piles shall be protected at all times from damage during driving. This shall include but is not limited to the use of suitable caps, rings, heads, blocks, and mandrels. A driving cap shall be used at all times and the heads of the steel piles shall be cut square to accept this cap. It will be the Contractor's responsibility to provide those items (driving heads, mandrels, etc.) necessary to drive special types of piles per pile manufacturer's recommendations.

307.42 DRIVING

The piling shall be driven in such a manner as to ensure perfect interlocking throughout the entire length of each pile. The piles shall be held in proper alignment during driving by means of assembling frames or other suitable temporary guide structures. Temporary guide structures shall be removed when they have served their purpose.

All piles shall be driven to the depth shown or specified on the plans unless directed by the Engineer in the field. If a pile hits refusal prior to reaching the required depth and can no longer be driven without damage to the pile or driving it out of alignment then driving of the pile shall cease. Refusal shall be determined by inability of driving equipment to drive a pile more than one inch with four blows of the driving hammer operating at normal capacity. If a pile is starting to deform or move out of alignment prior to determining if it has hit refusal then driving shall also cease.

If it appears that a pile has encountered a boulder or some other obstruction within the first five feet of driving then the pile shall be pulled and the area excavated. The obstruction shall be removed if possible with the excavation backfilled and compacted prior to re-driving of the pile. If the obstruction cannot be removed then the excavation shall be backfilled and re-compacted with the pile re-driven to the obstruction unless the Engineer directs otherwise. In all cases of refusal the undriven portion of sheet pile shall be cut at shown or specified elevations and saved on site for inspection and measurement by the Engineer prior to removal of this material from the site by the Contractor.

Under no circumstances shall the top of the pile vary from the design centerline alignment by more than one inch (horizontal or vertical).

307.43 PILE CUTOFF

The Contractor shall cut the piles off at the elevations shown or specified on the plans. The head of each pile, after cutoff, shall be sound, undamaged material. The length of cutoff shall be sufficient to permit the removal of all damaged material.

307.44 DEFECTIVE PILES

Any pile damaged, driven out of its proper location, driven below the specified cutoff elevation or inaccurately cut off shall be corrected by one of the following methods, whichever is approved by the Engineer in the field.

a) The defective pile shall be pulled and replaced or re-driven.

b) A new pile shall be driven adjacent to the defective pile.

c) The defective pile shall be spliced or built up or a sufficient portion of the footing shall be extended to properly embed the pile.

All piles pushed up due to the driving of adjacent piles or by any other cause shall be driven down again to their specified elevation. Any sheet pile ruptured in the interlock, or otherwise damaged during driving, shall be pulled and replaced.

307.45 CORRECTIVE SURFACE HEAVE

Any excess material resulting from displacement of earth by pile driving shall be removed. Materials disturbed by pile driving shall be reconditioned and compacted to a density equal to that of the adjacent undisturbed material.

307.50 METHOD OF MEASUREMENT

Sheet piling shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Sheet piling shall be measured in the following manner:

1) Lump Sum (LS): Sheet piling shall be measured on a lump sum basis of furnished and installed sheet pile material. No separate measurement shall be made for square feet of sheet pile material installed.
2) Square Feet - Plan Quantity (SF-P): Sheet piling shall be measured on a plan quantity basis. The quantity shall be the neat line square feet of sheet pile material furnished and installed to design depths as measured from the construction plans.

The measurement for sheet piling shall be reduced for that amount of sheet pile material not driven to design depths. No separate measurement shall be made for installation of sheet pile material driven past design depths.

307.60 METHOD OF PAYMENT

The completed work for sheet piling, measured as specified, shall be paid for at the contract unit price. The unit price bid for sheet piling shall include supplying all materials, equipment, labor and any incidental items necessary for performing all sheet pile operations described in this specification or shown the plans.

308 STEEL PILING

308.10 DESCRIPTION

The work shall consist of furnishing all labor, materials, tools, equipment and any incidental items necessary to drive steel piling as called for on the plans. Any non-driven piling shall be structural steel and paid for as such.

308.20 MATERIALS

All steel piles shall be made of ASTM A36 structural steel. Steel piles shall consist of shapes of the section provided on the plans or approved by the Engineer.

308.30 CONSTRUCTION METHODS

308.31 HANDLING

Piling shall be handled in such a manner as to ensure no injury to the pile.

308.32 EQUIPMENT FOR DRIVING

The pile hammer selected for a particular job shall conform to the minimum ram weight and energy requirements specified as follows:

a) If a gravity hammer is used for driving, it is preferable to use a heavy hammer and operate with a short drop. The maximum height of a drop shall be ten feet.

b) The Contractor shall furnish the Engineer with the manufacturer's specifications and catalog for all steam or air hammers used, showing all data necessary for computing the bearing value of piles driven. Gravity or drop hammers shall be weighed in the presence of the Engineer, or a certificate of weight shall be furnished to the Engineer. Hammers so weighed shall have the exact weight stamped on them.

When necessary to protect the pile against damage during the driving, the top of the pile shall be equipped with a driving cap of adequate size and type. A shock block of approved type and size shall also be used on the upper side of the driving cap, when necessary. Generally, the recommendations of the pile hammer manufacturer shall be followed with respect to driving caps and shock blocks.

Pile driver leads shall be of a type that will hold the pile and pile hammer in proper alignment during the driving operations, and shall be long enough to preclude the necessity for the use of punches or chasers. Leads for drop hammers shall be steel or steel shod. Generally, the recommendations of the pile hammer manufacturer shall be followed with respect to pile driver leads.

308.33 DRIVING

The Contractor shall notify the Engineer two working days in advance before beginning any pile driving operations and shall provide the necessary cooperation for determining the bearing capacity. This advance notice will allow the Engineer to schedule any testing and inspection services. No piles shall be driven without notification or approval of the Engineer.

In order to reach minimum depth, and if approved by the Engineer, water jetting and/or pre-boring shall be done. Pre-boring may be done with a power auger and/or steel mandrel (spud).

All piles shall be installed full length to plan alignments and grades.

308.34 PILE CUTOFF

After being driven the piles shall be cut off at the elevations shown on the plans. The head of each pile, after cutoff has been made, shall be sound, undamaged material. When a cap is used, the top of each pile shall be cut off so as to provide uniform bearing for the cap without the use of shims or fills.

308.35 DEFECTIVE PILES

Any pile damaged, driven out of its proper location, driven below the specified cutoff elevation or inaccurately cut off shall be corrected by one of the following methods, whichever is approved by the Engineer in the field.

a) The defective pile shall be pulled and replaced or re-driven.

b) A new pile shall be driven adjacent to the defective pile.

c) The defective pile shall be spliced or built up or a sufficient portion of the footing extended to properly embed the pile.

