COMPLETE BIDDING AND CONTRACTING MANUAL

Trinidad Harbor and Tribal Operations Generators

TRINIDAD RANCHERIA,
HUMBOLDT COUNTY, CALIFORNIA
August 2021

Trinidad Rancheria
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TRINIDAD RANCHERIA

Trinidad Harbor and Tribal Operations Generators

BIDDING AND CONTRACTING MANUAL

RECOMMENDED BY:

Jacque Hostler-Carmesin, CEO **Trinidad Rancheria**	**Date**

Joshua T. McKnight, P.E. **RCE 60687 Expires 12/31/22**	**Date**

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DIVISION 00
PROCUREMENT & CONTRACTING

SECTION 001100
NOTICE TO CONTRACTORS

The Trinidad Rancheria requests sealed bids for the
"Trinidad Harbor and Tribal Operations Generators" project located within the Trinidad Rancheria, Trinidad, CA.

Trinidad Rancheria, **"Trinidad Harbor and Tribal Operations Generators"** is funded through a Federal Emergency Management Administration (FEMA) FY 2019 PDM Grant.

Timeframes:
Envelopes containing bids should be clearly marked on the outside:
Trinidad Harbor and Tribal Operations Generators
Sealed proposals will be received by (and all bids should be mailed, or hand delivered to) the Trinidad Rancheria:

By Hand:
Trinidad Rancheria,
1 Cher-Ae Lane
Trinidad Rancheria, CA

By Mail:
Trinidad Rancheria,
PO Box 630,
Trinidad, CA. 95570

Bids will be received until **Thursday , September 2nd, 2021,** at **2:00 PM** PST at which time the sealed bids will be publicly opened and read aloud. Public bid opening and reading will be held in the Trinidad Rancheria Tribal Office, 1 Cher-Ae Lane, Trinidad, CA.

A pre-bid conference will be held on **Tuesday, August 17th, 2021**, at the project site, beginning at 10:00 AM PST. Prospective Bidders are not required to attend.

Bidding and Contracting Manuals & Plan Set will be provided in electronic (PDF) format. Files will be available by email and as downloadable files on the Humboldt Builders Exchange. Printed copies can be obtained at the cost of production ($100.00) from Trinity Valley Consulting Engineers, Inc. at 67 Walnut Way, Willow Creek, CA 95573. (530 629-3000)

To demonstrate Bidder's qualifications to perform the Work, Bidder shall have a current California Contractors License and Bonded in accordance with current California State Contractor's Law.
Acceptable licenses

- A – General Engineering
- B – General Building
- C 10 - Electrical

All Subcontractors shall be properly licensed for the services they will be providing.

General Specifications:
1) The scope of work for this project is the completion of all work necessary for:
The completion of the **Trinidad Harbor and Tribal Operations Generators,** consisting of but not limited to:

Supply and installation of emergency generator systems consisting of:

1. Generator and Electrical Components, Purchase and installation.
2. Misc. Concrete
3. Fencing
4. Propane service line installation and connection.
5. Assist Trinidad Rancheria with obtaining City of Trinidad permit for Trinidad Harbor Generator system (Trinidad Rancheria is to pay permit fee)

2) Upon Notice to Proceed, contractor shall complete all contractual obligations within **Ninety (90) CALENDAR DAYS.** After which, a liquidated damage charge of $1000.00 per calendar day is prescribed.

3) Davis Bacon wage requirements shall apply to this project. Contractor can obtain the current minimum prevailing wage rates at https://beta.sam.gov/
Applicable rates are for:

"General Decision Number: CA20210005 01/01/2021

Superseded General Decision Number: CA20200005

State: California

Construction Type: Building

Counties: Del Norte, Humboldt, Lake and Mendocino Counties in California.

4) Tribal and Native American Preference per:

Cher-Ae Heights Indian Community of the Trinidad Rancheria PROCUREMENT POLICY Adopted by the Cher-Ae Heights Indian Community of the Trinidad Rancheria (Trinidad Rancheria) Tribal Council by Resolution #TC-18-08 on April 20, 2018. The effective date of this Statement is April 20, 2018.

a. *Issue the solicitation unrestricted to allow both non-Native American and qualified Native American-owned economic enterprises or organizations to submit bids and award shall be made to the qualified Native American-owned economic enterprises or organizations with the lowest responsive bid, if the bid is within the total maximum contract price established for the procurement and within the applicable range specified in Appendix A of the lowest non-Native American bid price; or*

Attachment A *If the bid from the qualified Native American-owned economic enterprise or organization is within the 10% range of the lowest, non-Native American firm, the Native American-owned firm will be given the opportunity to meet the lowest bid price. Should the Native American-owned firm refuse to meet the lower price, the bid shall then be awarded to the responsive and responsible low bidder for the project. The Trinidad Rancheria Tribal Council reserves the right to reject any and all bids and to waive any irregularity or informality which is contained in any bid. All construction is subject to availability of funds.*

Note: To meet the requirement of Attachment A the Native American-Owned firm **will be required to adopt the bid schedule as submitted by the lowest responsive bidder.**

5) Contractor is **not** required to pay TERO fees for this project.

Other Requirements:

6) A cash or bond guarantee, in the amount of five percent (5%) of the bid, must accompany the bid proposal.

7) Retention of 10% of the contract amount will be withheld and paid thirty calendar days after project completion and approval. **Prime contractors shall not withhold retention from sub-contractors.**

8) The successful Bidder shall furnish a payment bond and a performance bond, each in the amount of 100% of the contract amount, after receiving the Letter of Intent to Award.
9) The successful bidder shall provide both a certificate of liability and a certificate of worker's compensation, each in the amount of $1,000,000 and each naming the Trinidad Rancheria as an additional insured. Questions regarding bonds and insurance requirements shall be directed to **Leslie Sanders, Transportation Manager**, **Trinidad Rancheria**

10) The Contractor shall comply with and require its subcontractors to comply with all applicable federal, tribal, and state regulations including all items listed in **Appendix C** of the ***FEMA PROCUREMENT GUIDANCE FOR RECIPIENTS AND SUBRECIPIENTS UNDER 2 C.F.R PART 200 (UNIFORM RULES) SUPPLEMENT TO THE PUBLIC ASSISTANCE PROCUREMENT DISASTER ASSISTANCE TEAM (PDAT) FIELD MANUAL*** **(see Next Section of Manual)**

11) The Contractor shall comply with and require its subcontractors to comply with all applicable environmental and historical preservation laws, regulations and requirements of the Trinidad Rancheria relating to the performance of the work for this project.

12) Cultural Monitoring shall be required during any ground disturbing activities. It is the responsibility of the contractor to notify the owner 72 hours prior to conducting ground disturbing activities. Cultural Monitor will be provided by the Trinidad Rancheria at no cost to the contractor.

13) Disposal of excavated materials:

- **a)** **Clean Fill and Organic Waste** can be disposed of onsite in designated Trinidad Rancheria disposal area.
- **b)** Construction materials including **asphalt and concrete** shall be disposed of per current Federal, State, and Trinidad Rancheria regulations as of the date of removal.

14) Existing Trinidad Rancheria FIBER OPTIC line in located within the **Tribal Operations Center** site area of the project. **Contractor is to locate and protect fiber optic line during all construction activities.** Any and all costs associated with disruption of fiber optic service will be charged to the contractor.

For more information contact

Leslie Sanders, Transportation Manager
Transportation and Land Use, Trinidad Rancheria
(707) 825-2738 Office
(707) 601-5754 Cell
lsanders@TrinidadRancheria.com

APPENDIX C

APPLICABLE FEDERAL LAWS, REGULATIONS, AND EXECUTIVE ORDERS

1. Background.

   a. In addition to complying with the Uniform Rules and the enabling laws, implementing regulations, and FEMA policies for a grant or cooperative agreement program, each NFE must also comply with all other applicable Federal laws, regulations, and executive orders.

   b. Many of these laws, regulations, and executive orders will need to be included in third party contracts to the lowest tier necessary, and others, although not expressly referenced in a contract, will have a direct and indirect effect on a NFE's third party contracts.

   c. DHS issues, on an annual basis, Standard Terms and Conditions that apply to recipients of Federal awards from all DHS Components, including FEMA. In addition, a recipient executes a Standard Form ("SF") 424B or 424D with its grant or cooperative agreement application to FEMA that contains standard assurances. The DHS Standard Terms and Conditions and SF 424B and D contain references to many cross-cutting Federal laws and regulations that may apply to a FEMA award.

   d. The following provides a non-exhaustive list and description of some of the crosscutting laws, regulations, and executive orders that may affect a NFE's procurement.

2. Debarment and Suspension

   a. NFEs and contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, *Debarment and Suspension* (1986) and Executive Order 12689, *Debarment and Suspension* (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (Nonprocurement Debarment and Suspension). These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities.

   b. The regulations at 2 C.F.R. Part 180 and 2 C.F.R. Part 3000 specifically prohibit a NFE from entering into a "covered transaction" with a party listed on the System for Award Management Exclusions ("SAM Exclusions"). SAM Exclusions is the list maintained by the General Services Administration that contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. SAM exclusions can be accessed at www.sam.gov. *See* 2 C.F.R. §§ 180.530.

c. The Department of Homeland Security regulations at 2 C.F.R. Part 3000 include, within the meaning of a "covered transaction," a third party contract at any tier of $25,000 or more; a third party contract at any tier for a Federally required audit (irrespective of the contract amount); and a third party contract at any tier that must be approved by an FEMA official irrespective of the contract amount. 2 C.F.R. § 3000.220; 2 C.F.R. § 180.220.

d. The Uniform Rules require a NFE to include contract provisions that require compliance with debarment and suspension prohibitions. *See* Chapter IV, ¶¶ 6.d and 12.a.ix; 2 C.F.R. Part 200, Appendix II, ¶ I; DHS Standard Terms and Conditions, v 3.0, ¶ X (Dec. 4, 2013)

3. Acknowledgement of FEMA Funding. A NFE must acknowledge its use of Federal funding when issuing statements, press releases, requests for proposals, bid invitations, and other documents describing projects or programs funded in whole or in part with FEMA financial assistance. Specifically, the document shall indicate that FEMA is providing the funds, the Catalog of Federal Domestic Assistance Number, as applicable, and the amount provided. *See* Financial Services and General Government Appropriations Act, 2015, Pub. L. No. 113-83, Division E, § 724 (2015); DHS Standard Terms and Conditions, v 3.0, ¶ II (Dec. 4, 2013).

4. Lobbying Certification and Disclosure.

a. A NFE must comply with 31 U.S.C. § 1352 and 44 C.F.R. Part 18, which provides that no FEMA financial assistance may be expended by a recipient, subrecipient, contractor, or subcontractor to pay any person to influence, or attempt to influence, an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal action concerning the award or renewal.

b. If a third party contract will exceed $100,000, before awarding the contract, the NFE must obtain a lobbying certification and, if applicable, a lobbying disclosure from a prospective third party contractor. 44 C.F.R. § 18.110.

c. The Uniform Rules require a contractor to include provisions in its contracts of $100,000 or more for compliance with lobbying certification and disclosure requirements. *See* Chapter IV, ¶ 12.a.x; 2 C.F.R. Part 200, Appendix II, ¶ J; DHS Standard Terms and Conditions, v. 3.0, ¶ XVIII (Dec. 4, 2013).

5. Civil Rights Requirements. A NFE is required to follow various civil rights requirements when carrying out activities under a FEMA award, and these requirements will flow down to a NFE's contractors at every tier.

a. Nondiscrimination.

i. Nondiscrimination on the Basis of Race, Color, and National Origin. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*), FEMA's implementing regulations at 44 C.F.R. Part 7 (*Nondiscrimination in Federally Assisted Programs*), and the Department's implementing regulations at 6 C.F.R. Part 21 (*Nondiscrimination on the Basis of Race, Color, or National Origin in Programs or Activities Receiving Federal Financial Assistance*) provide that no person in the United States will, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. *See* DHS Standard Terms and Conditions, v 3.0, ¶ VII (Dec. 4, 2013); Standard Form 424D, ¶ 10.

ii. Nondiscrimination on the Basis of Sex. Title IX of the Education Amendments of 1972 (codified as amended at 20 U.S.C. § 1681 et seq.), FEMA's implementing regulations at 44 C.F.R. Part 19 (*Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance*), and the Department's implementing regulations at 6 C.F.R. Part 15 (*Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance*) prohibit discrimination on the basis of sex in any education program or activity receiving Federal financial assistance. *See* DHS Standard Terms and Conditions, v 3.0, ¶ IX (Dec. 4, 2013); Standard Form 424D, ¶ 10.

iii. Nondiscrimination on the Basis of Disability. The Americans with Disability Act of 1990 (codified as amended at 42 U.S.C. §§ 12101-12213) prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private public and private entities. Contractors must comply with the responsibilities under Titles I, II, III, IV, and V of the Americans with Disability Act of 1990 in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies. *See* DHS Standard Terms and Conditions, v 3.0, ¶ V (Dec. 4, 2013); Standard Form 424D, ¶ 10.

iv. Nondiscrimination on the Basis of Handicap. Section 504 of the Rehabilitation Act of 1973 (codified as amended at 29 U.S.C. § 794) and FEMA's implementing regulations at 44 C.F.R. Part 16 (*Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Federal Emergency Management Agency*) provide that no otherwise qualified handicapped individual in the United States will, solely by reason of handicap, be excluded from participation in, be denied the benefits of, or be subjected to, discrimination under any program or activity receiving Federal financial assistance. *See* DHS Standard Terms and Conditions, v 3.0, ¶ XXIII (Dec. 4, 2013); Standard Form 424D, ¶ 10.

v. Nondiscrimination on the Basis of Age. The Age Discrimination Act of 1975

(codified as amended at 42 U.S.C. § 6101 *et seq*.), and Department of Health and Human Services implementing regulations at 45 C.F.R. Part 90 (*Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance*) prohibit discrimination against individuals on the basis of age in any program or activity receiving Federal financial assistance. *See* DHS Standard Terms and Conditions, v 3.0, ¶ IV (Dec. 4, 2013); Standard Form 424D, ¶ 10.

vi. Nondiscrimination on the Basis of Limited English Proficiency. Title VI of the Civil Rights Act of 1964 prohibition against discrimination on the basis of national origin requires that recipients and subrecipients of FEMA assistance take reasonable steps to provide meaningful access to persons with limited English proficiency. Executive Order 13166, *Improving Access to Services for Persons with Limited English Proficiency* (Aug. 11, 2000), requires Federal agencies to issue guidance to recipients, assisting such organizations and entities in understanding their language access obligations. The Department published the required guidance, which is entitled DHS Guidance to Federal Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons, 76 Fed. Reg. 21755-21768 (Apr. 18, 2011). *See* DHS Standard Terms and Conditions, v 3.0, ¶ XVII (Dec. 4, 2013).

vii. Consistent with the preceding nondiscrimination requirements, a NFE's contractors must comply with the following requirements.

(1) A contractor of a NFEs must not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, English proficiency, or disability.

(2) A contractor of a NFE carrying a program or activity under a FEMA award must not, on the grounds of race, color, creed, national origin, sex, age, English proficiency, or disability, exclude a person from participation in, deny him/her benefits, or subject him/her to discrimination.

(3) Contractors must adhere to any Federal implementing regulations and other requirements that the Department and the FEMA have with respect to nondiscrimination.

b. Equal Opportunity

i. Race, Creed, National Origin, Sex. A contractor must, in accordance with Title VII of the Civil Rights Act of 1968, comply with all applicable equal employment opportunity requirements of U.S. Department of Labor regulations at 41 C.F.R Part 60 (Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor), which implement Executive Order No.

11246, *Equal Employment Opportunity*, as amended by Executive Order No. 11375, *Amending Executive Order 11246 Relating to Equal Employment Opportunity*, 42 U.S.C. § 2000e note. The Contractor must take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. 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. *See* DHS Standard Terms and Conditions, v 3.0, ¶ VII (Dec. 4, 2013); Standard Form 424D, ¶ 10.

ii. Age. A contractor must refrain from discrimination against present and prospective employees for reason of age in accordance with section 4 of the Age Discrimination in Employment Act of 1967 (codified as amended at 29 U.S.C. § 623).

iii. Disabilities. A contractor must, in accordance with Section 102 of the Americans with Disabilities Act of 1990 (codified as amended at 42 U.S.C. § 12112) and the requirements of the U.S. Equal Employment Opportunity Commission at 29 C.F.R. Part 1630 (Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act) pertaining to employment of persons with disabilities.

iv. Except as otherwise provided under 41 C.F.R. Part 60, the Uniform Rules require that all contracts that meet the definition of "Federally assisted construction contract" in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. § 60-1.4(b), in accordance with Executive Order 11246, *Equal Employment Opportunity* (30 Fed. Reg. 12319, 12935, 3 C.F.R. Part, 19641965 Comp., p. 339), as amended by Executive Order 11375, *Amending Executive Order 11246 Relating to Equal Employment Opportunity*, and implementing regulations at 41 C.F.R. Part 60 (Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor). *See* Chapter IV, ¶ 12.a.iii; 2 C.F.R. Part 200, Appendix II, ¶ C.

6. Environmental and Historic Preservation Protections. Federal laws, regulations, and executive orders and the terms and conditions of specific FEMA award require the NFE to comply with applicable environmental and historic preservation requirements, which will, in turn, necessitate the NFE's implementation of these requirements as necessary in its third party contracts. *See* Standard Form 424D, ¶¶ 15, 16, and 17.

a. General – Environmental and Historic Preservation Compliance. FEMA will identify various environmental and historic preservation mitigation measures with which a NFE must comply when performing the scope of work under a FEMA award. FEMA expects the NFE to include adequate third party provisions to facilitate compliance with such measures that the NFE has agreed to implement as a term and condition of the

FEMA award. The following sections provide brief discussion of a few of the applicable environmental and historic preservation statutes.

b. National Environmental Policy Act

i. The National Environmental Policy Act ("NEPA") requires FEMA to consider the environmental impact of proposed actions (such as awarding Federal grants and cooperative agreements), including adverse consequences and reasonable alternatives, before making decisions or taking actions that may significantly affect the quality of the human environment. *See* National Environmental Policy Act of 1969, Pub. L. No. 91-190 (1969) (codified as amended at 42 U.S.C. §§ 4321-4347); Standard Form 424D, ¶ 15.

ii. A NFE should not have a contractor proceed with contract work until FEMA has completed any necessary NEPA review and awarded the grant, cooperative agreement, and individual project under such grant or cooperative agreement.

iii. Occasionally, a NFE will request funding for an action that has been initiated and/or completed before FEMA has completed environmental review and documentation as required by NEPA and FEMA's implementing regulations at 44 C.F.R. Part 10 (Environmental Considerations) and the Council for Environmental Quality implementing regulations at title 40 of the C.F.R.

iv. It is FEMA policy that actions initiated and/or completed without fulfilling the specific documentation and procedural requirements of NEPA may not be considered for funding. There are, notably, statutory exclusions to this requirement, and FEMA may provide additional exceptions in emergency situations. *See* FEMA Environmental Planning and Historic Preservation Policy No. 108.024.4, *Projects Initiated Without Environmental Review Required by the National Environmental Policy Act* (NEPA) (Dec. 18, 2013).

v. The statutory exclusions and exceptions do not relieve FEMA of the responsibility to comply with other legal requirements under the National Historic Preservation Act, Endangered Species Act, Clean Water Act, other laws, and various executive orders. Furthermore, FEMA may not consider for funding work commenced before FEMA has completed review under these other legal requirements, even where NEPA review is not required.

c. Endangered Species Act

i. The Endangered Species Act ("ESA") requires all Federal agencies to consider the effects of their actions (such as grants and cooperative agreement awards) on listed species and their critical habitats. *See* Endangered Species Act of 1973, Pub. L. No. 93-205 (1973) (codified as amended at 16 U.S.C. §§ 1531-1544); Standard Form 424D, ¶ 15.

ii. FEMA must consult with the National Marine Fisheries Service or U.S. Fish and Wildlife Services to ensure that any proposed action funded under a grant or cooperative agreement is not likely to jeopardize the continued existence of any endangered or threatened species or result in in the destruction or adverse modification of a habitat. This consultation, if necessary, must take place before the action is taken, although there are exceptions for emergency actions. d. Clean Air Act

i. The Clean Air Act establishes the basic structure for regulating air pollutants, which requires the Environmental and Protection Agency ("*EPA*") to establish national air quality standards and states to adopt enforceable plans to achieve the standards. 42 U.S.C. §§ 7401-7671q.

ii. Section 306 of the Clean Air Act (42 U.S.C. § 7606) and EPA's implementing regulations at 2 C.F.R. Part 1523, subpart J, disqualify persons convicted of certain offenses from eligibility to receive any contract, subcontract, assistance, subassistance, loan, or other nonprocurement benefit or transaction that is prohibited by a Federal agency under the government debarment and suspension system if a person will perform any part of the transaction or award at the facility giving rise to the conviction and the person owns, leases, or supervises the facility.

iii. The Uniform Rules require a contractor to agree to comply with this and all other applicable standards, orders, or regulations issued pursuant to the Clean Air Act for contracts over $150,000. *See* Chapter IV, ¶ 12.a.vii and 2 C.F.R. Part 200, Appendix II, ¶ G; Standard Form 424D, ¶ 15.

e. Federal Water Pollution Control Act

i. The Federal Water Pollution Control Act ("Clean Water Act") establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. 33 U.S.C. §§ 1251-1387.

ii. Section 508 of the Clean Water Act (33 U.S.C. § 1368) and EPA's implementing regulations at 2 C.F.R. Part 1523, subpart J, disqualify persons convicted of certain offenses from eligibility to receive any contract, subcontract, assistance, subassistance, loan, or other nonprocurement benefit or transaction that is prohibited by a Federal agency under the government debarment and suspension system if a person will perform any part of the transaction or award at the facility giving rise to the conviction and the person owns, leases, or supervises the facility.

iii. The Uniform Rules require a contractor to agree to comply with this and all other applicable standards, orders, or regulations issued pursuant to the Clean Water Act for contracts over $150,000. *See* Chapter IV, ¶ 12.a.vii and 2 C.F.R. Part 200, Appendix II, ¶ G; Standard Form 424D, ¶ 15.

f. Recycled Products

i. A NFE that is a State agency or agency of a political subdivision of a State and its contractors must comply with section 6002 of the Resource Conservation and Recovery Act of 1976. 42 U.S.C. § 6962; 2 C.F.R. § 200.322.

ii. The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired by the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

iii. The Uniform Rules require a NFE to include provisions in its contracts for compliance with section 6002 of the Resource Conservation and Recovery Act of 1976. *See* Chapter IV, ¶ 12.a.xi and Chapter V, ¶ 7; 2 C.F.R. Part 200, Appendix II, ¶ K.

7. Davis-Bacon Act

a. When required by FEMA grant or cooperative agreement program legislation, all prime construction contracts in excess of $2,000 awarded by NFEs must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3144 and 3146-3148) as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 (Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction). *See* Chapter IV, ¶ 12.a.iv; 2 C.F.R. Part 200, Appendix II, ¶ D.

b. In accordance with the statute, a NFE's contractors must pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.

c. The Davis-Bacon Act only applies to the Emergency Management Preparedness Grant Program, Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program. It does not apply to other FEMA grant and cooperative agreement programs, such as the Public Assistance Grant Program.

8. Copeland "Anti-Kickback" Act

a. The Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by its implementing regulations at 29 C.F.R. Part 3 (Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States) apply to any NFE contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public

buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. This law prohibits a contractor from inducing, by any means, any employee to give up any part of his or her compensation to which he or she is otherwise entitled.

b. The Uniform Rules require a NFE to include a provision for compliance with the Copeland Anti-Kickback Act in all contracts *subject to* the Davis-Bacon Act. *See* Chapter IV, ¶ 12.a.iv; 2 C.F.R. Part 200, Appendix II, ¶ D.

9. Contract Work Hours and Safety Standards Act

a. The Uniform Rules require, where applicable, all contracts awarded by the NFE in excess of $100,000 that involve the employment of mechanics or laborers to include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 and 29 C.F.R. Part 1926. *See* Chapter IV, ¶ 12.a.v; 2 C.F.R. Part 200, Appendix II, ¶ E.

b. Under 40 U.S.C. § 3702, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

c. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of property or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence

10. Seismic Safety

a. All construction of new buildings for which FEMA award funding will be used must use appropriate seismic design and construction standards and practices pursuant to the Earthquake Hazard Reduction Act of 1977, Pub. L. No. 95-124 (1977) (codified as amended at 42 U.S.C. §§ 7701-7709) and Executive Order 12699, *Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction* (1990).

b. A NFE should include compliance with seismic safety provisions in its third party contracts for construction.

11. Hotel and Motel Fire Safety. The Hotel and Motel Fire Safety Act of 1990, Pub. L. No. 391 (1990) (codified at 15 U.S.C. § 2225a) prohibits, among other things, a NFE from using FEMA award funding to source contract costs to sponsor or fund in whole or in part a meeting, convention, conference, or training seminar that is conducted in, or that otherwise uses the rooms, facilities, or services of, a place of public accommodation that does not

meet the requirements of the fire prevention and control guidelines described in section 29 of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. § 2225).

12. Buy American Act.

    a. General. The Buy American Act is a major domestic preference statute governing procurement by the Federal government. 41 U.S.C. §§ 8301-8305; 48 C.F.R. Part 25. In brief, the Federal government is required to buy domestic "articles, materials, and property" when they are acquired for public use unless a specific exception applies. The Buy American Act, however, only applies to direct procurements by the Federal government and does not apply to procurement by NFEs even when using FEMA assistance funding.

    b. "Little Buy American Acts." In addition to the Buy American Act, Congress has passed numerous "Little Buy American Acts" to govern specific types of procurements that are not covered by the Buy American Act. There are currently no such Little Buy American Acts for FEMA grant and cooperative agreements subject to this circular.

    c. Stafford Act Grant Programs. The Disaster Mitigation Act of 2000 amended various provisions of the Stafford Act—this included Sections 404, 406, and 408 of the

       Stafford Act, which are the enabling authorities for the Hazard Mitigation Grant Program, Public Assistance Grant Program, and Individual and Households Program. Notably, Section 306(a) of the Disaster Mitigation Act of 2000 also had a general provision that provided that "No funds ***authorized to be appropriated*** under…any amendment made by [the Disaster Mitigation Act of 2000] may be expended by an entity unless the entity, in expending the funds, complies with chapter 83 of title 41." Disaster Mitigation Act of 2000, Pub. L. No. 106-390, § 306(a) (2000) (codified at 42 U.S.C. § 5206(a)) (emphasis added). There is, however, currently no authorization of appropriations for the Stafford Act, rendering Section 306(a) of the Disaster Mitigation Act of 2000 inapplicable to Stafford Act grant and cooperative agreements.

13. Federal Criminal Law. A NFE may not use funding under a FEMA award to violate any Federal criminal law either directly or through its contractors. Any such activity that FEMA administratively determines to violate a criminal law is ineligible for FEMA assistance, and FEMA may terminate an entire award based on the violation. The following provides a summary of several of those laws.

    a. Representational Statutes. Sections 203 and 205 of title 18 of the United States Code impose restrictions on outside activities of Federal employees involving representation of others before the Federal government. The prohibitions under 18 U.S.C. §§ 203 and 205 apply to all FEMA employees, including Disaster Reservists. Disaster Reservists are personnel authorized by the special hiring authority in the Stafford Act that are not full-time employees, but rather work on an on-call, intermittent basis to perform disaster response and recovery activities. In some cases, a NFE may hire a contractor to perform work under a FEMA award, and the contractor may have employees who are

also Disaster Reservists (not currently activated by FEMA) perform that work. These Disaster Reservists are prohibited from performing any representational activity on behalf of the contractor and NFE before any Federal agency, including FEMA.

b. False Statements Act. The False Statement Act sets forth liability for, among other things, any person who knowingly submits a false claim to the Federal government or causes another to submit a false claim to the government or knowingly makes a false record or statement to get a false claim paid by the government. 31 U.S.C. §§ 37293733. For example, a false claim could include false billing documentation submitted by a NFE from a third-party contractor under a FEMA award.

SECTON 002100
INSTRUCTIONS TO BIDDERS

BID SUBMITTALS AND CONDITIONS

Bids shall be submitted as stated below and per section 001100 Notice to Contractors

The following documents constitute a complete bid and are required to be submitted to form a responsive bid:

1. **004000 Bid Form**
2. **004100 Bid Schedule**
3. **004300 Bid Security**
4. **004336 Subcontractor Schedule**
5. **004500 Bidder Qualifications**
6. **004505 Indian Enterprise Qualifications Statement (if claimed)**
7. **004519 Non-Collusive Affidavit**

Each bid must be submitted in a sealed envelope, addressed:

Trinidad Rancheria,
c/o Trinidad Harbor and Tribal Operations Generators
1 Cher-Ae Lane
PO Box 630,
Trinidad Rancheria, CA 95570

The sealed envelope containing the bid must be plainly marked on the outside as:

BID FOR : TRINIDAD HARBOR AND TRIBAL OPERATIONS GENERATORS

The envelope should also bear on the outside the name of the bidder, bidder address, and bidder license number.

If forwarded by mail, the bid must be received by the date and time of opening. Any bids received after the time and date of opening resulting from untimely delay due to the mail system or other methods of conveyance will not be considered.

Bids received prior to the time of opening will be securely kept, unopened. The official who is to open the bids will decide when the specified time has arrived, and no bid received thereafter will be considered. No responsibility will attach to office personnel for the premature opening of a bid not properly addressed and identified. Telegraphic bids or modifications will not be considered.

Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof.

All bids must be made on the provided bid form and schedule. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid form must be fully completed and executed

when submitted. A conditional or qualified bid will not be accepted. Each signature page must bear an original signature, whether within or separate from this document.

To demonstrate Bidder's qualifications to perform the Work, Bidder shall have a current California Contractors License and Bonded in accordance with current California State Contractor's Law.
Acceptable licenses

- A – General Engineering
- B – General Building
- C 10 - Electrical

All Subcontractors shall be properly licensed for the services they will be providing.

After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done. No bidder may withdraw a bid within fourteen (14) calendar days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the Owner and the successful bidder.

WAGE REQUIREMENTS

Davis Bacon wage requirements shall apply to this project.
Contractor can obtain the current minimum prevailing wage rates at https://beta.sam.gov/
Applicable rates are for:

"General Decision Number: CA20210005 01/01/2021
Superseded General Decision Number: CA20200005
State: California
Construction Type: Building
Counties: Del Norte, Humboldt, Lake and Mendocino Counties in California.

BID REVIEW AND AWARD

The Owner may waive any informalities or minor defects or reject any and all bids.

Award will be made to the lowest responsive, responsible bidder with due consideration for Indian Preference.

BIDDING INFORMATION

Bidding and Contracting Manuals & Plan are available by email and as downloadable files from the Humboldt Builders Exchange. Printed copies can be obtained at the cost of production ($100.00) from Trinity Valley Consulting Engineers, Inc. at 67 Walnut Way, Willow Creek, CA 95573. (530 629-3000)

1. A pre-bid conference will be held on **Tuesday, August 17th, 2021**, at the project site, beginning at 10:00 AM PST. Prospective Bidders are not required to attend.
2. Bidders are advised to review **section 011000 summary of work**

The contract documents contain the provisions required for the construction of the project. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

Bidders must satisfy themselves as to the accuracy of the estimated quantities in the Bid Schedule (if any) by examining the site and reviewing the drawings and specifications including addenda (if applicable). The failure or omission to do this shall in no way relieve any bidders from any obligation in respect to his bid.

Requests for clarification must be in writing, addressed to the Owner, and received at least seven working days prior to the bid opening date. Owner provided clarifications and supplemental instructions will be issued as addenda to the specifications and provided to all Plan Holders no later than four working days prior to the bid opening date.