All piles pushed up by the driving of adjacent piles or by any other cause shall be driven down again to their specified elevation.

308.40 PILE PERFORMANCE

Substantial refusal shall be considered to be a penetration of 1/8" per blow. The piles shall be driven to substantial refusal or to the bottom tip elevation shown on the plans, whichever comes first. Where a bearing is specified on the plans, the pile shall be driven to that bearing or substantial refusal, whichever comes first.

308.50 METHOD OF MEASUREMENT

Steel piling shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Steel Piling shall be measured in the following manner:

1) Lump Sum (LS): Steel piling shall be measured on a lump sum basis of furnished and installed steel piles. No separate measurement shall be made for linear feet of steel piling furnished and installed.

2) Linear Feet-Plan Quantity (LF-P): Steel piling shall be paid on a plan quantity basis. The quantity shall be the neat line linear feet of steel piling furnished and installed as measured from the construction plans. No separate measurement shall be made for excess steel piles ordered to assist in driving operations.

No separate measurement shall be made for steel piles furnished and installed below design depths.

308.60 METHOD OF PAYMENT

The completed work for steel piling, measured as specified, shall be paid for at the contract unit price. The unit price bid for steel piling shall include supplying all materials, equipment, labor, and any incidental items necessary for performing all steel piling operations described in this specification or shown on the plans.

309 STRUCTURAL STEEL

309.10 DESCRIPTION

The work of this section will cover the fabrications, supply and placement of the structural steel portions of the project. The work shall consist of supplying all labor, materials and equipment required to furnish and install catwalk, catwalk frame, stoplog channels, bracing, grating and sheet piling cap, all non driven H-pile, and all other structural steel frames shown on the plans.

309.20 MATERIALS

Catwalk metal grating shall be of the dimensions and type as shown on the plans. The grating shall be painted and attached to the structural steel frame as per the manufacturer's recommendations. Where aluminum catwalk grating has been specified, the aluminum shall be isolated from the steel at all points of contact in a manner acceptable to the Engineer.

All structural channels, angles, and plates specified shall be ASTM A36 steel.

Unless otherwise specified, handrail shall be 2" x 2" x 3/16" structural tubing or 1" schedule 80 steel pipe welded and painted.

Fasteners, bolts and anchors shall be ASTM A36 steel.

Arc-welding electrodes shall conform to the requirements of the American Welding Society Specifications for Iron and Steel Arc Welding Electrodes, latest edition.

309.30 FABRICATION

Fabrication shall be shown on the drawings. Weld all contact edges with a continuous 1" fillet weld. The technique, appearance and quality of all welds made shall conform to the American Welding Society code for Arc-Welding in Building Construction.

Shop drawings and a materials list shall be submitted for approval by the Engineer.

309.40 PAINTING

The catwalk, handrails, bracing, grating and miscellaneous steel shall be given one shop coat of zinc base primer and one coat of zinc base primer after erection is completed. Apply two coats of alkyd enamel flat black paint to all exposed structural steel surfaces. The non-driven H-piles, sheet piling cap and stoplog channels need not be painted.

309.50 METHOD OF MEASUREMENT

Structural steel shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Structural steel shall be measured in the following manner:

1) Incidental (INC): Supply and installation of the structural steel shall be considered incidental to the construction and installation of the associated water control structure and no measurement shall be made. This shall apply when structural steel is not listed on the Standard Bid Form.

2) Lump Sum (LS): Structural steel shall be measured on a lump sum basis of constructed structural steel. No separate measurement for pounds of steel required to construct the structural steel portion of a project shall be made.

3) Each (EA): Structural steel shall be measured on an individual structure basis. Measurement shall be made for each structure comprising the project and no separate measurement shall be made for pounds of steel used in construction.

No separate measurement shall be made for excess material used to construct design structures.

309.60 METHOD OF PAYMENT

The completed work for structural steel, measured as specified, shall be paid for at the contract unit price. The unit price bid for structural steel shall include supplying all materials, equipment, labor and any incidental items necessary for performing all structural steel operations described in this specification or shown on the plans.

311 REMOVAL OF EXISTING CULVERTS AND STRUCTURES

311.10 DESCRIPTION

The work of this section shall include the excavation, removal, cleaning, and stockpiling of culverts and structures designated to be removed.

311.20 CONSTRUCTION METHODS

311.2l EXCAVATION

Excavation shall be performed in a workmanlike manner, approved by the Engineer, to prevent damage to salvageable material.

311.22 DISMANTLING AND REMOVAL

The material shall be dismantled and removed in a careful and workmanlike manner. Equipment or facilities that may damage portions of the material shall not be used. Any salvageable material damaged by the Contractor, during the removal operation, by neglect or poor workmanship, shall be replaced or paid for by the Contractor. All salvageable material shall be cleaned, sorted and stored in an area designated by the Engineer. The Contractor shall prepare a list of all salvaged material.

311.23 DISPOSAL OF MATERIAL

All salvageable material shall be handled carefully to avoid damage. All material shall be piled neatly at a location, on site, as directed by the Engineer. All salvageable material shall become the property of the Corporation and shall not be used by the Contractor for any of his construction operations. Non-salvageable materials shall become the property of the Contractor and removed from the site.

311.30 METHOD OF MEASUREMENT

Removal of existing culverts and/or structures shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Removal of existing culverts and/or structures shall be measured in the following manner:

1) Lump Sum (LS): Removal of existing culverts and/or structures shall be measured on a lump sum basis of removed culverts and/or structures.
2) Each (EA): Removal of existing culverts and/or structures shall be measured on an individual basis. Measurement shall be made for each existing culvert or structure removed.
3) Linear Feet (LF): Removal of existing culverts and/or structures shall be measured on a linear foot basis. Measurements shall be made for each linear foot of existing culvert and/or structure removed.

311.40 METHOD OF PAYMENT

The completed work for removal of existing culverts and/or structures, measured as specified, shall be paid for at the contract unit price. The unit price bid for removal of existing culverts and/or structures shall include supplying all materials, equipment, labor and any incidental items necessary for performing removal and salvage operations described in this specification or shown on the plans. No separate payment shall be made for disposal of removed culverts and/or structures.

312 TILE DRAIN LOCATION AND REMOVAL

312.10 DESCRIPTION

The work of this section shall include the location, identification and removal of all tile drains within the project site.

312.20 CONSTRUCTION METHODS

312.21 EXPLORATION

Tile exploration and location shall be performed in a manner approved by the Engineer. Unless otherwise specified on the plans, the minimum depth of exploration shall be five (5) feet. The Contractor shall be responsible for reporting to the Engineer the size, location, elevation, type and number of tiles found.