BIDDER QUALIFICATIONS

Bidders must fill out, sign and submit SECTION 004500 BIDDER QUALIFICATIONS form as part of the proposal. Bidders must also, if required, present additional satisfactory evidence that they are fully prepared with the necessary experience, capital, machinery and materials to furnish the articles called for and to conduct the work as required by the drawings and specifications.

NON-COLLUSIVE AFFIDAVIT

Each person submitting a bid for any portion of the work contemplated by the bidding documents shall execute an affidavit, in the form 004519 Non-Collusive Affidavit provided by the Owner, to the effect that he has not colluded with any other person, firm or corporation in regard to any bid submitted. Such affidavit shall be attached to the bid and be considered a part of the complete bid packet.

INDIAN PREFERENCE

Tribal and Native American Preference per:
Cher-Ae Heights Indian Community of the Trinidad Rancheria PROCUREMENT POLICY Adopted by the Cher-Ae Heights Indian Community of the Trinidad Rancheria (Trinidad Rancheria) Tribal Council by Resolution #TC-18-08 on April 20, 2018. The effective date of this Statement is April 20, 2018.

a. Issue the solicitation unrestricted to allow both non-Native American and qualified Native American-owned economic enterprises or organizations to submit bids and award shall be made to the qualified Native American-owned economic enterprises or organizations with the lowest responsive bid, if the bid is within the total maximum contract price established for the procurement and within the applicable range specified in Appendix A of the lowest non-Native American bid price; or

Attachment A If the bid from the qualified Native American-owned economic enterprise or organization is within the 10% range of the lowest, non-Native American firm, the Native American-owned firm will be given the opportunity to meet the lowest bid price. Should the Native American-owned firm refuse to meet the lower price, the bid shall then be awarded

to the responsive and responsible low bidder for the project. The Trinidad Rancheria Tribal Council reserves the right to reject any and all bids and to waive any irregularity or informality which is contained in any bid. All construction is subject to availability of funds.
Note: To meet the requirement of Attachment A the Native American-Owned firm will be required to adopt the bid schedule as submitted by the lowest responsive bidder.

BONDING REQUIREMENTS
Bid, Performance, and Payment bonds will be required for this project.

Bid bonds totaling no less than five percent (5%) of the total bid and payable to the Owner shall accompany any bid. A cashier's check may be used in lieu of a bid bond. As soon as the bid prices have been compared, the Owner will return the bonds of all except the three lowest responsible bidders. When the Agreement is executed, the bonds of the two remaining unsuccessful bidders will be returned. The bid bond of the successful bidder will be retained until the Payment and Performance bonds have been executed and approved, after which it will be returned.

Performance and Payment bonds, each totaling 100% of the Contract price, with a corporate surety approved by the Owner, shall be provided to the Owner when the Agreement is executed.

Attorneys-in-fact who sign Bid, Payment, and Performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

The Owner may make such investigations, as they deem necessary to determine the ability of the bidder to perform the work. Bidders shall be prepared to furnish such information and data for this purpose at the Owner's request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Agreement and to complete the work contemplated therein.

The successful bidder will be required to execute an Agreement and obtain the Performance and Payment bond, if required, within ten calendar days from the date when the Notice of Award is delivered to the bidder. In case of failure of the bidder to execute the Agreement, the Owner may at their option consider the bidder in default, in which case any bid bond accompanying the proposal shall become the property of the Owner.

The Owner, within fourteen calendar days of receipt of the Agreement and any required Performance and Payment bonds signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the bidder may provide a written notice of withdraw of his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

NOTICE TO PROCEED
The Owner will issue the Notice to Proceed within fourteen calendar days after the Agreement is fully executed. Should there be reasons why the Notice to Proceed cannot be issued within such period; the time may be extended by mutual agreement between the Owner and Contractor. If the

Notice to Proceed has not been issued within the acceptable period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

OTHER REQUIREMENTS

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

The successful bidder shall abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the General Conditions.

The successful bidder will be required to supply the names and addresses of major material suppliers and subcontractors to the Owner as part of their bid and within fourteen calendar days of receipt of the Notice to Proceed (supplemental to the Schedule of Subcontractors provided with bid). In the event that major suppliers or subcontractors differ from those provided during bidding the Contractor will be required to provide a fully executed subcontractor release in strict conformance to the California Subletting and Subcontracting Fair Practices Act Public Code Section 4100-4113.

The successful bidder shall supply submittals information in accordance with the submittals section of the contract documents.

CULTURAL MONITORING

Cultural monitoring is required under this contract agreement for any ground disturbing activities. During construction the Contractor is to adhere to the requirements of Section 013591 Constraints and Mitigation in the event of discovery of sensitive items as defined and explained therein. **It is the responsibility of the contractor to notify the owner 72 hours prior to conducting ground disturbing activities. Cultural Monitor will be provided by the Trinidad Rancheria at no cost to the contractor.**

FEDERAL REQUIREMENTS

1. The work to be performed under this Contract is on a project subject to section 7(b) of the Indian Self- Determination and Education Assistance Act (25 U.S.C. 450e (b) which requires that to the greatest extent feasible: (a) preference and opportunities for training and employment shall be given to Indians; and (b) preferences in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. The parties to this Contract shall comply with the provisions of section 7(b) of this Act. In connection with this Contract, the Contractor shall, to the greatest extent feasible, give preference in the award of any subcontracts to Indian organizations and Indian-owned Economic Enterprises, and preferences and opportunities for training and employment to Indians. The Contractor shall include this section 7(b) clause in every subcontract in connection with the Contract, and shall, at the direction of the Owner, take appropriate action pursuant to the subcontract upon a finding by the Owner that the subcontractor has violated this section 7(b) clause of this Act.

2. Compliance with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967 and as supplemented in Department of Labor regulations (41 CFR Chapter 60) (All construction contracts awarded in excess of $10,000).
3. Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR part 3) (All contracts and sub grants for construction or repair).
4. Compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) as supplemented by Department of Labor regulations (29 CFR part 5) (Construction contracts in excess of $2,000 when required by Federal grant program legislation).
5. Compliance with Sections 103 and 107 of the contract Work Hours and Safety Standards Act (40 U.S.C.).
6. 327-330) as supplemented by Department of Labor regulations (29 CFR part 5) (Construction contracts in excess of $2,000, and in excess of $2,500 for other contracts which involve the employment of mechanics or laborers).
7. Access to and retention of records for a period of three (3) years relating to this Project as required by 24 CFR 85.36(j) (10) and (11). Cooperation and provision of all necessary information and documentation as may be required for reporting relating to this project.
8. Affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible (24 CFR 85.36(e); E.O. 11625).
9. No award or subcontract at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension".
10. Compliance with the provisions of the Hatch Act (5 U.S.C. 1501-1508) and the Intergovernmental Personnel Act of 1970 as amended by Title VI of Civil Service Reform Act (Pub. L. 95-454 Section 4728) prohibiting use of federally appropriated funds for influencing or attempting to influence the award of any federal monies and to make such reports and disclosures as are required there under. The signing of the contract in which this Attachment is referenced is a certification of agreed compliance.
11. Prohibition against personal or financial interest in or benefit from this contract obtained by certain affiliates, associates, board members or employees of the Owner or its grantees, either from themselves, or their families, or business associates, during their tenure or for one year thereafter.
12. Compliance with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821, et seq.) and implementing regulations at 24 CFR 570.608, as well as compliance with the requirements regarding asbestos of 40 CFR Part 61 and 40 CFR Part 763, as well as 29 CFR 1910.1001 and 1926.58.
13. Except as Indian Preference requirements, compliance with prohibitions against discrimination as provided by Title VI of the Civil Rights Act of 1976 (Pub. L. 88-352), Age Discrimination Act of 1975, and the implementing regulations at 24 CFR Part 146, Section 504 of the Rehabilitation Act of 1973, as amended, 24 CFR Part 8, title VIII of the Civil Rights Act of 1968; 25 U.S.C. 1301-1303.
14. In part, because of agreements regarding the monies utilized to fund this contract and federal requirements, the Owner has reserved certain rights to licenses and copyrights regarding work developed, or purchases made, relating to said funds.

SECTION 002500
PRE-BID CONFERENCE

PART 1 GENERAL

1.1 Description

A. The Pre-bid Conference is a formal meeting held and hosted by the Owner, technical support personnel, and the Project Manager to officially convey the vital aspects of the project, bidding process and requirements, and to field the inquiries of potential bidders. In addition to covering the key aspects of the construction project and the bidding formalities prospective bidders will also have an opportunity to visit the project site.

B. Attendance of prospective bidders at the pre-bid meeting is **not mandatory**.

C. The pre-bid meeting is scheduled for **Tuesday, August 17th, 2021 at 10:00 AM PST**.

D. The pre-bid conference will be held at project site or as listed below:

1 Cher-Ae Lane, Trinidad, CA

PART 3 EXECUTION (NOT USED)

SECTION 004000
BID FORM

PROPOSAL OF

_____

(hereinafter called "Bidder"), organized and existing under the laws of the State of California, doing business as

_____

(a corporation, a partnership, an individual, etc.)

to the **Trinidad Rancheria** (hereinafter called "Owner").

In compliance with the Advertisement for Bids, Bidder hereby proposes to perform all work for the completion of the project as described under Section 011000 and all other appurtenant items in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated in the Bid Schedule, also included herein.

By submission of this Bid**,** the Bidder certifies, and in the case of a joint Bid each party thereto certifies as to Bidder's organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date, to be specified in the Notice to Proceed, and to fully complete the project within the allocated timeframe**.** Bidder further agrees to pay as liquidated damages, the sum of $1,000.00 per calendar day for every day beyond the agreed upon date of completion as provided in the General Provisions (Time for Completion and Liquidated Damages section).

Bid Grand Total Amount: _____

(*Numeric Amount)*

_____

(Written Amount)

Bidder agrees to perform all the work described in the Contract Documents for the unit prices or lump sum stated in the Bid Schedule.

Bid Respectfully Submitted:

Date

Bidder

Address

License No. Expiration Date

Print Name Title

Signature

SEAL – (if BID is by a corporation)

004100
BID SCHEDULE

Item #	DESCRIPTION	Unit	Quantity	Unit Price	Total
TRIBAL OPERATIONS CENTER					
1	GENERATOR SYSTEM	LS	1		
2	MISC CONCRETE	LS	1		
3	FENCING	LS	1		
4	PROPANE CONNECTION	LS	1		
EMERGENCY OPERATIONS CENTER					
5	GENERATOR SYSTEM	LS	1		
6	MISC CONCRETE	LS	1		
7	FENCING	LS	1		
8	PROPANE CONNECTION	LS	1		
TRINIDAD HARBOR					
9	GENERATOR SYSTEM	LS	1		
10	MISC CONCRETE	LS	1		
11	FENCING	LS	1		
12	PROPANE CONNECTION	LS	1		

Bid Grand Total _____

SECTION 004300
BID SECURITY

PART 1 GENERAL

1.1 Description

A. The Bid Guarantee provided by the Contractor is a submittal, with the Bid, affirming that the Contractor has the financial capability to undertake the proposed project.

B. The Bid Security for this project will need to be provided in one of the acceptable forms listed under Part 2 below and shall be for no less than **five percent (5%)** of the total Bid.

PART 2 PRODUCTS

2.1 Bid Security Types

A. Per industry standard and applicable regulations there will be four (4) types of acceptable Bid Security for this project. the security types are as follows:

a. Bank Certified Check
b. Bank Draft
c. US Government Bond
d. Surety Bid Bond

PART 3 EXECUTION

3.1 Surety Bid Bond

A. For Surety Bid Bonds a form has been included in this Section to be filled out by the Contractor and provided with the Bid.

SURETY BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

_____ as Principal, and

_____ as Surety, are hereby held and firmly bound unto the **Trinidad Rancheria**, as Owner in the penal sum of _____ _____for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assignees.

Signed, this_____ day of _____ , 20_____.

The Condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the completion of the **Trinidad Harbor and Tribal Operations Generators** as described under Section 011000 of the Contract Documents and all other appurtenant items in strict accordance with the contract documents, within the time set forth therein, and at the prices stated in the Bid Schedule.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the form attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation, shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____

Principal

BY: _____ (Seal)

_____

Surety

BY: _____ (Seal)

IMPORTANT - Surety companies executing BONDS must be authorized to transact business in the state of California.

(Submit with Bid)

SUBCONTRACTOR SCHEDULE

Provided in strict accordance with the Miller Act, Prompt Payment Act, Small Business Act, and California Subletting and Subcontracting Fair Practices Act Public Code Section 4100-4113.

The undersigned bidder certifies that he has used the bids of the following subcontractors in making up his bid and that the subcontractors listed will be used for the work on which they bid.

Subcontractor Name: _____
Address: _____
Contractor Lic #: _____
DIR #: _____
Item or Portion of work to be done by Subcontractor:
_____
_____
_____

Subcontractor Name: _____
Address: _____
Contractor Lic #: _____
DIR #: _____
Item or Portion of work to be done by Subcontractor:
_____
_____
_____

Subcontractor Name: _____
Address: _____
Contractor Lic #: _____
DIR #: _____
Item or Portion of work to be done by Subcontractor:
_____
_____
_____

(**If Space is Insufficient for listing all Subcontractors please attach additional sheets)**

The foregoing is submitted by the bidder in accordance with the acts listed above, and the bidder, if awarded the contract, agrees to fully and promptly comply with such Acts including payment to subcontractors for "satisfactory" performance within seven days of government payment receipt. Bidder certifies and warrants that all subcontractors listed above are, and when performing their subcontracts will be, dully licensed by the State of California to perform the work or services to be done by the subcontractor.

Name of Bidder: _____

Authorized Signature by: _____

Title of Signer: _____

SECTION 004500
BIDDER QUALIFICATIONS

Legal Business Name: _____

D.B.A.: _____

Point of Contact: _____

SSN or EIN: _____

Business Address: _____

City: _____ Telephone: _____

CA State License Number: _____ Type(s): _____ DIR # _____

DUNS: _____

How long in business? _____ How many employees? _____

Are you an equal opportunity employer? Yes / No (Circle One)

Are you eligible to perform state or federal government work? Yes / No (Circle One)

Bank Reference:

_____

_____

_____

Insurance carrier:

_____

_____

_____

List three similar construction jobs by name and address completed within the last five (5) years. Provide Point of Contact Name and Number for each job:

List Major Construction projects your organization has under contract on this date (attach additional sheets if needed to fully list current projects):

Project Name	Owner	Contract Amount	% Complete	Scheduled Completion

List the construction experience of the principal individuals of your organization (include designated foreman for this job):

Name	Title	Experience (years)

Conflict of Interest: Are you or any member of your family related to any employee of the Owner or member of the governing board of the Owner?

Yes / No (Circle One) If yes, please explain relationship(s):

_____

_____

Have you ever failed to complete any work awarded to you? Yes / No (Circle One) if yes, attach a description of each occurrence.

Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a construction contract? Yes / No (Circle One) if yes, attach a description of each occurrence.

Have you received any citation or been assessed penalties for safety violations from any governmental agency? Yes / No (Circle One) if yes, attach a description of each citation.

Have you been fined, penalized, or otherwise found to have violated any prevailing wage or labor code provision within the past five (5) years? Yes / No (Circle One) if yes, attach a description of each occurrence.

Have you had any claims, litigation, or disputes ending in mediation or arbitration, or termination of contract for cause associated with any project in the past five (5) years? Yes / No (Circle One) if yes, attach a description of each instance including details of the total claim amount, settlement amount, and the owner's point of contact name and phone number.

In the last five (5) years has your firm, or any firm with which any of your company's owners, officers, or partners were or are associated with, been debarred, disqualified, removed, or otherwise prevented from bidding on, or completing, any government agency or public works projects for any reason? Yes / No (Circle One) if yes, attach a description of each instance including details and owners' point of contact name and phone number.

In the last five (5) years has your firm been denied an award of a government agency or public works contract based on a finding that your company was not a responsible bidder? Yes / No (Circle One) if yes, attach a description of each instance including details and the owner's point of contact name and phone number.