312.22 EXCAVATION

Excavation shall be performed in a workmanlike manner, approved by the Engineer. Excavation shall be performed as shown on the plans.

312.23 REMOVAL AND BLOCKAGE OF EXISTING TILES

All individual subsurface drain lines shall be broken and surface inlets shall be removed. The length removed shall be sufficient to prevent any drainage influence from the tile. This length will vary based on the site conditions. The minimum length removed shall range from fifty (50) feet in heavy clay soil to one hundred (100) feet in sandy or organic soils.

Tile removal from beneath any proposed berm, dike, or levee shall occur in the following manner:

1) When both an inside borrow ditch and an outside borrow ditch are utilized, the entire length of tile, from the inside toe of the inside borrow ditch to the outside toe of the outside borrow ditch, shall be removed.
2) When only an inside borrow ditch is utilized, the entire length of tile, from the inside toe of the inside borrow ditch to twenty (20) feet beyond the outside toe of the berm, shall be removed.
3) When only an outside borrow ditch is utilized, the entire length of tile, from twenty (20) feet inside the inside toe of the berm to the outside toe of the outside borrow ditch, shall be removed.
4) When borrow ditches are not utilized, the entire length of tile, from twenty (20) feet inside the inside toe of the berm to twenty (20) feet beyond the outside toe of the berm, shall be removed.

312.24 DISPOSAL OF MATERIAL

All salvageable material shall be handled carefully to avoid damage. All material shall be piled neatly at a location, on site, as directed by the Engineer. All salvageable material shall become the property of the Corporation and shall not be used by the Contractor for any construction operations. Non-salvageable materials shall become the property of the Contractor and shall be removed from the site.

312.30 METHOD OF MEASUREMENT

Location and/or removal of existing tile drains or structures shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Location and/or removal of tile drains shall be measured in the following manner:

1) Lump Sum (LS): Removal of existing drain tiles and/or structures shall be measured on a lump sum basis of removed drain tiles and/or structures.
2) Each (EA): Removal of existing tile drains shall be measured on a per unit basis. The measurement will be the number of drains found and removed from toe to toe of the proposed dike.
3) Linear Feet (LF): Removal of existing tile drains shall be measured on a linear foot basis. The measurement will be the actual linear feet of tile drains removed.
4) Linear Feet – Exploration (LF-EXP): When specified as "Exploration" only, exploration for existing tile drains shall be measured on a linear foot basis. The measurement will be total linear distance in feet of exploration conducted.

312.40 METHOD OF PAYMENT

The completed work for tile drain location and removal, measured as specified, shall be paid for at the contract unit price. Due to the unknown quantity of tile to be removed, the variance in quantity discussed in Section 101.401 of the Scope of Work in the General Conditions is waived. Adjustment in the unit price for an increase or decrease in the quantity of tile removed will not be granted. The contractor will be paid the unit price bid for each tile removed, regardless of the quantity. The unit price bid for the location and removal of tile drains shall include supplying all materials, equipment, labor and any incidental items necessary for performing all operations described in this specification or shown on the plans. No separate payment shall be made for disposal of removed tile drains.

313 PUMP INSTALLATION

313.10 DESCRIPTION

The work shall include the supply of all labor, materials and equipment necessary to complete the installation of the pump as specified on the plans. The work shall include supplying all pump features shown on the plans. These may include but are not limited to the pump, pump motor, strainer basket with vortex plate, vacuum valve, control panels, circuit breaker, motor starter, on/off switch, low water shut-off diodes, high water auto start up, CMP pipe, flap gates, canal gates, trashrack, dresser couplers, grate, support beam, discharge basins, catwalk structure, concrete, pump sump, excavation, embankment, and pressure shutoff switch. The work shall include a warranty from the vendor as described in this specification.

313.20 MATERIALS/SHOP DRAWINGS

All materials described in this specification shall be shown and listed on shop drawings. Shop drawings are required prior to construction. Shop drawings are to be submitted with the bid if an alternative pump or pump feature is proposed.

The control panel shall be designed for outdoor use and shall have heat tape as part of installation to avoid condensation on the inside of the control panel. Unless otherwise specified on the plans, a separate, external, main shutoff shall be provided for all pump installations. Unless otherwise specified on the plans, a low water shutoff control shall be provided for all pump installations.

313.30 ELECTRICITY

Power, as required for the application, shall be supplied to the pump unless otherwise specified. The power shall be supplied in accordance with the specification for **SUPPLY OF ELECTRICAL POWER**. The Contractor must connect the power supply to the control panel with all connections in accordance with local, state, and federal requirements.

313.40 INSTALLATION

Installation shall be made according to manufacturer's recommendations. The pump supplier and Contractor shall both have a representative present during initial pump start-up operations, and such personnel shall remain available until the pump is operating in a manner acceptable to the Owner and Engineer.

313.50 WARRANTY

The pump manufacturer shall supply a warranty to the Owner or Property Manager that shall provide that:

For a period of one (1) year from the date of installation, to absorb repair or replacement costs, including materials and labor, of any pump feature, described in this specification, that fail to function as intended under normal operation conditions subject to maintenance at intervals recommended by the manufacturer.

313.60 METHOD OF MEASUREMENT

Pump installation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Pump installation shall be measured in the following manner:

1) Lump Sum (LS): Pump installation shall be measured on a lump sum basis. No Separate payment shall be made for the supply and installation of various components required for pump installation.

313.70 METHOD OF PAYMENT

The completed work for pump installation, measured as specified, shall be paid for at the contract unit price. The unit price bid for pump installation shall include supplying all materials, equipment, labor and any incidental items necessary to perform all installation operations as described in this specification and shown on the plans.

314 WATER WELL DRILLING

314.10 DESCRIPTION

The work shall include the supply of all labor, materials, and equipment necessary to complete the installation of water wells and associated equipment as shown on the plans and/or specified herein. Unless otherwise specified, the Contractor shall furnish all labor, equipment, and supplies required to complete the test pumping after the well installation.

314.20 PERMITS, LAWS, AND ORDINANCES

The Contractor shall, at his own expense, obtain all certificates and licenses required of him by law for the execution of this contract. The Contractor shall comply with all local, state, and federal laws and regulations relating to the performance of the work in this contract.

314.30 MATERIALS

314.31 TEMPORARY OUTER WELL CASING FOR GROUTING

The temporary casing is not required to be new or non-used, and shall be removed as grouting of the well progresses. The temporary casing remains the property of the Contractor.

314.32 WELL CAP

The well cap will be of the same material as the well casing and be suitable for reducing the well casing diameter to the diameter of the supply line.