At any time in the past five (5) years has your firm been assessed and paid liquidated damages after completion of a project, under a construction contract with either a public or private owner? Yes / No (Circle One) if yes, attach a description of each instance including details and the owner's name and phone number.

By signing and submitting this form you are attesting that the information provided is true and correct, to the best of your ability and knowledge. You also acknowledge that deliberate falsification of information submitted under this section can and will be used as grounds for disqualification as a responsible bidder for this project.

_____ Date: _____

Signature of License Holder

_____ Date: _____

Signature of Company Representative (if different)

SECTION 004505
STATEMENT OF QUALIFICATIONS
ALASKA NATIVE OR INDIAN OWNED ENTERPRISES

The undersigned certifies under oath the truth and correctness of all answers to questions made hereinafter:

Applicant wishes to qualify as an "Economic Enterprise" as defined in Section 3(e) of the Indian Financing Act of 1974 (P.L. 93-262); that is: "an Indian-Owned... commercial, industrial or business activity established or organized for the purpose of profit: Provided, that such Indian ownership shall constitute not less than fifty-one percent (51%) of the enterprise", or,

A "Tribal Organization" as defined in Section 4(c) of the Indian Self-Determination and Education Assistance Act (P.L. 93-638); that is: "the recognized governing body of any Indian Tribe; any legally established organization of Indians which is controlled, sanctioned or chartered by such governing body or which is democratically elected by the adult members of the Indian community to be served by such organization and which includes the maximum participation of Indians in all phases of its activities: Provided, that in any case where a contract is let or grant made to an organization to perform services benefiting more than one Indian Tribe, the approval of each such Indian Tribe shall be a prerequisite to the letting or making of such contract or grant..."

1. Legal Name of Enterprise or Organization:

_____

Address:

_____

_____

_____

Telephone No.: _____ Fax No.: _____

2. Check One:

_____ Corporation

_____ Joint Venture

_____ Partnership

_____ Sole Proprietorship

_____ Other (Specify) _____

3. If a Corporation, answer the following:

Date of incorporation: _____ State of Incorporation: _____

Give the names and addresses of the officers of the corporation and establish whether they are Indian (I) or Non- Indian (NI).

Name and SS#	I or NI	Title	Address	% of Stock Ownership
		President		
		Vice-President		
		Secretary/Clerk		
		Treasurer		

Complete the following information on any stockholder who is not listed in C above, owning 51% or more of the stock. Establish whether they are Indian (I) or Non-Indian (NI).

Name	Social Security #	I or NI	Address	% of Stock Ownership

Will any officer listed be engaged in outside employment? If yes please provide their name, title, and how many hours per week of outside employment they will be performing.

_____ Yes _____ No

4. If a Sole Proprietorship or Partnership, answer the following:

Date Organization Formerly Created: _____

Give the following information on the individual or partners and establish whether they are Indian (I) or Non-Indian (NI).

Sole Proprietorship:

Name	Social Security #	I or NI	Address

Partnership:

Name	Social Security #	I or NI	Address	% Ownership

Will any partner listed be engaged in outside employment? If yes please provide their name, title, and how many hours per week of outside employment they will be performing.

_____ Yes _____ No

5. If a joint Venture, provide the following:

Date of Joint Venture Agreement: _____

Attach the following information for each member of the joint venture. Identify the Principal Spokesperson.

Name: _____

Address: _____

Telephone Number: _____

6. Does this enterprise have any subsidiaries or affiliates or is it a subsidiary or affiliate of another concern?

_____ Yes _____ No

If yes, complete the following:

Name and Address of subsidiary, affiliate or other concerns	Description of Relationship

7. Does this enterprise or any person listed above have or intend to enter into any type of agreement with any other concern or person which relates to or affects the on-going administration, management or operations of this enterprise? These include but are not limited to management, and joint venture agreements and any arrangement or contract involving the provision of such compensated services as administrative assistance, data processing, management consulting of all types, marketing, purchasing, production or other type of compensated assistance.

_____ Yes _____ No

If yes, attach a copy of any written agreement or an explanation of any oral or intended agreement.

8. Indicate the core crew employees in your work force, their job titles, and whether they are Indian or Non-Indian. Core crew is defined as an individual who is a current bona-fide individual who is regularly employed by the contractor in a supervisory or other key position when work is available.

Core Crew

Name	Title	I or NI

9. Over the past three years, what has been the average number of employees? _____

10. Attach evidence showing membership in a tribe or other evidence of enrollment in a federally recognized tribe or qualification as a California Indian according to federal law.

11. Attach a certified copy of the charter, articles of incorporation, by-laws, partnership agreement, joint venture agreement and/or other pertinent organizational documentation.

Omission of any information may be cause for this statement not receiving timely and complete consideration.

The person(s) signing below certify that all information in the statement, including exhibits and attachments, is true and correct.

Print or type name with applicable signature(s).

If applicant is a Sole Proprietor, sign below:

Name	Signature	Date

If applicant is in a Partnership or Joint Venture, all Partners must sign below, attached additional signature pages, if needed:

Name	Signature	Date
Name	Signature	Date

If applicant is a corporation, affix corporate seal:

Name	President's Signature	Date

Attested by: _____
Corporate Officer Signature

SECTION 004519
NON-COLLUSIVE AFFIDAVIT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of _____

County of _____

_____,
being first duly sworn, deposes and states:

That s/he is, _____
the party making the foregoing proposal for bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Owner or any person interested in the proposed contract, and that all statements in said proposal for bid are true.

Project Name: _____

Location: _____

_____
(**Signature must be notarized**)

_____
(Name and title)

_____
(Date)

Subscribed and Sworn (or affirmed) to before me on this _____ day of _____, 20___ by _____ proved to me on the basis of satisfactory evidence to be the person who appeared before me.

_____
Signature of Notary

Seal

SECTION 005100
LETTER OF INTENT TO AWARD
[EXAMPLE]

[Contractor Name and Address]

The **TRINIDAD RANCHERIA** conducted a formal Request for Bids for the **Trinidad Harbor and Tribal Operations Generators** Project, in **Trinidad, California**. Proposals were received by **Trinidad Rancheria** until 2:00 PM (PST) on **Wednesday, June 30th, 2021**. Proposals are a matter of public information.

We are pleased to inform you that your proposal in the amount of:

_____

and a total construction time of: **90** Calendar Days
has been selected by the **Trinidad Rancheria**.

Please prepare and submit by _____ the necessary documentation noted below and contained within the Bidding & Contracting Manual so that we may prepare the Construction Contract and issue a Notice to Proceed to you for this project:

1. Construction Contract Security
2. Certificate of Insurances
3. Wage Determination Schedule
4. Schedule of Amounts for Contract Payments
5. Tentative Construction Schedule

If you have any questions or need additional information, please feel free to contact

Leslie Sanders, Transportation Manager
Transportation and Land Use, Trinidad Rancheria
(707) 825-2738 Office
(707) 601-5754 Cell
lsanders@TrinidadRancheria.com

Respectfully,

SECTION 005200
CONSTRUCTION CONTRACT – Sample

THIS CONTRACT AGREEMENT IS BETWEEN:

Trinidad Rancheria	Contractor Name
P.O. Box 630	PO Box
Trinidad, CA 95570	Contractor Address
707-677-0211	Contractor Phone Number
	EIN #

****

FOR THE TRINIDAD RANCHERIA TRIBAL COUNCIL

Department:

Contact Person:

Phone Number:

****

Brief Description of Contract:

Description

_____ _____ _____

Contract Number Fiscal Department Date

Reviewed By These Departments:

CEO: _____ FISCAL: ___

dated: _____ dated: _____

Independent Contractor Agreement

CONTRACT FOR SERVICES

This Agreement, made this day, _____ between _____ hereinafter called Contractor, and the Trinidad Rancheria, hereinafter called the Tribe, witnesseth:

1. **Effective Dates.** This Agreement shall become effective as of the date of execution by Tribe, and shall continue until _____, 2021, unless amended or terminated in accordance with the provisions in Articles 19, 20 or 21 of this agreement.

2. **Independent Contractor.** It is the express intent of the parties that Contractor is an independent Contractor and not any employee, agent, joint venture or partner of the Tribe. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Tribe and Contractor or any employee or agent of Contractor. All work product developed by Contractor shall be deemed owned and assigned to Tribe. This Agreement is not authority for Contractor to act for Tribe as its agent or make commitments for Tribe. Contractor retains the discretion in performing the tasks assigned within the scope of work specified. Both parties acknowledge that Contractor is not an employee for state or federal tax purposes. Contractor shall retain the right to perform services for others during the term of this Agreement so long as the performance of these services does not interfere or conflict with the completion of the Project.

3. **Taxpayer Identification Number.** Prior to commencing the Project, Contractor must provide Tribe with a valid Employer Identification Number (EIN) from the IRS. If Contractor does not have a valid EIN, Contractor must complete and submit a duly executed Form W-9 to the IRS and obtain an EIN before payment can be made.

4. **Tax Reporting and Filing.** Contractor acknowledges and agrees that he/she shall be responsible (as a self-employed individual) for filing all tax returns, tax declarations, and tax schedules, and for the payment of all taxes required, when due, with respect to any and all compensation earned by Contractor under this Agreement. Tribe will not withhold any employment taxes from compensation it pays Contractor. Rather, Tribe will report the amount it pays Contractor on IRS Forms 1099, to the extent required to do so under applicable Internal Revenue Code provisions and state or local law. Contractor is not the

Tribe's employee, and Contractor is responsible for paying all required state and federal taxes.

5. **No Benefits.** None of the benefits, if any, which are provided by the Tribe to its employees, shall be available to Contractor (or his employees, or sub-Contractors, if any, which for purposes of this paragraph shall be included in the term "Contractor").

Contractor's exclusion from benefit programs maintained by Tribe is a material term of the terms of compensation negotiated by the Parties, and is not premised on Contractor's status as a non-employee with respect to Tribe. To the extent that Contractor may become eligible for any benefit programs maintained by Tribe (regardless of the timing of or reason for eligibility). Contractor hereby waives the right to participate in these programs. Contractor's waiver is not conditioned on any representation or assumption concerning Contractor's status under the common law test. Contractor agrees that, consistent with an independent Contractor status, Contractor will not apply for any government-sponsored benefits that are intended to apply to employees, including, but not limited to, unemployment benefits.

6. **Project Covered.** The Tribe hereby engages Contractor to provide the following services, hereinafter called the Project based on _____

Items of work to be provided by contractor will include, but not be limited to, the following:

- *PROJECT NAME,*
  BIDDING AND CONSTRUCTION DOCUMENTS

7. **Method of Performing Services.** Contractor will determine the method, details and means of performing the above-described services in compliance with the terms of this contract. The Contractor shall provide all services in accordance with applicable, local, tribal, state, federal laws, and the terms and conditions of this agreement.

8. **No Training or Instructions.** Tribe enters into this Agreement based on Contractor's demonstrated ability to perform the type of services that it believes, and that Contractor has represented, are needed to accomplish the Project. Consequently, the Tribe does not contemplate providing Contractor with any training or instructions with respect to the Project.

9. **Employment of Assistants.** Contractor may, at Contractor's own expense, employ such assistants, as Contractor deems necessary to perform the services required of Contractor by this Agreement. The Tribe may not control, direct, or supervise Contractor's assistants or employees in the performance of those services. Contractor assumes full and sole responsibility for the payment of all compensation and expenses of unemployment insurance,

Social Security, disability insurance and other applicable withholdings**.** Contractor agrees to provide proof of workers' compensation insurance for assistants he/she engages. Contractor is responsible for acts or omissions of employees, sub-Contractors and other persons performing portions of work under the contract for the Contractor. Contractor agrees to hold Tribe harmless against any and all liabilities attributable to the obligations imposed on Contractor under this Paragraph.

10. Compensation. In consideration for the services to be performed by Contractor, Tribe agrees to pay Contractor a sum not to exceed :

_____

See Contract Item List: Attachment A.

Payment for work rendered by Contractor shall be made payable to Account Number:

_____

11. Method of Payment:

a) Invoices: Contractor shall submit invoices by the 10th of each month, for all work rendered during the preceding month.

b) Date for payment of compensation: Invoices received for work completed, and accepted according to terms, conditions, and specifications of this Contract will be processed and checks issued (not to exceed 60 days from the date the invoice is received) by the Trinidad Rancheria Fiscal Department

12. Expenses. Consultant shall be responsible for all costs and expenses incidental to the performance of services to the Tribe, including but not limited to; all costs of equipment provided by Consultant, all fees, fines, licenses, bonds or taxes required of or imposed against Consultant and all other of Consultant's costs of doing business. Tribe shall not be responsible for expenses incurred by Consultant in performing services for Tribe.

13. Equipment, Tools, Materials, or Supplies. Contractor shall provide all equipment, tools, materials, or supplies. Tribe shall not be responsible for expenses incurred by Contractor in performing services for Tribe.

14. Contractor's Business Activities

(a) Contractor is an independent Contractor and may engage in other business activities at the same time service is provided to Tribe

(b) Contractor shall not during the term of this Agreement solicit Tribe's employees or accounts on behalf of Contractor or another entity.

(c) Contractor shall devote such time, attention, and energy to the business and affairs of Tribe as requested by Tribe, and in any event no less that the amount of time required to do a satisfactory completion of the required Project.

15. **Confidential Information**. Contractor shall not disclose, publish or authorize others to publish design data, trade secrets, drawings, specifications, reports or other information pertaining to the work assigned to Contractor by Tribe. Contractor agrees to refrain from disclosing, during the term of this agreement, or at any time thereafter, any of the information to any third person or persons, or business organizations without the prior written consent of the Tribe.

16. **Representations and Warranties**. Contractor represents and warrants

(a) that Contractor has no obligations, legal or otherwise, inconsistent with the terms of this Agreement or with Contractor's undertaking this relationship with Tribe

(b) that the performance of the services called for by this Agreement do not and will not violate any applicable law, rule or regulation or any proprietary or other right of any third party,

(d) that Contractor has not entered into or will enter into any agreement (whether oral or written) in conflict with this Agreement.

17. **Assignment.** The rights of each party under this Agreement are personal to that party and may not be assigned or transferred to any other person, firm, corporation, or other entity without the prior, express, and written consent of the other party.

18. **Cooperation of Tribe.** Tribe agrees to comply with all reasonable requests of Contractor (and provide access to all documents) reasonably necessary to the performance of Contractor's duties under this Agreement.

19. **Termination.** Either party may terminate this Agreement upon ten (10) days written notice to the address of the other party contained in this Agreement.

20. **Termination by Default or Material Breach.** In the case of default or material breach of this Agreement by one Party, the other Party shall have the right to terminate this Agreement with no advance notice, only after providing the breaching Party with notice of the breach and the breaching Party fails to cure the breach within ten (10) days after receipt of the notice of breach. For the purposes of this section, a material breach of this Agreement shall include, but not be limited to the following: failure to provide services as specified, failure to complete project within the time specified in Section 1.

21. **Termination for Failure to Make Agreed-Upon Payments.** Should Tribe fail to pay Contractor all or any part of the compensation set forth in Article 4 of this Agreement as specified, Contractor may terminate this Agreement if Tribe does not remedy such failure within thirty (30) days of receipt of written notice from Contractor of the breach.

22. **Notices.** Any notice provided for or concerning this Agreement shall be in writing and be deemed sufficiently given when sent by certified or registered mail to the respective address as set forth in this section:

If to Contractor:

Attn:

If to Tribe: Trinidad Rancheria

Attn: *Chairperson*

PO Box 630

Trinidad, CA 95570

Phone: 707-677-0211

23. **Indemnification Agreement.** The Contractor agrees to protect, defend, indemnify and hold harmless the Trinidad Rancheria, and its officers, employees and agents free and harmless from and against any and all losses, penalties, damages settlements, costs, charges, professional fees or other expenses or liability of every kind and character arising out of or relating to any and all claims, liens, demands, obligations, actions, proceeding or causes of action of every kind and character in connection with or arising directly or indirectly out of this Agreement and/or the performance hereof. Without limiting the generality of the foregoing, any and all such claims, etc., relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged infringement of any patent, trademark, copyright (or application for any therefore) or of any other tangible or intangible statute, ordinance, administrative order, rule or regulation, or decree of any court, shall be included in the indemnity hereunder. The Contractor further agrees to investigate, handle, respond to, provide defense for and defend any such claims, etc., at his sole expense and agrees to bear all other costs and expenses related hereto, even if it (claims, etc.) is groundless, false or fraudulent.