314.33 SCREENING OR PERFORATING

Because of the uncertainty as to the type of water-bearing strata which may be encountered and utilized, the following alternatives may be considered at the option of the Engineer: open bottom casing; perforated casing; or screened to fit the size casing being used.

a) Open Bottom Casing. An aggregate pack shall be placed in the bottom of the well. The aggregate shall extend a minimum of five (5) feet below the bottom of the casing and a minimum of three (3) feet up into the casing from the bottom, for a total of at least eight (8) feet. The aggregate shall be uniformly graded and composed of hard, durable particles, free of dirt and organics. It shall pass a No. 4 screen and be retained on a No. 16 screen.

b) Perforated Casing. The Contractor shall be prepared and equipped to perforate the casing and/or install a section of perforated casing at any depth determined by the Engineer who will establish the size and extent of the perforations, and direct the Contractor to proceed. The Contractor shall remove any protrusions from the inside of the casing that may have been caused by perforating.

c) Screened Casing. The Contractor shall provide a one-quart sample of the water-bearing strata to the Engineer along with his preliminary recommendation as to screen materials, type, length, and opening size to be used. If a determination is made to use a screen, the Engineer will establish the screen materials, type, length, and opening size to be used and will direct the Contractor to proceed. The screen used shall be stainless steel, unless otherwise approved by the Engineer. If the Engineer elects to use gravel packing in conjunction with the screen, the gradation of the gravel and thickness of the gravel or sand layer shall be as specified. The gravel shall be placed to avoid segregation of finer and coarse particles.

314.40 INSTALLATION AND EXECUTION

314.41 DRILLING AND CASING

1) A well hole of suitable size to permit the installation of a protective casing shall be drilled and cased by the Contractor for the entire depth of the well or as approved by the Engineer. The depth of cased well eligible for payment shall be approved in writing by the Engineer.
2) The well shall be drilled and the casing installed with sufficient accuracy in the vertical alignment to permit the installation and operation of the submersible pump or hand pump at a later date, if necessary. The casing shall be thoroughly swabbed, using alkalis, if necessary, to remove oil, grease, or joint dope. Cleaning shall be considered incidental work.
3) The annular opening between the protective casing and the temporary casing shall be filled with cement grout. The grouting shall be done continuously and in such a manner that will force the grout from the bottom of the opening toward the surface. The well shall be grouted a minimum of twenty (20) feet. If a pitless adapter is shown on plans, the grouting shall extend twenty (20) feet below this unit. No grouting is necessary above the pitless adapter.
4) The temporary casing shall be withdrawn as grout is placed, so grout will fill the void between the protective casing and natural ground. No drilling operations or other work in the well(s) will be permitted until the grout has firmly set.
5) Cement grout shall be a mixture of one bag of Portland cement (94 lbs,) and five to six gallons of water. Up to five (5) percent commercial bentonite clay, by weight, may be added.
6) Alternate methods of grouting are subject to approval in advance by the Engineer.

314.42 POLLUTION PROTECTION

In order to avoid pollution by surface water and to assure ample drainage away from the well, the top of the casing shall be extended two feet above the surface of the ground. At the completion of the well, a well cap shall be installed on the top of the casing to prevent contaminating substances from entering the well. The Contractor shall take such reasonable measures as necessary to prevent contamination of the well when work is not in progress at the site.

314.43 WELL LOG AND SOIL SAMPLES

The Contractor shall keep a complete well log for the well, and shall keep samples of each water-bearing stratum. The well log shall contain entries for each stratum of water-bearing formation. The samples shall be kept in transparent plastic containers of approximately one pint capacity each and identified by labels showing the depth at which each was encountered. The Contractor shall furnish these plastic containers. The samples shall be given to the Engineer. One copy of the well driller's report including the well log shall be submitted to the Engineer within 15 days after completion of the well. All pertinent test pumping data shall be recorded on the well log.

314.44 DEVELOPMENT AND TESTING

It is possible that more than one water-bearing stratum will need to be tapped to secure the desired amount of water. The Contractor shall make such necessary tests at each water-bearing stratum encountered. The Contractor shall furnish all necessary pumps, compressors, plungers, bailing, or other needed equipment. The Contractor shall develop the well by such approval methods as shall be necessary to give the water-bearing formation the maximum practical quantity of such strata or sands as may, during the life of the well, be withdrawn when the well is pumped under maximum conditions or drawdown.

314.45 TEST PUMPING FOR YIELD AND DRAWDOWN

After the well has been completely constructed, cleaned out, and the depth of the well accurately measured, the Contractor shall notify the Engineer and make the necessary arrangements for conducting a final pumping test.

The Contractor shall furnish and install necessary pumping equipment capable of pumping to the required point of discharge. He shall also furnish, install, and maintain equipment of approved size and type for measuring the flow of water. Such equipment may be a weir box, orifice, water meter, or other approved mechanism. To measure the elevation of the water level in the well, a steel or electric tape shall be furnished, or an airline complete with gage, hand pump and check valve shall be provided. Unless otherwise permitted, the air line shall be securely fastened to the pumping unit and shall terminate approximately at the maximum desired pumping level stated herein, but shall in no case be nearer than two feet to the end of the suction pipe.

The pumping test shall be conducted at the maximum rate of flow, which will not damage the water-bearing aquifers, until the water level stabilizes. The Contractor shall record the static water level and the static pumping level for each flow measurement. During the pumping test, the drawdown in feet below static level and pumping rate shall be measured at least every five minutes until the drawdown stabilizes, and every ten minutes thereafter.

The well shall be pumped near the maximum rate, approximately 50 percent drawdown, until drawdown and yield are constant at that rate. Drawdown may be considered constant when three measurements, taken one hour apart, are the same. The drawdown and yield shall be recorded. The Engineer may request the drawdown at several pump discharge rates. After completion of the pumping test, water level recovery shall be recorded every five minutes until static water depth is reached.

The pumping unit shall be operated at such rates of discharge and for such periods of time as directed, excepting that the final test shall be run for a minimum period of one hour. Accidental interruptions may, if so agreed upon between the Contractor and the Engineer, be compensated for by correspondingly extending the time of the completion of the test run. After the completion of the final test, the Contractor shall remove, by bailing, sand pumping, or other methods, any sand, stones, or foreign material that may have become deposited in the well.

314.50 METHOD OF MEASUREMENT

Water well drilling shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Water well drilling shall be measured in the following manner:

1) Lump Sum (LS): Water well drilling shall be measured on a lump sum basis of an installed well. No separate measurement shall be made for linear foot of well or excess materials.
2) Linear Feet (LF): Water well drilling shall be measured on a linear foot basis of actual installed well. No measurement for excess well drilling or materials shall be made.