24. **Entire Agreement of the Parties.** This Agreement supersedes any and all agreements, either oral or written, between the parties hereto with respect to the rendering of services by Contractor for Tribe and contains all the covenants and agreements between the parties with

respect to the rendering of such services in any manner whatsoever. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which is not embodied herein.

~~**25. Sovereign Immunity Not Waived.** Nothing in this Agreement shall be deemed or construed to be a waiver of the sovereign immunity of the Trinidad Rancheria, its officials, its entities, or employees acting within their official or individual capacities.~~

LIMITED WAIVER OF SOVEREIGN IMMUNITY

(a) PROJECT OWNER is a federally recognized Indian tribe, and as such possesses sovereign immunity from suit. By executing this Contract, and notwithstanding any other provision herein, PROJECT OWNER does not waive, limit or modify its sovereign immunity from unconsented suit, arbitration, or judicial litigation, which immunity is hereby expressly reserved and asserted, except as expressly provided for in this provision of this Contract titled "Limited Waiver of Sovereign Immunity."

(b) Scope of Waiver of Sovereign Immunity. Subject to the terms and conditions contained in this section, PROJECT OWNER hereby expressly grants to the Contractor (and to no other party) an irrevocable limited waiver of PROJECT OWNER's sovereign immunity from unconsented suit and consents irrevocably and to suit exclusively in accordance with the terms of this section.

(c) Procedural Requirements. The limited waiver by PROJECT OWNER of its sovereign immunity as to unconsented suit is effective if, and only if, each and every one of the following conditions is met:

1. *The claim is made by the Contractor and not by any other person or entity whatsoever;*
2. *The claim alleges a breach by PROJECT OWNER of one or more of the specific obligations or duties expressly assumed by PROJECT OWNER under the terms of this Contract;*
3. *The claim seeks either payment of a specified sum, or some specific action or discontinuance of some action, by PROJECT OWNER to bring PROJECT OWNER into full compliance with the duties and obligations expressly assumed by PROJECT OWNER under this Contract;*
4. *The claim is made in a detailed written statement to PROJECT OWNER, which is provided to PROJECT OWNER within 30 days after the claim accrues or is discovered on the exercise of due diligence, stating the specific action or discontinuance of action by PROJECT OWNER that would cure the alleged breach or non-performance, or the sum of money claimed to be due and owing from PROJECT OWNER to the Contractor by reason of such specific breach or non-performance of this Contract, and PROJECT OWNER shall have 30 calendar days to cure or cause the cure of such*

breach or non-performance or to make such payment before judicial proceedings may be instituted; Provided, however, that this cure period may be reasonably extended in the sole discretion of the Contractor as long as PROJECT OWNER is making a good faith effort to cure such breach or non-performance; and

5. *Notwithstanding any applicable statute of limitations or other law, with respect to any claim authorized herein, initial suit, as authorized herein, shall be commenced within the later of one (1) year after the claim accrues or is discovered on the exercise of due diligence, or such claim shall be forever barred.*

(d) Additional Limitations on Waiver.

1. *Effective Duration of the Waiver. Notwithstanding any applicable statute of limitations or other law, and notwithstanding any other terms or conditions in this section or this Contract, the limited waiver granted herein shall be enforceable only for one (1) year following the date of the termination of this Contract, and only as to claims arising during the effective period of this Contract, except that the waiver shall remain effective for any proceedings then pending and all appeals therefrom.*
2. *Recipient of Waiver. The recipient of the benefit of this limited waiver of sovereign immunity is only the Contractor. This limited waiver of sovereign immunity shall not extend to or be used for or to the benefit of any other person or entity of any kind or description, whatsoever, including any successor or assign of the Contractor.*
3. *Types of Claims Allowed. This waiver of immunity is strictly limited to suits seeking payment of amounts purportedly owed under the provisions of this Contract or for other breach or non-performance under this Contract. PROJECT OWNER does not waive its sovereign immunity with respect to any other theories of recovery.*
4. *Jurisdiction. To the extent jurisdiction obtains, the Parties consent to the jurisdiction of, venue in, to be sued in, and to accept and be bound by any order or judgment of only the following courts: Humboldt County Superior Court and any appellate court of competent jurisdiction on appeal thereof.*
5. *Governing Law. Any disputes or matters of interpretation of this Contract shall be governed by the law of the Trinidad Rancheria. If there is no law of the Trinidad Rancheria on point, the parties and court shall look first to the law of the United States of America, and then, if there is no applicable United States' law, the law of the State of California.*
6. *Limits on Assets Available to Satisfy Judgment. Except as expressly stated herein, nothing in this section or this Contract shall be construed as a waiver or consent to the levy of any judgment, lien, or attachment on any property, interest in property or income of PROJECT OWNER other than the following. A judgment for or award of money damages against PROJECT OWNER pursuant to the limited waiver of sovereign immunity as set forth in this section may be satisfied only from the following proceeds of PROJECT OWNER: revenues earned from the operation of the Trinidad pier, restaurant, vacation rental, boat storage and moorage operations, parking operations, and, to the extent available and allowed under applicable law, the grant funds awarded to PROJECT OWNER for payment of the costs of this Project. Provided, however, that such limited waiver of immunity specifically does not allow for recovery of attorneys fees or costs or expenses, post-judgment interest, or consequential or punitive damages.*

26. Termination for Convenience of the Tribe. The Chairman of the Tribe, by written notice, may terminate this contract subject to Section 20, in whole, or in part, when it is in the Tribe's interest. If this contract is terminated, the Tribe shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

27. Waivers. The failure of either party to this Agreement to insist upon the performance of any of the terms and conditions of this Agreement, or the waiver of any breach of any of the terms and conditions of this Agreement, shall not be construed as thereafter waiving any such terms and condition, but the same shall continue and remain in full force and effect as if no such forbearance or waiver had occurred.

28. Modification of Agreement. Any modification of this Agreement or additional obligation by either party in connection with this Agreement shall be binding only if placed in writing and signed by each party or an authorized representative of each party.

29. Governing Law. This Agreement shall be governed by, construed, and enforced in accordance with the laws and ordinances of the Trinidad Rancheria. The parties hereto agree that all actions and proceedings relating directly or indirectly hereto shall be litigated in the Humboldt County Superior, and the parties expressly consent to the jurisdiction of the Humboldt County Superior Court and to venue therein and consent to service of process in any such action or proceeding by certified registered mail of the summons and complaint therein directed to the parties at their respective addresses set forth in this Agreement. By agreeing to this venue, the Tribe does not waive its sovereign immunity, or its right to raise sovereign immunity as a defense.

30. Headings. The titles to the paragraphs of this Agreement are solely for the convenience of the parties and shall not be used to explain, modify, simplify, or aid in the interpretation of the provisions of this Agreement.

31. Independent Counsel. Contractor acknowledges that they have had the opportunity to consult legal counsel in regard to this Agreement. Contractor has read and understands this Agreement and is fully aware of its legal effect and that Contractor has entered into it freely and voluntarily and based on Contractor's own judgment, and not on any representations or promises other than those contained in this Agreement.

The Parties have duly executed this Agreement as of the date first written above.

_____ _____

Date

_____ _____

Date

END OF SECTION 005200

SECTION 005500
NOTICE TO PROCEED - EXAMPLE

Dated: _____

Project: _____
Owner: _____
Owner's Contract Number: _____
Engineer's Project Number: _____
Contractor: _____
Contractor's Address: _____
_____
_____
_____

You are notified that the Contract times under the above contract are as follows:

Contract Start Date (on or Before) _____

Contract Time (Calendar Days) _____

Substantial Completion By _____

Days to Substantial Completion _____

Readiness for Final Payment By _____

Calendar Days to Readiness for Final Payment _____

_____
Owner (please print or type)

_____ _____
Owner Signature Date

CC: Trinity Valley Consulting Engineers

SECTION 006100
CONTRACT SECURITY

SECTION 1 GENERAL

1.1 Section Includes

A. The Construction Contract Security provided by the Contractor is a financial guarantee that the project will be satisfactorily completed at the cost of the bid amount to the Owner.

1.2 Submittals

A. A Contract Security will be required to be submitted to the Owner in concert with ratification of the Contract Agreement.

1.3 Measurement and Payment

A. Payment for the Construction Contract Security shall be paid as a lump sum amount, to be billed as an item under the first partial payment request for the project. The amount paid shall reflect the price provided in the Bid Schedule.

SECTION 2 PRODUCTS

2.1 Construction Contract Security Types

A. Contract Security must be provided at a minimum of 100% of the total amount of the contract including all costs itemized per section 004100 and the cost of the security, if not also itemized per section 004100. The following contract securities are required to meet the construction guarantee for this project:

a. The successful Bidder shall furnish a payment bond and a performance bond, each in the amount of 100% of the contract amount, after receiving the Letter of Intent to Award.
b. "Performance Bond" and "Payment Bond" are executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

SECTION 3 EXECUTION

3.1 Sample forms have been provided under this section, for convenience.

PERFORMANCE BOND FORM

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name and Address of Contractor)

a _____, hereinafter called Principal, and _____
(Corporation Partnership or Individual) (Name and Address of Surety)

_____

hereinafter called Surety, are held and firmly bound unto the **Trinidad Rancheria**, hereinafter called Owner, in the penal sum of

_____

$ _____, being one-hundred percent (100%) of the contract amount in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a contract with the Owner, dated the _____ day of _____, 20___, a copy of which is hereto attached and made a part hereof for the completion of the

_____

including the work as described under Section 011000 of the Contract Manual, and all other appurtenant items in strict accordance with the contract documents, within the time set forth therein, and at the prices stated in the Bid Schedule.

NOW THEREFORE, if the Principal shall, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed there under or the TECHNICAL SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the TECHNICAL SPECIFICATIONS.

PROVIDED FURTHER, that no final settlement between the OWNER and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts one of which shall be deemed an original, this the _____ day of _____, 20___.

_____ (SEAL)
(Name of Principal)

BY: _____
(Signature for Principal)

_____
(Address)

ATTEST: _____
(Principal Secretary)

WITNESS: _____
(Witness as to Principal)

_____
(Address)

BY: _____ (SEAL)
(Attorney-in-Fact)

_____
(Address)

ATTEST: _____
(Surety Secretary)

WITNESS: _____
(Witness as to Principal)

_____
(Address)

NOTE: Date of BOND must not be prior to date of Contract. If Principal is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must be authorized to transact business in the State where the PROJECT is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name and Address of Contractor)

a _____, hereinafter called Principal, and _____
(Corporation Partnership or Individual) (Name and Address of Surety)

_____

hereinafter called Surety, are held and firmly bound unto the **Trinidad Rancheria**, hereinafter called Owner, in the penal sum of $ _____ representing one-hundred percent (100%) of the contract amount, in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____day of _____ 20___, a copy of which is hereto attached and made a part hereof for the completion of the _____ _____ including the work as described under Section 011000 of the Contract Documents, and all other appurtenant items in strict accordance with the contract documents, within the time set forth therein, and at the prices stated in the Bid Schedule.

NOW THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed there under or the TECHNICAL SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the TECHNICAL SPECIFICATIONS.

PROVIDED FURTHER, that no final settlement between the OWNER and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterpart one of which shall be deemed an original, this the _____ day of _____, 20___.

_____ (SEAL)
(Name of Principle)

BY: _____
(Signature for Principal)

_____
(Address)

ATTEST: _____
(Principal Secretary)

WITNESS: _____
(Witness as to Principal)

_____
(Address)

BY: _____ (SEAL)
(Attorney-in-Fact)

_____
(Address)

ATTEST: _____
(Surety Secretary)

WITNESS: _____
(Witness as to Principal)

_____
(Address)

NOTE: Date of BOND must not be prior to date of Contract. If Principal is a Partnership, all partners should execute the BOND.

IMPORTANT: Surety companies executing BONDS must be authorized to transact business in the State where the PROJECT is located.

SECTION 007200
GENERAL CONDITIONS

General Conditions Table of Contents

1.0 DEFINITIONS

1.1 Wherever used in the contract documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 Addenda - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the contract documents, drawings and technical provisions, by additions, deletions, clarifications, or corrections.

1.3 Bid - The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the work to be performed.

1.4 Bidder - Any person, firm or corporation submitting a bid for the work.

1.5 Bonds - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the Contractor and his surety in accordance with the contract documents.

1.6 Change Order - A written order to the Contractor authorizing an addition, deletion or revision in the work within the general scope of the contract documents, or authorizing an adjustment in the contract price or contract time.

1.7 Contract Documents - The contract, including Advertisement For Bids, Information For Bidders, Bid, Bid Bond, Agreement, General Provisions, Labor Provisions, Special Provisions, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Change Order(s), Drawings, Technical Specifications, Submittal Requirements, and Addenda.

1.8 Contract Price - The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.9 Contract Time - The number of calendar days stated in the Contract Documents for the completion of the work.

1.10 Contract Manager - The person with the Owner's organization who is authorized to administer the contract for the Owner.

1.11 Contractor - The person, firm, or corporation with whom the Owner has executed the Agreement.

1.12 Contract Manager Representative - The representative of the Contract Manager authorized to deal with the Contractor at the site to administer the technical aspects of the Contract and to assure compliance with the Drawings and Specifications.

1.13 Drawings - The part of the contract documents which show the characteristics and scope of the work to be performed.

1.14 Engineer – The person, firm, or corporation named as such in the contract documents.

1.15 Field Order - A written order effecting a change in the work not involving an adjustment in the contract price or an extension of the contract time, issued by the Owner or Contract Manager to the Contractor during construction.

1.16 Notice Of Award - The written notice of the acceptance of the bid from the Owner to the successful Bidder.

1.17 Notice To Proceed - Written communication issued by the Owner to the Contractor authorizing him to proceed with the work and establishing the dates of commencement and conclusion of the work.

1.18 Owner –**Trinidad Rancheria**

1.19 Plans - The part of the contract documents which show the characteristics and scope of the work to be performed and which have been prepared or approved by the Contract Manager. In as far as these contract documents are concerned; the terms Drawings and Plans are synonymous.

1.20 Project - The undertaking to be performed as provided in the contract documents.

1.21 Shop Drawings - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the work shall be fabricated or installed.

1.22 Specifications - A part of the contract documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship. In as far as these contract documents are concerned; the terms Technical Provisions and Specifications are synonymous.

1.23 Subcontractor - An individual, firm, or corporation having a direct contract with the Contractor or with any other subcontractor for the performance of a part of the work at the site.

1.24 Substantial Completion - That date as certified by the Contract Manager when the construction of the project is sufficiently completed in accordance with the contract documents, so that the project or specified part can be utilized for the purposes for which it is intended.

1.25 Special Provisions - Modifications and additions to General Conditions which may be required by a federal agency for participation in the project, or such requirements that may be imposed by applicable state or local laws, or the Owner's contracting practices.

1.26 Supplier - Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design, but who does not perform labor at the site.

1.27 Technical Specifications - A part of the contract documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship. In as far as the contract documents are concerned, the terms Technical Specifications and Technical Provisions are synonymous.

1.28 Work - All labor necessary to produce the construction required by the contract documents and all materials and equipment incorporated or to be incorporated in the project.

1.29 Written Notice - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the work.

2.0 ADDITIONAL INSTRUCTIONS, DETAIL DRAWINGS ORDER OF PRECEDENCE

2.1 The Contractor may be furnished additional instructions and detail drawings, by the Contract Manager as necessary to carry out the work required by the contract documents.

2.2 The additional drawings and instruction thus supplied will become a part of the contract documents. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions.

2.3 In the event of an inconsistency between provisions of this contract, the inconsistency shall be resolved by giving precedence in the order given in the Special Provisions section of these documents.

3.0 REPORTS AND RECORDS

3.1 The Contractor shall submit to the Contract Manager such schedule of quantities and costs, payrolls, reports, estimates, records and other data where applicable as are required by the contract documents for the work to be performed.

3.2 The Contractor shall keep all records related to the contract for a minimum of three years after acceptance of the completed work.

4.0 DRAWINGS AND TECHNICAL SPECIFICATIONS

4.1 The intent of the drawings and technical provisions is that the Contractor shall furnish all labor, materials, tools, equipment, supervision, and transportation necessary for the proper execution of the work in accordance with the contract documents and all incidental work necessary to complete the project in an acceptable manner, ready for use, occupancy or operation by the Owner.

4.2 In case of conflict between the drawings and technical specifications, the technical specifications shall govern. Figure dimensions on drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.

4.3 Any discrepancies found between the drawings and technical specifications and site conditions or any inconsistencies or ambiguities in the drawings or technical specifications shall be immediately reported to the Contract Manager, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

5.0 SITE INVESTIGATION AND CONDITIONS

5.1 The Contractor will take steps necessary to ascertain the nature and location of the work, and investigate the general and local conditions which can affect the work or its cost, including but not limited to:

5.2 Conditions bearing upon transportation, disposal, handling, and storage of materials;

5.3 The availability of labor, water, electric power, and roads;

5.4 Uncertainties of weather, river stages, tides, or similar physical conditions at the site;

5.5 The conformation and conditions of the ground; and

5.6 The character of equipment and facilities needed preliminary to and during work performance. The Contractor also will observe and determine the character, quality, and

quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from the drawings and technical specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Owner.

5.7 The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Owner. The Owner does not assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its representatives before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

6.0 SHOP DRAWINGS

6.1 The Contractor shall provide shop drawings as may be necessary for the evaluation of the work as required by the contract documents. The Contract Manager will have the drawings promptly reviewed and will recommend approval or disapproval of all shop drawings. Approval of any shop drawing shall not release the Contractor from responsibility for deviations from the contract documents. The approval of any shop drawing which substantially deviates from the requirement of the contract documents shall be evidenced by a change order.

6.2 When submitted for review and approval, shop drawings shall bear the Contractor's certification that he has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the contract documents.

6.3 Portions of the work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Contract Manager. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Owner.

7.0 MATERIALS, SERVICES, AND FACILITIES

7.1 It is understood that, except as otherwise specifically stated in the contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

7.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the work shall be located so as to facilitate prompt inspection.

7.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

7.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and approved by the Contract Manager.

7.5 Materials, supplies, or equipment to be incorporated into the work shall not be purchased by the Contractor or the subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7.6 The Contractor shall promptly remove from the premises all materials rejected by the Contract Manager for failure to comply with the contract documents. The Contractor shall promptly replace the materials with acceptable materials without expense to the Owner.

8.0 SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the drawings or technical specifications by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the contract documents by reference to brand name or catalogue number, and if, in the opinion of the Contract Manager, such material, article, or piece of equipment is of equal substance and function to that specified, the Contract Manager may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the contract price and the contract documents shall be appropriately modified by change order. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the contract price or contract time.

9.0 PATENTS

9.1 The Contractor shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer(s) is/are specified. However, if the Contractor has reason to believe that the design, process, or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Contract Manager.

10.0 SURVEYS, PERMITS, REGULATIONS

10.1 The Owner shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the work together with a suitable number of bench marks adjacent to the work as shown in the contract documents.

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

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor unless otherwise specified in the contract documents. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that

the contract documents are at variance therewith, he shall promptly notify the Contract Manager in writing, and any necessary changes shall be adjusted as provided in Section 012657 -"Change Order Requests".

11.0 LAWS AND REGULATIONS AFFECTING WORK

11.1 The Contractor shall at all times observe and comply with Federal, State, Tribal, and County laws, ordinances and regulations which in any manner affect the conduct of the work; and all such orders and decrees as exist at the present and which may be enacted later by legislative bodies or tribunals having legal jurisdiction or authority over the work. No pleas of misunderstanding or ignorance thereof will be considered. The Contractor shall be wholly responsible for any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree.

12.0 TAXES

12.1 All materials incorporated into the work are subject to California state sales or use tax.

12.2 When materials are delivered to and consumed on Tribal Trust Land, such materials are exempt from state taxation given the Contractor is an Indian Owned organization. The Owner shall provide support to the contractor for exemption status, if and when claimed.

13.0 PROTECTION OF WORK, PROPERTY, AND PERSONS

13.1 The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He will take all necessary precautions for the safety of and will provide the necessary protection to prevent damage, injury, or loss to all employees on the work and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto.

14.0 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS

14.1 The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work sites which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall remove trees only when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound.

14.2 The Contractor shall protect from damage all existing improvements and utilities: at or near the work site, and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor.

14.3 The existence and location of utilities are not guaranteed by the Owner and shall be investigated and verified in the field by the Contractor before commencing construction activities in any particular area. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the

work. If the Contractor fails or refuses to repair the damage promptly, the Contract Manager may have the necessary work performed and charge the cost to the Contractor.

15.0 OPERATIONS AND STORAGE AREAS

15.1 The Contractor shall confine all operations (including storage of materials) to areas authorized or approved by the Contract Manager. The Contractor shall hold and save the Owner and its representatives free and harmless from liability of any nature occasioned by the Contractor's performance.

15.2 Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contract Manager and shall be built with labor and materials furnished by the Contractor without expense to the Owner. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. Only with the written consent of the Contract Manager may the buildings and utilities be abandoned and not removed.

15.3 The Contractor shall use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contract Manager. In such case, the Contractor shall minimize disruption and delays to traffic in the affected areas. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

16.0 INSURANCE

16.1 The Contractor shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the Contractor's execution of the work, whether such execution be by himself or by any subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

16.2 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

16.3 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

16.4 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

16.5 Claims for damages insured by usual personal injury liability coverage which are sustained

16.6 by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or

16.7 by any other person; and

16.8 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting there from.

16.9 Certificates of Insurance acceptable to the Contract Manager shall be filed with the Contract Manager prior to commencement of the work. These Certificates shall contain a provision that coverage’s afforded under the policies will not be canceled unless at least fifteen (15) calendar days prior written notice has been given to the Contract Manager.

16.10 The Contractor shall procure and maintain, at his own expense, during the contract time, liability insurance as hereinafter specified;

16.11 Contractor's General Public Liability and Property Damage Insurance including vehicle coverage issued to the Contractor and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to any property, arising out of or in connection with any operations under the contract documents, whether such operations be by himself or by any subcontractor under him, or anyone directly or indirectly employed by the Contractor or by a subcontractor under him. Insurance shall be written with a limit of liability of not less than $500,000 for all damages arising out of bodily injury, including death, at any time resulting there from, sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $500,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than $1,000,000 aggregate for any such damage sustained by two or more persons in any one accident.

16.12 The Contractor shall procure and maintain, at his own expense, during the contract time, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the project and in case any work is sublet, the Contractor shall require such subcontractor similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the project is not protected under Workmen's Compensation statute, the Contractor shall provide, and shall cause each subcontractor to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

16.13 The Contractor shall secure, if applicable, "All Risk" type Builder's Risk Insurance for work to be performed. Unless specifically authorized by the Contract Manager, the amount of such insurance shall not be less than the contract price totaled in the bid. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the contract time, and until the work is accepted by the Contract Manager. The policy shall name as the insured the Contractor and the Owner.

17.0 INDEMNIFICATION

17.1 The Contractor will indemnify and hold harmless the Owner, his agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, and subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

17.2 In any and all claims against the Owner or any of his agents, or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not

be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

17.3 The obligation of the Contractor under this paragraph shall not extend to the liability of the Owner, his agents, or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or technical specifications.

18.0 CONTRACT SECURITY

18.1 If required in the contract documents, the Contractor shall within ten days after the receipt of the Notice of Award furnish the Contract Manager with a Performance Bond and a Payment Bond in penal sums equal to the amount of the contract price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of the contract documents, and upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the work provided by the contract documents. Such bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the state in which the work is to be performed. The expense of these bonds shall be borne by the Contractor.

18.2 If at any time a surety on any such bond is declared as bankrupt or loses its right to do business in the state in which the work is to be performed, the Contractor shall within ten days after notice from the Contract Manager to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Contract Manager. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Contract Manager.

19.0 ACCIDENT PREVENTION AND SAFETY PROGRAM

19.1 The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons, including employees, and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these documents. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth herein.

19.2 The Contract Manager will notify the Contractor of any observed non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, upon receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply promptly, the Contract Manager may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claims for extension of time, or for excess costs or damages by the Contractor.

19.3 The Contractor shall develop and maintain for the duration of this contract, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor

shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

19.4 The Contractor as a part of his safety program, shall maintain at his office or other well-known place at the job site, safety equipment applicable to the work as prescribed by the aforementioned authorities, all articles necessary for giving first aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons who may be injured on the job site.

19.5 If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the Contract Manager. In addition, the Contractor must promptly report in writing to appropriate authorities and the Contract Manager's representative all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Contract Manager giving full details of the claim.

19.6 The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Highways closed to traffic shall be protected by effective barricades, and obstructions shall be illuminated during the hours of darkness. Suitable warning signs shall be provided to control and direct traffic properly. The Contractor shall erect warning signs in advance of any place on the project where operations may interfere with the use of the road by traffic, and at all intermediate points where the new work crosses or coincides with an existing road.

19.7 Compliance with the requirements of this provision by subcontractors will be the responsibility of the Contractor.

20.0 TEMPORARY SANITARY FACILITIES

20.1 The Contractor shall provide and maintain necessary sanitary conveniences for the use of those employed on or about the work properly secluded from public observation in such a manner and at such points as shall be approved by the Contract Manager and their use shall be strictly enforced.

21.0 SUPERVISION BY CONTRACTOR

21.1 The Contractor will supervise and direct the work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

22.0 SUBCONTRACTING

22.1 The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, is performed by specialty subcontractors.

22.2 The Contractor shall not award work to subcontractor(s) in excess of 67% of the contract price, without prior written approval of the Contract Manager.

22.3 The Contractor shall be fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

22.4 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the contract document insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Contract Manager may exercise over the Contractor under any provision of the contract documents.

22.5 Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

23.0 SEPARATE CONTRACTS

23.1 The Owner reserves the right to let other contracts in connection with this project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. If the proper execution or results of any part of the Contractor's work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Contract Manager any defects in such work that render it unsuitable for such proper execution and results.

23.2 The Owner may perform additional work related to the project by him, or he may let other contracts containing provisions similar to these. The Contractor will afford the other Contractors who are parties to such contracts (or the Owner, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his work with theirs.

23.3 If the performance of additional work by other Contractors or the Owner is not noted in the contract documents prior to the execution of the contract, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the Owner or others involves him in additional expense or entitles him to an extension of the contract time, he may make a claim therefore as provided under the provisions of this bidding and contracting manual.

24.0 DAYS OF WORK, HOURS OF WORK

24.1 Regular work shifts shall be eight hours daily Monday through Friday, except on holidays indicated below. Time of beginning and ending the day's work shall be approved by the Contract Manager. The Contract Manager, when in his opinion it is justified, may grant the Contractor permission to work overtime upon written request by the Contractor. When for a good reason short periods of overtime work are required, the Contract Manager may give approval without advance written notice.

24.2 Construction work will not be permitted on Saturdays, Sundays, nor on New Year's Day, Martin Luther King's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day, nor any other holidays declared by the federal government. When any of the above holidays falls on Saturday and the preceding

Friday is established as a holiday or when any of the holidays fall on Sunday and the following Monday is established as a holiday, no construction will be permitted on those days. The Contract Manager, when in his opinion it is justified, may grant the Contractor permission to work on any of the above days upon written application by the Contractor. Approval shall be required at least forty-eight (48) hours in advance.

25.0 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

25.1 The time for completion of the work is an essential condition of the contract documents. The time for completion appears in the Agreement. The work embraced shall be commenced on a date specified in the notice to proceed.

25.2 The Contractor will proceed with the work at such rate of progress to insure full completion within the time for completion. It is expressly understood and agreed, by and between the Contractor and the Owner, that time for completion of the work under the contract is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

25.3 If the Contractor shall fail to complete the work within the time for completion, or extension of time granted by the Contract Manager, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the contract documents for each calendar day that the work shall be incomplete after the date established by the time for completion. Liquidated Damages for this contract shall be one thousand dollars ***($1,000.00) US Currency per calendar day***.

25.4 The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to the following, and the Contractor has promptly given written notice of such delay to the Contract Manager.

25.4.1 To any preference, priority, or allocation order duly issued by the Contract Manager.

25.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

25.4.3 To any delays of subcontractors occasioned by any of the causes specified in paragraphs 25.4.1 and 25.4.2 of this article.

26.0 PROGRESS SCHEDULES AND REQUIREMENTS FOR COMPLIANCE

26.1 The Contractor shall, within ten days of receipt of notice to proceed, submit to the Contract Manager for approval a practicable schedule, showing the order in which the Contractor proposes to carry on the work, the dates on which he will start the major items of work (including procurement of materials, plant and equipment) and the contemplated dates for completing the same.

26.2 If, in the opinion of the Contract Manager, the Contractor falls behind the progress schedule, the Contractor shall take such steps as may be necessary to assure performance within the allowable time for completion. The Contractor may propose for approval by the Contract Manager measures such as increasing the number of workers, number of shifts, or overtime operations, days of work, or the amount of construction plant, or all of them. The Contract Manager may require the Contractor to submit for approval such supplementary schedule or

schedules necessary to demonstrate that the work shall be performed within the allowable time for completion, all without additional cost to the Owner.

26.3 Failure of the Contractor to comply with the requirements of this provision shall be grounds for determination that the Contractor is not prosecuting the work with such diligence as will insure completion within the specified time for completion. Upon such determination the Contract Manager may terminate the Contractor's right to proceed with the work, or any separable part thereof in accordance with Section 28 entitled "Suspension of Work, Termination, and Delay".

27.0 LAND AND RIGHTS-OF-WAY

27.1 Prior to issuance of the notice to proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the contract documents, unless otherwise mutually agreed.

27.2 The Contract Manager shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

27.3 The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

28.0 SUSPENSION OF WORK, TERMINATION, AND DELAY

28.1 The Contract Manager may suspend the work or any portion thereof for a period of not more than ninety (90) calendar days or such further time as agreed upon by the Contractor, by written notice to the Contractor which notice shall fix the date on which work shall be resumed. The Contractor will resume that work on the date so fixed. The Contractor will be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to any suspension.

28.2 If the Contractor is adjudged as bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors or if a trustee or receiver is appointed for the Contractor or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to subcontractors or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the work or if he disregards the authority of the Contract Manager, or if he otherwise violates any provision of the contract documents, then the Contract Manager may, without prejudice to any other right or remedy and after giving the Contractor and his surety a minimum of fourteen (14) calendar days from delivery of a written notice, terminate the services of the Contractor and take possession of the project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price exceeds the direct and indirect costs of completing the project, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor will pay the difference

to the Owner. Such costs incurred by the Owner will be determined by the Contract Manager and incorporated in a change order.

28.3 Where the Contractor's services have been so terminated by the Contract Manager, said termination shall not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the contract documents.

28.4 After fourteen (14) calendar days from delivery of a written notice to the Contractor, the Contract Manager may without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the contract. In such case, the Contractor shall be paid for all work executed and any expense sustained plus reasonable profit.

28.5 If, through no act or fault of the Contractor, the work is suspended for a period of more than ninety (90) calendar days by the Contract Manager or under an order of court or other public authority, or the Contract Manager fails to act on any request for payment within thirty (30) calendar days after it is submitted, or the Owner fails to pay the Contractor substantially the sum approved by the Contract Manager or awarded by arbitrators within thirty (30) calendar days of its approval and presentation, then the Contractor may, after fourteen (14) calendar days from delivery of a written notice to the Contract Manager, terminate the contract and recover from the Owner payment for all work executed and all expenses sustained. In addition and in lieu of terminating the contract, if the Contract Manager has failed to act on a request for payment or if the Owner has failed to make any payment as aforesaid, the Contractor may, upon fourteen (14) calendar days written notice to the Contract Manager, stop the work until he has been paid all amounts then due, in which event and upon resumption of the work, change orders shall be issued for adjusting the contract price or extending the contract time or both to compensate for the costs and delays attributable to the stoppage of the work.