314.60 METHOD OF PAYMENT

The completed work for water well drilling, measured as specified, shall be paid for at the contract unit price. The unit price bid for water well drilling shall include supplying all materials, equipment, labor and any incidental items necessary to perform all well drilling operations as described in this specification and shown on the plans.

315 SUPPLY OF ELECTRICAL POWER

315.10 DESCRIPTION

The work of this section shall include the suppl y of all labor, materials, equipment and incidental items required to provide, install or relocate electric service lines as shown on the plans.

315.20 MATERIAL

The materials shall be of the industry standard required to meet the voltage and power requirements of the electrical facilities. They shall conform to all electric codes applicable at the project site. The Contractor shall notify the Engineer of what materials will be installed.

315.30 CONSTRUCTION

The electric cooperative or power company responsible for supplying power must approve the installation plan prior to construction. Installation of the el ectric service li ne shall conform to all electric codes applicable at the project site. For relocated lines, the existing line shall be cut and abandoned at a point determined by the Engineer in the field. The line shall be relocated as shown on the plans or staked by the Engineer. Installation of the new line shall conform to all electric codes applicable at the project site.

315.40 METHOD OF MEASUREMENT

The supply of electrical power shall be measured on a unit basis. The unit sh all be shown in the Unit Price Table of the Stand ard Bid For m for the pa y item corresponding to this specification n umber. Supplying electrical power shall be measured in the following manner:

1) Lump Sum (LS): Supplying electrical power shall be measured on a l ump sum basis of installed/relocated power line. No separate measurement shall be made for linear footage of power line or excess materials.

315.50 METHOD OF PAYMENT

The completed work for suppl ying electrical power, measured as specified, shall be paid for at th e contract unit price. The unit price bid for supplying electrical power shall include supplying all materials, equipment, labor and any incidental items necessary to perform the power line installation operations as described in this specification and shown on the plans.

316 DIKE AND ACCESS ROAD SURFACING

316.10 DESCRIPTION

The work shall include the supply of all labor, materials, and equipment necessary to complete the dike and/or access road surfacing as shown on the plans and/or specified herein. The work shall consist of preparing the subgrade, and furnishing and installing the surfacing on the dike or access road as shown on the plans and in accordance with this specification.

316.20 SUBGRADE PREPARATION

Before any site grading, road grading or placing fill material for dikes, roads, parking areas or other areas designated by the Engineer, the foundation areas shall be cleared and grubbed, and topsoil removed in accordance with the specification for **SITE PREPARATION**.

The subgrade shall be constructed to an elevation and cross section that, when compacted, will be in conformity with the lines, grades and cross sections shown on the plans or established by the Engineer. All soft areas and other portions of the subgrade that will not compact readily shall be removed as directed. Rocks that interfere with the trimming of the subgrade and all roots and other foreign matter brought to the surface shall be removed and disposed of satisfactorily. All holes or depressions made by the removal of materials as described above shall be filled with approved material. All fill material shall be placed in accordance with the specification for **EMBANKMENT CONSTRUCTION**.

The subgrade shall be scarified to a depth not less than six (6) inches, and re-compacted. At the time the base material or surface course is placed, the subgrade shall have "required stability". The required stability shall be such that no rutting or displacement of the dike, road bed, or parking area will occur under the operation of the equipment used for compaction.

The Contractor shall protect and repair any damage to the subgrade from his own and public traffic. The subgrade shall at all times be completed for a sufficient distance ahead of hauling and placing base or surface material to allow an adequate opportunity for inspection. No materials shall be placed on the subgrade until it has been checked, inspected, and approved by the Engineer.

316.30 MATERIAL

Surfacing material shall be coarse aggregate consisting of hard, durable particles or fragments of stone, gravel, or slag. Organic materials or those that break up when alternately frozen and thawed or wetted and dried shall not be used. Surfacing material shall conform to the following grading and physical requirements:

1) Grading requirements

Aggregate Type	% Passing by Weight				
	1" Sieve	3/4" Sieve	3/8" Sieve	#8 Sieve	Loss by Washing
Coarse	100	90-100	60-85	25-60	4-8

2) L.A. Abrasion Loss 50% max

3) Percent Shale or Soft Rock 12% max

316.40 TESTING

A sieve analysis by wash screening shall be conducted on a representative sample of material to be obtained at the discretion of the Engineer. A certified testing laboratory shall perform the sieve analysis and the test results shall be furnished to the Engineer for his approval. A sieve analysis is required for each stockpile of material prior to placement. A sieve analysis is required each time the source of the material changes. The Contractor shall pay for all laboratory costs.

316.50 PLACEMENT

Upon completion and approval of the subgrade preparation by the Engineer, the gravel shall be placed and compacted on the prepared subgrade to the dimensions shown on the plans. Equipment used for placement operations shall meet the requirements of the state or local highway department standard specifications or be approved by the Engineer. Material sources requiring the material to be blended to achieve the specified gradation may be blended at the material stockpile site or on areas designated by the field engineer. All blending of materials shall be done in a uniform manner to provide the specified gradation.

316.60 METHOD OF MEASUREMENT

Dike and access road surfacing shall be measured on a unit basis. The units hall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Dike and access road surfacing shall be measured in the following manner:

1) Lump Sum (LS): Surfacing shall be measured on a lump sum basis of installed surfacing. No separate measurement of surfacing material or excess surfacing material shall be made.
2) Cubic Yards - Plan Quantity (CY-P): Surfacing shall be measured on a plan quantity basis. The quantity shall be the neat line quantity of installed surfacing material calculated from the construction plans. No separate measurement of surfacing material or excess surfacing material shall be made.
3) Ton (TN): Surfacing shall be measured on a ton basis. The measurement shall be made by the collection of weight tickets from the supplier and shall be based on the short ton. Measurement shall be based on the actual amount of placed surfacing. No measurement shall be made for excess rock.
4) Ton - Plan Quantity (TN-P): Surfacing shall be measured on a plan quantity basis based on a short ton weight. The quantity shall be calculated using the neat line dimensions of installed surfacing as shown on the construction plans. No separate measurement of surfacing material or excess surfacing material will be made.
5) Linear Feet (LF): Surfacing shall be measured on a linear feet basis. The quantity shall be measured taking the actual centerline distance of placed surfacing material.

316.70 METHOD OF PAYMENT

The completed work for dike and access road surfacing, measured as specified, shall be paid for at the contract unit price. The unit price bid for dike and access road surfacing shall include supplying all materials, equipment, labor and any incidental items necessary to perform all road surfacing operations as described in this specification and shown on the plans.

317 FENCING

317.10 DESCRIPTION

The work of this section shall include the supply of all labor, materials and equipment necessary for the installation of fencing as called for on the plans and/or specified herein. The fencing may include but is not limited to:

a) Woven wire fence
b) Chain link fence
c) Barbed wire fence
d) Electric predator fence
e) All posts, gates and necessary hardware associated with the above

317.20 MATERIALS

All materials shall meet the requirements as specified on the plans.

317.30 CONSTRUCTION METHODS

317.31 POSTS

The spacing of posts shall be as required on the plans. The posts shall be set in reasonably close conformity to the alignment and grade shown on the plans or as directed by the Engineer. An intersection post shall be set in line with intersecting fences shown on the plans. Both intersecting fences shall be connected to the intersection post. All posts shall be set plumb and to the required depth, anchored and braced in accordance with the plans. Posts that are bent or otherwise damaged shall be removed and replaced.

317.32 FENCE FABRIC OR WIRE

Fence fabric of the height specified on the plans shall be stretched taut and securely fastened to each post with an approved fastener in the manner specified on the plans. Wire fences shall have the wire placed at the appropriate heights as specified on the plans. All wires shall be stretched taut and securely fastened to each post as specified.

317.33 GATES

Gates of the size and type specified shall be erected in an approved manner at the locations shown on the plans or as directed by the Engineer. All gates shall be properly framed and braced to prevent sag. The fabric or wire used for the gates shall meet the same requirements as specified for the fence. The hinge post and latch post of all gates shall be set in concrete.

317.40 QUALITY CONTROL

All workmanship and materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Engineer including all operations, from the selection and production of materials, through final acceptance of the specified work. The Contractor shall be wholly

responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given.

The tops of all posts shall be a uniform height above the ground. The finished fence shall be substantially true to line, taut and solid at all points. All surplus excavated material and other debris shall be disposed of properly. The Engineer reserves the right to reject any materials or works, which are not in accordance with the requirements of this specification.

317.50 METHOD OF MEASUREMENT

Fencing shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Fencing shall be measured in the following manner:

1) Lump Sum (LS): Fencing shall be measured on a lump sum basis of installed fence. No separate measurement shall be made for linear feet of fence or excess materials.
2) Linear Feet (LF): Fencing shall be measured on a linear foot basis. The quantity shall be the actual linear feet of installed fence. No measurement for excess fence or fencing materials shall be made. No measurement shall be made for gates.

Concrete, where required for post setting, shall be considered incidental to the fencing measurement described herein. No separate measurement shall be made.

317.60 METHOD OF PAYMENT

The completed work for fencing, measured as specified, shall be paid for at the contract unit price. The unit price bid for fencing shall include supplying all materials, equipment, labor and any incidental items necessary to perform all fencing installation operations as described in this specification and shown on the plans. No separate payment shall be made for pedestrian/vehicle gates or cattle guards.

318 BUILDINGS

318.10 DESCRIPTION

The work of this section shall include the supply of all labor, materials, and equipment required to complete the installation of the buildings or enclosures as called for on the drawings and/or specified herein. These buildings may include but are not limited to the following:

a) Pump houses

b) Equipment storage

c) Any other structures specified on the plans.

This work shall include, but is not limited to, supplying and installing the following components as shown on the plan; walls, roof, door, framing, supports, skylights, gutters, and downspouts.

318.20 MATERIALS

All materials described in this specification shall be shown and listed on shop drawings. Shop drawings are required prior to construction. Shop drawings are to be submitted with the bid if an alternative building or building feature is proposed.

Unless otherwise specified on the plans, all buildings specified as pump house shall include a removable roof.

318.30 SITE PREPARATION

The site will be leveled and graveled. 110-volt power shall be available within 200 feet of the site. Contractor must connect power supply to control panel in accordance with the specification for **SUPPLY OF ELECTRICAL POWER**.

318.40 INSTALLATION

Where called for on the plans, concrete slabs, floors, or pads shall be placed in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE**.

For prefabricated buildings, the installation shall be made according to manufacturer's recommendations. The manufacturer shall supply a warranty to the project Owner or Property Manager that shall provide that for a period of one (1) year from the date of installation, to absorb any repair or replacement costs, including materials and labor, of any building feature, described in this specification, that fails to function as intended under normal conditions subject to maintenance at intervals recommended by the manufacturer.

All other buildings shall be constructed as shown on the plans and in accordance with all state and local building codes.

318.50 QUALITY CONTROL

All workmanship and materials, furnished and supplied under this specification, are subject to close and systematic inspection and testing by the Engineer including all operations, from the selection and production of materials, through final acceptance of the specified work. The Contractor shall be wholly

responsible for the control of all operations incidental thereto, notwithstanding any inspection or approval that may have been previously given.

The finished building shall be square and walls plumb, all mortar joints shall be properly finished, all doors and windows shall seal properly and locks shall function. All surplus excavated material and other debris shall be disposed of properly. The Engineer reserves the right to reject any materials or works, which are not in accordance with the requirements of this specification.

318.60 METHOD OF MEASUREMENT

Buildings shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Buildings shall be measured in the following manner:

1) Lump Sum (LS): Buildings shall be measured on a lump sum basis. No Separate payment shall be made for the supply and installation of various components required for the building installation.

318.70 METHOD OF PAYMENT

The completed work for buildings, measured as specified, shall be paid for at the contract unit price. The unit price bid for buildings shall include supplying all materials, equipment, labor and any incidental items necessary to perform all building installation operations as described in this specification and shown on the plans. No separate payment shall be made for concrete pads or floors.

319 DECKING AND RAILING

319.10 DESCRIPTION

The work shall include the supply of all labor, material and equipment required for the installation of all decking and railings as shown on the plans. All wood construction shall be in compliance with minimum standards set by the most recent edition of BOCA National Building Code, Chapter 23 and the National Design Specification for Wood Construction (NDS) as published by the American Forest and Paper Association, formerly the National Forest Products Association.

319.20 SUPPLY OF MATERIALS

Structural framing members shall be southern pine, No. 1, S4s with minimum design values as published in the NDS. All lumber shall be preservative treated in accordance with AWPA C2 or C9, except handrails. All decking and rail cap shall be properly installed to prevent cupping.

All handrails shall be select western red cedar grade D or better, S4S, 15% maximum moisture content, grade stamped on ends. Installed handrail shall be smooth and free of splinters.

All hardware and fasteners shall be hot-dipped galvanized or stainless steel 304 or 316.

All concrete necessary for post footings shall be mixed and placed in accordance with the specification for **CAST-IN-PLACE REINFORCED CONCRETE**.

319.30 CONSTRUCTION METHODS

All decking and railings shall be constructed as shown on the plans and in accordance with all applicable building codes.