28.6 If the performance of all or any portion of the work is suspended, delayed, or interrupted as a result of a failure of the Contract Manager to act within the time specified in the contract documents, or if no time is specified, within a reasonable time, an adjustment in the contract price or an extension of the contract time, or both, shall be made by change order to compensate the Contractor for the costs and delays necessarily caused by the failure of the Contract Manager.

29.0 INSPECTION AND TESTING

29.1 All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the contract documents.

29.2 The Owner shall provide any inspection and testing services beyond those required by the contract documents.

29.3 The Contractor shall provide at his expense the testing and inspection services required by the contract documents.

29.4 If the contract documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any work to specifically be inspected, tested, or approved by someone other than the Contractor, the Contractor will give the Contract Manager timely notice of readiness. The Contractor will then furnish the Engineer the required certificates of inspection, testing, or approval.

29.5 Inspections, tests, or approvals by the Contract Manager or others are for the sole use of the Owner and shall not relieve the Contractor from his obligations to perform the work in accordance with the requirements of the contract documents.

29.6 The Contract Manager and his representatives will at all times have access to the work. In addition, authorized representatives and agents of any participating federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the work and also for any inspection, or testing thereof.

29.7 If any work is covered contrary to the written instructions of the Contract Manager it must, if requested by the Contract Manager, be uncovered for his observation and replaced at the Contractor's expense.

29.8 If the Contract Manager considers it necessary or advisable that covered work be inspected or tested by others, the Contractor, at the Contracting Manager's request, will uncover, expose or otherwise make available for observation, inspection or testing that portion of the work in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such work is not found to be defective, the Contractor will be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate change order shall be issued.

30.0 CORRECTION OF WORK

30.1 The Contractor shall promptly remove from the premises all work rejected by the Contract Manager for failure to comply with the contract documents, whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the work in accordance with the contract documents and without expense to the Owner and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

30.2 All removal and replacement work shall be done at the Contractor's expense. If the Contractor does not take action to remove such rejected work within fourteen (14) calendar days after receipt of written notice, the Owner may remove such work and store the materials at the expense of the Contractor.

31.0 CHANGES IN THE WORK

31.1 The Contract Manager may at any time, as the need arises, order changes within the scope of the work without invalidating the Agreement. If such changes increase or decrease the amount due under the contract documents, or in the time required for performance of the work, an equitable adjustment shall be authorized by change order.

31.2 The Contract Manager also may, at any time, by issuing a field order, make changes in the details of the work. The Contractor shall proceed with the performance of any changes in the work unless the Contractor believes that such field order entitles him to a change in contract price or time, or both, in which event he shall give the Contract Manager written notice thereof within seven (7) calendar days after the receipt of the ordered change. Thereafter the Contractor shall document the basis for the change in contract price or time within thirty (30)

calendar days. The Contractor shall not execute such changes pending the receipt of an executed change order or further instruction from the Contract Manager.

32.0 CHANGES IN CONTRACT PRICE

32.1 The contract price may be changed only by a contract change order. The value of any work covered by a change order or of any claim for increase or decrease in the contract price shall be determined by one or more of the following methods in the order of precedence listed below:

32.2 Unit prices previously approved.

32.3 An agreed lump sum.

32.4 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed 15% of the actual cost of the work to cover the cost of general overhead and profit.

33.0 DIFFERING SITE CONDITIONS

33.1 The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Contract Manager by written notice of:

32.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the contract documents; or

32.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract documents.

33.2 The Contract Manager shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the work, an equitable adjustment shall be made and the contract documents shall be modified by a change order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless he has given the required written notice; provided that the Contract Manager may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

34.0 USE AND POSSESSION PRIOR TO COMPLETION

34.1 The Owner shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contract Manager shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Owner intends to take possession of or use. However, failure of the Contract Manager to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Owner's possession or use shall not be deemed an acceptance of any work under the contract.

34.2 While the Owner has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting directly from the Owner's possession or use. If prior possession or use by the Owner delays the progress of the work or causes additional expense to the Contractor, an adjustment shall be made in the contract price, the time of completion or both, and the contract shall be modified in writing accordingly.

35.0 RECORD DRAWINGS

35.1 Record Drawings shall be prepared by the contractor and shall include: all information shown on the Contractors drawings and all deviations, modifications or changes from those drawings, however minor, which were incorporated in the work; all additional work not appearing on the contract drawings; and any changes made after the final inspection.

35.2 Record drawing shall be kept current and available on the job site at all times. No construction work shall be concealed until the necessary data has been recorded.

35.3 Record drawings will be jointly inspected for accuracy and completeness by the Contract Manager or his representative at, or just prior to, the contractor submitting requests for payment. Incomplete drawings will be corrected before payment approval is recommended (Reference section 40, "Payments to Contractor")

35.4 Record drawings shall accurately show, using details, notes, etc., the following information:

a. The project number, contract number, community name, and other relevant general information.
b. The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.
c. The location and dimensions of any changes from the contract drawings.
d. Changes in design details or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans, and placing details, pipe sizes, insulation materials, dimensions, or equipment foundations, etc.
e. The location and description of all buried facilities installed by the contractor including at least two ties to permanent features and bury depth of major components, fittings, appurtenances, and change of direction of pipelines.
f. All changes or modification which results from the final inspection.
g. All information as required in the technical specifications.

35.5 One copy of the Record Drawings shall be delivered to the Contract Manager with the Contractor's written request for final inspection. The Contract Manager will expedite drawings review and will provide written approval or disapproval prior to the final inspection. If the Record Drawings are disapproved, they will be returned to the Contractor for further work and re-submittal. Final payment will not occur until an approved set of drawings is received.

36.0 CLEANUP AND FINISH GRADING

36.1 The Contractor shall restore all areas disturbed by construction to a condition at least equal to that existing prior to construction. Excess construction materials, equipment, tools, waste excavation, and rubbish shall be removed. Excavated areas shall be finish graded to provide drainage as required by the drawings and technical specifications, or in the absence of specific requirements, to provide drainage away from the facilities constructed and to restore original drainage patterns in existence prior to construction and to provide drainage away from excavated areas and installed facilities.

37.0 MEASUREMENT AND PAYMENT

37.1 Completed items of work shall be measured and paid for in accordance with the requirements listed in the bid schedule and any subsequent approved change orders. Payment shall be based on the actual quantities completed and shall represent full compensation under the contract. The price paid for the completed item of work shall include full compensation for furnishing all labor, materials, (other than that furnished by the Owner), tools, equipment, and performing all work required by the provisions of the contract to furnish and install the item of work, complete in place. In all cases, the finished product shall be a complete, operational system or component.

38.0 VARIATION IN ESTIMATED QUANTITIES

38.1 If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 25% above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 125% or below 75% of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contract Manager within fourteen (14) calendar days from the beginning of the delay, or within such further period as may be granted by the Contract Manager before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contract Manager shall ascertain the facts and make any appropriate adjustment for extending the completion date.

39.0 FINAL INSPECTION

39.1 Final inspection will be made by the Owner when the Contractor advises that all materials have been furnished, all the work has been performed, and all the construction provided for by the contract has been completed in accordance with its terms. The Contractor shall submit a written request to the Owner at least seven (7) calendar days before the requested final inspection date.

39.2 If a re-inspection or re-test is required because of uncompleted work, the Owner may charge the Contractor for re-inspection costs.

39.3 The Owner will provide written acceptance when all materials, work or other requirements of the drawings, specifications and contract are furnished or completed. The written acceptance will include the date the work is determined to be complete, and until such acceptance, the Contractor will be responsible for all work performed and materials delivered.

40.0 PAYMENTS TO CONTRACTOR –

PER TRINIDAD RANCERIA PROCUREMENT POLICY AND CONTRACT

~~40.1 The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved breakdown of the contract price. Such estimates shall be submitted no later than fourteen (14) calendar days in~~

~~advance of the date set for payment. Submittals are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Engineer prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each project. The PHA will retain five (5) percent of the amount of progress payments in accordance with SB293 Section 7201 and three (3) percent of the amount of progress payments per TERO making the total retention deductions from each payment request eight (8) percent until completion and acceptance of all work under the contract; except, that if upon completion of fifty (50) percent of the work, the Contracting Officer, after consulting with the Engineer, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed (minus the 3% TERO tax which is to remain in effect for the duration of the project and for the contract amount in its entirety, including any change orders). If the Contracting Officer subsequently determines that the Contractor's performance and progress become unsatisfactory, the PHA shall reinstate the five (5) percent retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.~~

~~40.2 The Owner reserves the right to withhold 2.5% of the total Contract Amount as retention for the twelve (12) month warranty period from completion of the project as indicated as the date of the letter of Substantial Completion."~~

40.3 Upon completion and acceptance of the work, the Contract Manager shall issue a certificate attached to the final payment request that the work has been accepted by him under the conditions of the contract documents. Within thirty (30) calendar days of completion and acceptance of the work, the Owner shall pay the entire balance found to be due the Contractor including the retained percentages, but except such sums as may be lawfully retained by the Owner, shall pay the entire balance found to be due the Contractor including the retained percentages, but except such sums as may be lawfully retained by the Owner.

40.4 The Contractor will indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the work. The Contractor shall, at the Contract Manager's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so the Contract Manager may, after having notified the Contractor, either arrange payment for unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of the contract documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor, his Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the contract documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

40.5 If the Owner fails to make payment in forty-five (45) calendar days after approval by the Contract Manager, in addition to other remedies available to the Contractor, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the Contractor.

41.0 ASSIGNMENTS

41.1 Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title or interest therein, or his obligations there under, without written consent of the other party.

42.0 GUARANTY

42.1 The Contractor shall guarantee all materials and equipment furnished and work performed for a period of one year from the date of substantial completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the systems resulting from such defects. The Contract Manager will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The performance bond, if required, shall remain in full force and effect through the guarantee period.

43.0 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

43.1 The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically accepted by the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the contract documents or the performance and payment bonds.

44.0 CONTRACT MANAGER'S ROLE AND AUTHORITY

44.1 The Contract Manager or his designee shall act as the Owner's representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and work performed. He shall interpret the intent of the contract documents in a fair and unbiased manner. The Contract Manager will make visits to the site and determine if the work is proceeding in accordance with the contract documents.

44.2 The Contractor will be held strictly to the intent of the contract documents in regard to the quality of materials, workmanship and execution of the work. Inspections may be made at the factory or fabrication plant of the source of material supply.

44.3 The Contract Manager will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

44.4 The Contract Manager does not have authority to obligate the Owner to change in the terms of the contract without the approval of the Owner.

45.0 RESOLUTION OF DISPUTES

45.1 All claims, disputes and other matters in question arising out of, or relating to, the contract documents or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 43, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

45.2 Notice of the demand for arbitration shall be filed in writing with the other party to the contract documents and with the American Arbitration Association. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

45.3 The Contractor will carry on the work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

46.0 EQUAL EMPLOYMENT OPPORTUNITY

46.1 During the performance of this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

46.2 The Contractor shall take affirmative action to ensure the 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, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeships.

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

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

46.5 The Contractor shall send, to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or workers' representative of the Contractor's commitment under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

46.6 The Contractor shall comply with all provisions of Executive Order No. 11246, as amended, and the rules, regulations, and relevant orders of the Secretary of Labor.

46.7 The Contractor shall furnish to the Contract Manager, all information required by Executive Order No. 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO - 1), or any successor form, is the prescribed form to be filed within thirty (30) calendar days following the award, unless filed within 12 months preceding the date of award.

46.8 The Contractor shall permit access to its books, records, and accounts by the Owner, Owner's representatives or the Office of Federal Contract Programs (OFCCP) for the purposes of investigation to ascertain compliance with the applicable rules, regulations, and orders.

46.9 If the OFCCP determines that the Contractor is not in compliance with this clause or any rules, regulations, and orders of the Secretary of Labor, this contract may be canceled,

terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further contracts.

46.10 The Contractor shall include the terms and conditions of this section in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order No. 12246, as amended, so that such provisions will be binding upon each subcontractor or vendor.

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

47.0 CLEAN AIR AND WATER

47.1 The Contractor agrees to comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Clean Air Act and the Clean Water Act, and all regulations and guidelines issued to implement those acts before the award of this contract.

47.2 The Contractor agrees that no portion of the work required by this prime contract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this contract was awarded unless and until the EPA eliminates the name of the facility from the listing.

47.3 The Contractor agrees to use best efforts to comply with clean air standards and clean water standards at the facility in which the contract is being performed.

47.4 The Contractor agrees to insert the substance of this clause into any nonexempt subcontract.

48.0 INDIAN PREFERENCE

48.1 The Contractor agrees:

48.5.1 To give preference in employment opportunities under this contract to the greatest extent feasible to Indians who can perform the required work, regardless of age (subject to existing laws and regulations), sex, religion, or Tribal affiliation. To the maximum extent feasible and consistent with the efficient performance of this contract, the Contractor further agrees to give preference to the greatest extent feasible in employment and training opportunities under this contract to Indians who are not fully qualified to perform regardless of age (subject to existing laws and regulations), sex, religion, or tribal affiliation.

48.5.2 The Contractor also agrees to give preference to Indian Organizations and Indian-owners economic enterprises in the awarding of any subcontracts to the greatest extent feasible and consistent with the efficient performance of this contract. The Contractor shall maintain statistical records as are necessary to indicate compliance with this paragraph.

48.2 In connection with the Indian employment preference requirements of this clause, the Contractor shall provide opportunities for on-the-job training incident to such employment that will increase the vocational effectiveness of an Indian employee.

48.3 If the Contractor is unable to fill its employment and training opportunities after giving full consideration to Indians as required by this clause, those needs may be satisfied by selection of persons other than Indian in accordance with applicable fair employment practices.

48.4 If no Indian organizations or Indian-owned economic enterprises are available under reasonable terms and conditions, including price, for awarding of subcontracts in connection with the work performed under this contract, the Contractor agrees to comply with the provisions of this contract by applying fair, competitive contracting practices.

48.5 As used in this clause:

48.5.1 The term "Indian" means a person who is a member of an Indian Tribe or qualifies as a California Indian according to federal law. If the Contractor has reason to doubt that a person seeking employment preference is an Indian, the Contractor shall grant the preference but shall require the individual to provide evidence within 30 days from start of employment.

48.5.2 The term "Indian Tribe" means an Indian Tribe, pueblo, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688; 43 U.S.C. 16311) which is recognized as eligible for the special programs and services provided by the United States to Indian because of their status as Indians.

48.5.3 The term “Indian Organization" means the governing body of any Indian Tribe or entity established or recognized by such governing body in accordance with the Indian Financing Act of 1974 (88 Stat. 77; 25 U.S.C. 1451); and,

48.5.4 The term "Indian-owned Economic Enterprise" means any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, provided that such Indian ownership shall constitute not less than 51% of the enterprise, and that ownership shall encompass active operation and control of the enterprise.

END OF SECTION 007200

SECTION 007343
WAGE RATE REQUIREMENTS

SECTION 1 GENERAL

1.1 Federal Department of Labor prevailing wages are applicable for this project per the Davis-Bacon Act of 1931.

1.2 The wage determination of the Secretary of Labor will need to be administered for this project. The Contractor will be required to provide a Wage Rate Schedule just prior to the signing of the contract for work.

1.3 The Contractor can obtain the current minimum prevailing wage rates at https://beta.sam.gov/ Applicable rates are for:

State:	California
County:	Humboldt
Construction Type:	Building
WD Number:	CA20210005 01/01/2021

SECTION 2 PRODUCTS

2.1 Not used.

SECTION 3 EXECUTION

3.1 Not used.

End of Section 007343

SECTION 009100
ADDENDA

PART 1: GENERAL

1.1 Description

A. Addenda shall be defined as a document that provides supplement, appendix, clarification, or addition to the bidding and contracting documents.