319.40 METHOD OF MEASUREMENT

Decking and railing installation shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Decking and railing installation shall be measured in the following manner:

1) Lump Sum (LS): Decking and railing installation shall be measured on a lump sum basis of installed lumber. No separate measurement of decking and railing shall be made.
2) Linear Feet (LF): Decking and railing shall be measured on a linear foot basis. The quantity shall be the actual linear feet of installed decking and railing. No measurement for excess deck or rail or decking or railing materials shall be made.

No separate measurement shall be made for the hot-dipped galvanized or stainless steel hardware and fasteners used in the decking and railing installation. No separate measurement shall be made for the concrete or other materials required for the footings. The supply and installation of these materials shall be considered incidental to the decking and railing installation.

319.50 METHOD OF PAYMENT

The completed work for decking and railing, measured as specified, shall be paid for at the contract unit price. The unit price bid for decking and railing shall include supplying all materials, equipment, labor

and any incidental items necessary to perform all decking and railing installation operations as described in this specification and shown on the plans.

401 SOIL EROSION AND POLLUTION CONTROL

401.10 DESCRIPTION

The work shall include the supply of all labor, materials and equipment necessary for the construction and maintenance of erosion controls and to minimize the production of sediment and other pollutants to water and air during construction operations. It is the Contractor's responsibility to adhere to all Local, State and Federal regulations regarding the control of soil erosion, sedimentation, and pollution. The work and measures may include, but are not limited to the following as shown on the drawings or as specified herein.

a) Staging of Earthwork Activities - The excavation and moving of soil materials shall be scheduled so that the smallest possible areas will be unprotected from erosion for the shortest time feasible.

b) Diversions - Diversions shall be used to divert water away from work areas and/or to collect runoff from work areas for treatment and safe disposition.

c) Stream Crossings - Stream crossings shall be used where fording of streams by equipment is necessary.

d) Silt Fence - Silt fence shall be used to trap sediment from areas of limited runoff. Silt fence is temporary and shall be removed when permanent measures are installed.

e) Sediment Basins - Sediment basins shall be used to settle and filter out sediment from eroding areas to protect properties and streams below the construction site.

f) Filters – Rock and straw bale filters shall be used to trap sediment from areas of limited runoff. Straw bales are temporary and shall be removed when permanent measures are installed.

g) Waterways - Waterways shall be used for the safe disposal of runoff from fields, diversions and other structures or measures.

401.20 MATERIALS

All materials used for permanent erosion and sedimentation controls shall meet the requirements as specified on the plans. Materials used for temporary erosion and sedimentation controls shall be approved by the Engineer.

401.30 CONSTRUCTION METHODS

401.31 GENERAL REQUIREMENTS

Construction operations shall be conducted in such a manner to reduce erosion and sedimentation to a practical minimum. Temporary or permanent controls shall be constructed to the extent possible prior to clearing and grubbing operations. Clearing and grubbing shall not be done until the area is needed in the construction operation.

The construction site shall be maintained in a clean and sanitary condition during construction operation. Trash barrels shall be provided at the site and periodically emptied.

Installation of all controls shall be accomplished as specified on the plans or with the approval of the Engineer in accordance with the manufacturer's published recommended practice.

401.32 INCIDENTAL EROSION AND POLLUTION CONTROL ITEMS

These items shall consist of installing measures, supplying all materials and equipment, and performing all work to control erosion and minimize the production of sediment and other pollutants to the water and air during construction operations. Such measures shall include, but are not limited to, silt fences and other measures listed in this specification or deemed necessary by the Engineer.

All state and local laws governing soil erosion and pollution control shall be followed. The Engineer shall have sole authority in determining when pollution control measures are necessary, when pollution control measures are functioning properly, and when silt fences for this item of work are required.

With the exception of silt fence, the Contractor shall determine which soil erosion and pollution control measures to install, provided that the measures are in accordance with applicable laws. The Contractor shall maintain all soil erosion and pollution control measures.

Earth stockpiles shall be in the area located on the drawings and protected with silt fences to control runoff and erosion in such a manner as to minimize the production of sediment and other pollutants to the water during construction operations.

401.40 CHEMICAL POLLUTION

The Contractor shall provide tanks or barrels to be used to dispose of waste oils or other chemical pollutants produced as a by-product of the work under the contract, such as drained lubricating or transmission oils, greases, soaps, asphalt, etc. At the completion of the work, all storage tanks or barrels shall be removed and disposed of at the Contractor's expense in accordance with all Local, State and Federal regulations.

Sanitary facilities shall not be placed adjacent to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water sources.

401.50 AIR POLLUTION

All Local, State and Federal regulations concerning the burning of brush or slash or disposal of other materials shall be adhered to. Fire prevention measures shall be taken to prevent the start or the spreading of fires that may result from any contract work. Fire breaks or guards shall be constructed at locations as shown on the drawings.

All public access or haul roads used during construction of the project shall be watered or treated with dust palliative when necessary to control the dust raised by the hauling equipment.

401.60 MAINTENANCE, REMOVAL AND RESTORATION

All measures and works shall be adequately maintained in a functional condition as long as needed during the construction operation. Sediment shall be removed periodically or as directed by the Engineer. Upon sediment removal, all trapped sediment from the controls must be disposed of in the spoil area as shown on the plans. All temporary measures shall be removed and the site restored as nearly to original conditions as practicable as directed by the Engineer. All temporary measures and materials become the property of the Contractor upon removal.

401.70 METHOD OF MEASUREMENT

Soil erosion and pollution control shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Soil erosion and pollution control shall be measured in the following manner:

1) Lump Sum (LS): Soil erosion and pollution control shall be measured on a lump sum basis of installed devices. No separate payment shall be made for excess material.
2) Linear Feet (LF): Soil erosion and pollution control shall be measured on a linear feet basis. The length shall be the actual length of soil erosion control measures installed according to plans and specifications.
3) Each (EA): Soil erosion and pollution control measures shall be measured on an individual basis. The type and number of controls paid for shall be specified on the plans and itemized on the Standard Bid Form.

401.80 METHOD OF PAYMENT

The completed work for soil erosion and pollution control, measured as specified, shall be paid for at the contract unit price. The unit price bid for soil erosion and pollution control shall include supplying all materials, equipment, labor and any incidental items necessary for performing all operations described in this specification and shown on the plans.

402 SEEDING AND MULCHING

402.10 DESCRIPTION

The work of this section shall include the supply of all labor, materials, equipment and incidental items required to complete the seeding and mulching operations as shown on the plans or specified herein. This specification shall cover the preparation of areas to be seeded, furnishing and placing required seed, fertilizer, and other materials necessary for the complete seeding of the areas of this project requiring the establishment of turf.

402.20 MATERIALS

402.21 SEED MIXTURE

Seed mixtures shall be composed of certified seed of the purity, germination, and proportions, by weight, as specified on the plans. Seed shall be furnished separately or in mixture in standard, sealed containers with (1) seed name; (2) lot number; (3) net weight; (4) percentages of purity and of germination and (5) percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the Owner duplicate signed copies of a statement by the vendor, certifying that each lot of seed has been tested by a qualified laboratory for seed testing within six months of date of delivery.

402.22 MULCHING MATERIAL

Straw or excelsior mulches shall be of an approved material and anchored with an approved adhesive or netting. Mulch blankets shall be made of a uniform layer of straw or excelsior with a backing of net on one side only. Devices used to hold the net in place shall be of the material and design specified on the plans or approved by the Engineer.

402.30 SEEDING SEASON

The Contractor shall obtain the permission of the Owner to proceed with a dormant seeding during the late fall. If fall dormant seeding is not approved, the Contractor shall complete all seeding the following spring prior to June 15.

402.40 SOIL PREPARATION

Areas to be seeded that have been damaged by erosion shall be restored prior to seeding. All areas to be seeded shall be finished to the grades shown on the plans, plus 4" for topsoil thickness, and then cultivated to provide a reasonably firm, but friable seedbed, free of lumps and clods detrimental to seeding operations. A minimum of 1 inch of surface soil shall be in a loose condition.

402.50 APPLICATION

Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment shall be used to apply the seed and fertilizer in the amounts and mixtures shown on the plans. When a hydro-seed method is used, the capability of the equipment shall be adequate as approved by the Engineer to effectively cover the area to be seeded. Areas that are inaccessible may be sown by the broadcast method. All areas shall be visually inspected for uniformity of application. Hand-operated seeding devices may be used when seed and fertilizer are applied in dry form.

Application shall start at the top of the slope and work downward. All application rates shall be approved by the Engineer prior to application.

402.60 QUALITY CONTROL

402.61 WORKMANSHIP AND MATERIALS

All workmanship and materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Engineer including all operations, from the selection and production of materials, to final acceptance of the specified work.

The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Engineer reserves the right to reject any work or materials that are not in accordance with the requirements of this specification.

402.62 CARE DURING CONSTRUCTION

The Contractor shall be responsible for protecting and caring for seeded areas until acceptance of the work. The Contractor shall repair any damage to seeded areas caused by construction operations without additional compensation.

402.70 METHOD OF MEASUREMENT

Seeding shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Seeding shall be measured in the following manner:

1) Lump Sum (LS): Seeding shall be measured on a lump sum basis. No measurement of area seeded will be made.
2) Acre-Plan Quantity (AC-P): Seeding shall be measured on a plan quantity basis. This quantity shall be the neat line areas to be seeded as calculated from the construction plans.
3) Acre (AC): Seeding shall be measured on an area basis. The quantity shall be determined by actual field measurements of the number of acres seeded. No measurement will be made for excess seeding of project areas.

No measurement shall be made for the supply and installation of mulch where required. This shall be considered incidental to seeding operations.

402.80 METHOD OF PAYMENT

The completed work for seeding, measured as specified, shall be paid for at the contract unit price. The unit price bid for seeding shall include supplying all materials, equipment, labor and any incidental items necessary for performing all seeding operations described in this specification. No separate payment shall be made for mulching. Mulching will be considered incidental to seeding operations.

403 HERBICIDE APPLICATION

403.10 DESCRIPTION

The work of this section shall include the supply of all labor, materials, equipment and incidental items required to complete the herbicide application as shown on the plans.

403.20 MATERIALS

Herbicides shall refer to any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any undesirable plants, fungi, or microorganisms and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. The material used for each particular application shall be listed on the plans or provided by the Engineer.

403.30 APPLICATION

The work shall be performed by an appropriately licensed and recognized applicator. It is the Contractor's responsibility to adhere to any and all Federal, State and Local laws, regulations, and standards that pertain to the purchase, storage, handling, application, and disposal of regulated and non-regulated herbicides.

Appropriate measures shall be taken to address and minimize the risks to humans and non-target plants and animals. Any non-target damage caused by drift or poor application practices shall be the responsibility of the contractor.

403.40 METHOD OF MEASUREMENT

Herbicide application shall be measured on a unit basis. The unit shall be shown in the Unit Price Table of the Standard Bid Form for the pay item corresponding to this specification number. Herbicide application shall be measured in the following manner:

1) Lump Sum (LS): Herbicide application shall be measured on a lump sum basis. No measurement of the applied area will be made.
2) Acre-Plan Quantity (AC-P): Herbicide application shall be measured on a plan quantity basis. This quantity shall be the neat line areas to be treated as calculated from the construction plans.
3) Acre (AC): Herbicide application shall be measured on an area basis. The quantity shall be determined by actual field measurements of the number of acres treated. No measurement will be made for excess treatment of project areas.

403.50 METHOD OF PAYMENT

The completed work for herbicide application, measured as specified, shall be paid for at the contract unit price. The unit price bid for herbicide application shall include supplying all materials, equipment, labor, and any incidental items necessary for performing all operations described in this specification.

404 TRAFFIC MAINTENANCE AND CONTROL

404.10 DESCRIPTION

The work shall include the supply of all labor, materials and equipment necessary to protect and maintain traffic and to protect the work while the contract is in force. The work and measures may include, but are not limited to, the following as shown on the drawings or as specified herein; furnishing, erecting, and maintaining signs, barricades, warning lights, and other traffic control devices.

404.20 MATERIALS

All materials shall conform to those found in the current State Manual of Uniform Traffic Control Devices for the state in which the project is located.

404.30 CONSTRUCTION REQUIREMENTS

All barrels, signs, cones, warning lights, and barricades shall be erected in accordance with the Manual on Uniform Traffic Control Devices unless otherwise specified on the plans. No construction work shall be started until the proper signs and traffic control devices are installed. All applications shall follow the requirements of the Manual on Uniform Traffic Control Devices. The Contractor shall provide a watch person who shall patrol the entire job and detour route if any at least once before 8 a.m. each day and once again before dark each day, including days the Contractor is not working until or otherwise directed by the Engineer. The watch person under the Contractor's supervision will be responsible for making sure all signs, barricades, cones, warning lights and markers are in good condition and working order and that the travel way is in good condition. Additional signs and barricades may be required as directed by the Engineer.

404.40 METHOD OF MEASUREMENT

Traffic control shall be considered incidental to **MOBILIZATION**. No separate measurement shall be made for the installation and maintenance of traffic control during the construction sequence of this project.

404.50 METHOD OF PAYMENT

No separate payment for traffic maintenance and control measures shall be made.