B. Addenda will be the only official modification means to be implemented during the pre-bid timeframe of the project.

C. All potential bidder submitted requests for clarification and interpretation during the pre-bid time of the project, including submissions provided during the pre-bid conference will be addressed via addenda.

D. The final addenda will be released no less than three (3) business days prior to the date of bid. All requests submitted following the official date of release of the final addenda will be collected by the Owner with the intention of address following bidding and prior to issuance of a contract.

E. If a request is received following release of the final addenda that warrants clarification prior to bidding then the due date for bids can be postponed at the Owner's discretion. All other requests received following release of the final addenda will be addressed with the successful bidder prior to ratification of the contract.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 The following is an example Addendum form similar to the one that will be provided for this contract.

Addendum Number _____
Date: _____
Project: _____
Owner: _____

This addendum provides changes and/or clarifications, to the Contract Documents. These modifications pertain to the sections referenced below and to all other referenced or applicable sections in the Contract Documents.

Please sign the addendum receipt acknowledgment form and return to the Owner with your cost proposal and other required forms and documents.

Changes and/or clarifications to the bidding and contracting documents are as follows:

1.

Addendum Receipt Acknowledgement Form

Receipt of Acknowledgement:

My firm received Addendum No. _____, consisting of _____ pages, for the

_____

Project on _____, 20___.

Name of Firm _____

Name (Print) _____

Name (Signature) _____

Date: _____

END OF SECTION 009100

DIVISION 01
GENERAL REQUIREMENTS

SECTION 011000
SUMMARY OF WORK

PART 1 GENERAL

1.1 CONTRACTOR RESPONSIBILITY

1. Contractor responsibility for each item of work for the project includes provision of all labor, equipment, materials, supervision, and all other pertinent items of interest required to competently and satisfactorily complete each task.

1.2 Item Pricing

1. Contractor to include total cost for labor, equipment, materials, project superintendent, supervision, incidentals, general conditions, overhead, and profit in each item of the Bid Schedule as is applicable.

1.3 MEASUREMENT AND PAYMENT

1. Measurement and payment for all work to be in accordance with the contract Bid Schedule (refer to Section 004100) and actual work as field measured and verified. All payments to be made following field verification by the Engineer of completed work, and submittal of:
   1. Periodic Estimate for Partial Payment,
   2. Contractor Certification for Partial Payment,
   3. Revised Construction Schedule,
   4. Subcontractor and Major Suppliers Un/conditional Releases.

2. The owner may increase, decrease or eliminate any item due to available funding.

1.4 WORK ITEMS BRIEF DESCRIPTION

1. Temporary Facilities (NOT A SEPARATE PAY ITEM)
   1. The project location is within the Trinidad Rancheria. Access to the project site is limited to existing travel ways.
   2. **Restroom facilities will need to be provided and maintained for the duration of the project.**
   3. Temporary fencing will need to be implemented for the site including the area for stockpiled materials and equipment.
   4. Securable containers for tools remaining on site are highly recommended.
   5. Electricity will need to be provided by the Contractor via portable generators or, temporary construction service from Pacific Gas and Electric (PG&E). It is the Contractor's responsibility to coordinate with PG&E for temporary electricity.
   6. Water will need to be provided by the Contractor. Watering of soils for compaction and dust control will need to be provided by the Contractor.
   7. Additional temporary facilities, as determined to be necessary by the Contractor must also be provided and paid for under this bid item. No allowance will be made for additional temporary facilities' cost following bidding unless such facilities are directly caused by a change in the contract scope and identified as such under an official change order approved by both the Contractor and the Owner.

2. Erosion Control (NOT A SEPARATE PAY ITEM)

1. Prior to conducting any work incorporating the use or application of Concrete or mortar for the site the Contractor will need to install a concrete washout. The washout will need to be inspected and approved by the Engineer prior to concrete work beginning. Alternate methods of concrete containment may be entertained but any such system will need to be presented as Value Engineering per Section 012400 and approved prior to implementation.
2. Street Sweeping and Cleaning: The Contractor is to implement a street sweeping and cleaning schedule for the duration of the project. The existing frontage improvements, including but not limited to existing curb & gutter, and paved roadways are to be kept free of debris. Material tracked onto the frontage improvements during construction activities, such as moving vehicles and equipment on and off the site, are to be cleaned at the end of each workday. Hand broom sweeping and washing will be acceptable for minor material removal. Street sweeping with mechanical equipment will need to be conducted at least once a week to address any materials tracked onto existing improvements.
3. Existing storm water drain inlets are to be protected with gravel bags as shown on plan set or alternate system as submitted by the Contractor and approved by the Engineer.
4. **Item to include final erosion control consisting of seeding and straw mulching of all exposed soils.**

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3. <u>Tribal Operations Center</u>

<u>Generator Systems</u>

1. This work shall include but is not limited to Furnishing and installing generators, Furnishing and installing transfer switches with mounting structure, Furnishing and installing conductors and conduit as required for the installation of generators and transfer switches, and Repairs and or alterations to existing electrical equipment as required for proper operation of generators and transfer switches.

2. **Contractor is expected to provide generator and transfer switch submittals as first order of work to allow for shipping time.**

3. Generator-set and the manufacturers of the component parts shall have representatives located **<u>within 50 miles</u>** of the installation that can provide service, inspection, spare parts, and emergency service.

4. Generator Size **60 KW**

    1. Kilowatts: 60 kW.
    2. Voltage: 120/240 V.
    3. Power Factor: 1.0.

4. Phase: 1.
5. Frequency: 60 Hz.
6. Elevation: 500 Ft.
7. Ambient Temperature: 104qF.
8. Automated Transfer Switch 400 amp service
9. Warranty: 5 year (Parts, Labor, and Travel)

Misc Concrete

1. This work shall include but is not limited to the installation of Excavation, Misc. Concrete, rebar, concrete generator / propane tank pads and retaining walls as shown on the construction drawings or as directed by the engineer, all excavation and re-grading as required to meet the lines and elevations shown on the construction drawings, and supply and compaction of class 2 base rock. The contract Lump Sum price paid for concrete slabs includes full compensation for furnishing all labor, rebar, materials, tools, equipment and incidentals, and for doing all the work involved in the concrete slabs and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Fencing

1. This work shall include but is not limited Furnish and Installation of 6' tall chain link fencing and gates with privacy slats as shown on the construction drawings or as directed by the engineer, Furnish and installation of posts and hardware as required for the proper installation and operation of fencing. The contract per lump sum price paid for. Fencing includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in the Fencing and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

2. Color to be selected by the owner.

Propane Service Connection

1. This work shall include but is not limited Furnish and Installation of all 1" piping and required components for the proper connection and operation of the new Generators.

2. Contractor shall coordinate with and pay all service connection cost with the Trinidad Rancheria's propane supplier.
   Sequoia Gas Company, 707 822-4851 contact: Casey Mitchell

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4. Emergency Operations Center

Generator Systems

1. This work shall include but is not limited to Furnishing and installing generators, Furnishing and installing transfer switches with mounting structure, Furnishing and installing conductors and conduit as required for the installation of generators and transfer switches, and Repairs and or alterations to existing electrical equipment as required for proper operation of generators and transfer switches.

2. **Contractor is expected to provide generator and transfer switch submittals as first order of work to allow for shipping time.**

3. Generator-set and the manufacturers of the component parts shall have representatives located **within 50 miles** of the installation that can provide service, inspection, spare parts, and emergency service.

4. Generator Size **60 KW**

    1. Kilowatts: 60 kW.
    2. Voltage: 120/240 V.
    3. Power Factor: 1.0.
    4. Phase: 1.
    5. Frequency: 60 Hz.
    6. Elevation: 500 Ft.
    7. Ambient Temperature: 104qF.
    8. Automated Transfer Switch 400 amp service
    9 . Warranty: 5 year (Parts, Labor, and Travel)

Misc Concrete

1. This work shall include but is not limited to the installation of Excavation, Misc. Concrete, rebar, concrete generator / propane tank pads and retaining walls as shown on the construction drawings or as directed by the engineer, all excavation and re-grading as required to meet the lines and elevations shown on the construction drawings, and supply and compaction of class 2 base rock. The contract Lump Sum price paid for concrete slabs includes full compensation for furnishing all labor, rebar, materials, tools, equipment and incidentals, and for doing all the work involved in the concrete slabs and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

2. **Note: Misc concrete item includes retaining wall and concrete steps as shown on drawings. Area between propane tank and generator location is to be graded to cover footings and sloped to drain. Area is to be asphalt 2" depth or concrete 4" depth.**

Fencing

1. This work shall include but is not limited Furnish and Installation of 6' tall chain link fencing and gates with privacy slats as shown on the construction drawings or as directed by the engineer, Furnish and installation of posts and hardware as required for the proper installation and operation of fencing. The contract per lump sum price paid for. Fencing includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in the Fencing and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

2. Color to be selected by the owner.

Propane Service Connection

1. This work shall include but is not limited Furnish and Installation of all 1" piping and required components for the proper connection and operation of the new Generators.

2. Contractor shall coordinate with and pay all service connection cost with the Trinidad Rancheria's propane supplier.
   Sequoia Gas Company, 707 822-4851 contact: Casey Mitchell

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5. Trinidad Harbor

Special notes:

1. **This location requires City of Trinidad Permit. Contractor shall assist Trinidad Rancheria with securing permit. Trinidad Rancheria will pay cost of permit.**

Generator Systems

1. This work shall include but is not limited to Furnishing and installing generators, Furnishing and installing transfer switches with mounting structure, Furnishing and installing conductors and conduit as required for the installation of generators and transfer switches, and Repairs and or alterations to existing electrical equipment as required for proper operation of generators and transfer switches.

2. **Contractor is expected to provide generator and transfer switch submittals as first order of work to allow for shipping time.**

3. Generator-set and the manufacturers of the component parts shall have representatives located **within 50 miles** of the installation that can provide service, inspection, spare parts, and emergency service.

4. 75 KW Generator shall be connected to new 400 AMP Automatic Transfer Switch (existing manual transfer switch Labeled "Restaurant" is to remain in place. New Automatic Transfer Switch is to be Labeled "Restaurant".

    1. Kilowatts: 75 KW.
    2. Voltage: 240/120 VAC
    3. Power Factor: 0.8
    4. Phase: 3 Phase, 4 Wire (Red Leg Delta)
    5. Frequency: 60 Hz
    6. Elevation: 500 ft
    7. Ambient Temperature: 90 Degrees Fahrenheit.
    8. Automated Transfer Switch 400 amp service
    9. Warranty: 3 year (Parts, Labor, and Travel)

5. 100 KW Generator shall be connected to two (2) existing manual transfer switches,

    - # 1 Labeled PIER
    - # 2 Labeled Boat Launch

    1. Kilowatts: 100 KW.
    2. Voltage: 240/120 VAC
    3. Power Factor: 0.8
    4. Phase: 3 Phase, 4 Wire (Red Leg Delta)
    5. Frequency: 60 Hz
    6. Elevation: 500 ft
    7. Ambient Temperature: 90 Degrees Fahrenheit.
    8. Connect to existing manual transfer switch Labeled Pier
    9. Connect to existing manual transfer switch Boat Launch
    10. Warranty: 3 year (Parts, Labor, and Travel)
    11. Existing Mobile Generator connection points are to be replaced with stationary connection points. Existing hardware to be provide to owner.

Misc Concrete

1. This work shall include but is not limited to the installation of Excavation, Misc. Concrete, rebar, concrete generator / propane tank pads and retaining walls as shown on the construction drawings or as directed by the engineer, all excavation and re-grading as required to meet the lines and elevations shown on the construction drawings, and supply and compaction of class 2 base rock. The contract Lump Sum price paid for concrete slabs includes full compensation for furnishing all labor, rebar, materials,

tools, equipment and incidentals, and for doing all the work involved in the concrete slabs and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

2. Minimal excavation only allowed in this area. **Contractor is expected to conform bottom of concrete to match existing ground surface.**

Fencing

3. This work shall include but is not limited Furnish and Installation of 6' tall chain link fencing and gates with privacy slats as shown on the construction drawings or as directed by the engineer, Furnish and installation of posts and hardware as required for the proper installation and operation of fencing. The contract per lump sum price paid for. Fencing includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in the Fencing and any other equipment and labor required, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

4. Color to be selected by the owner.

Propane Service Connection

1. This work shall include but is not limited Furnish and Installation of all piping and required components for the proper connection and operation of the new Generators.

2. Contractor shall coordinate with and pay all service connection cost with the Trinidad Rancheria's propane supplier.
   Sequoia Gas Company, 707 822-4851 contact: Casey Mitchell

3. **Contractor will be required to purchase two (2) 1000 gal tanks for this location.** Tanks must be approved by Trinidad Rancheria's propane supplier.

4. Supply pipping is to be 1" surface mounted with seismic flex points.

END OF SECTION 011000

SECTION 011400
WORK RESTRICTIONS

PART 1 GENERAL

1.1 Related Documents

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

1.2 Use of Premises

A. Use of Property: Limit use of premises to work in areas indicated and for the purpose of this specific project. Do not disturb portions of the property beyond the areas in which the Work is indicated. If disturbed, repair and restore to a condition equal to or greater than existed prior to impact.
B. Owner Occupancy: Allow for Owner and public occupancy of the site(s) and surrounding areas.
C. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    a. Schedule deliveries to minimize use of driveways and entrances.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.3 Occupancy Requirements

A. Occupancy: neighbors and the Owner will occupy existing adjacent properties during the entire construction period. Cooperate with neighbors during construction operations to minimize conflicts and facilitate use and access to businesses. Perform the Work, so as not to interfere with the neighbors' operations.

1.4 Special Work Restrictions

A. The following will not be tolerated or permitted on site.
    a. Loud or objectionable music or language.
    b. Visually explicit or profane clothing, language, and/or gestures.
    c. Smoking.
B. All products, adhesives, sealers, and chemicals associated with installation of materials and construction activities shall be low VOC content.

1.5 Utilities

A. Work requiring shutdown of utilities serving occupied areas must be scheduled in writing a minimum of seventy-two (72) hours in advance of shutdown or the minimum amount of time as required by the utility purveyor, whichever is greater.

PART 2:PRODUCTS (Not Used)
PART 3:EXECUTION (Not Used)

END OF SECTION 011400

SECTION 012400
VALUE ENGINEERING

PART 1 - GENERAL

1.1 Description

A. The Contractor may submit to the Owner value-engineering (VE) proposals that change the Contract Documents resulting in Construction Cost Savings and Time Savings. The Owner will share with the Contractor any cost savings that result from an approved VE proposal.

1.2 Requirements

A. The VE proposal must maintain the essential functions and characteristics of the facility including but not limited to safety, service life, ease of maintenance, and appearance.
B. The Contractor's Conceptual VE proposal will be reviewed by the Owner, and if approved, the Contractor shall submit a formal VE proposal including revised drawings prepared and stamped by a California licensed Professional Engineer, specifications, distribution of quantities and cost savings, which reflect the work required to complete the VE proposal.

1.3 Conditions

A. The Owner will be the sole judge of the VE proposal in determining the following:
    a. Approval or Disapproval
    b. Construction Cost Savings
    c. Time Savings
    d. Advantages and/or Disadvantages
B. The Owner reserves the right to disregard the contract unit bid prices if, in the judgment of the Engineer, such prices do not represent fair value for the work to be performed or deleted. The Engineer will adjust the contract unit bid prices in evaluating the Construction Cost Savings of the VE proposal. If the Owner approves the VE proposal, the Owner will order changes to the Contract Documents that reflect the VE proposal in accordance with the contract documents.

1.4 Measurement and Payment

A. If the Owner approves the VE proposal, the Owner will provide measurements and payments in accordance with the contract documents.
B. The Owner and the Contractor shall equally share the Construction Cost Savings amount resulting from the VE proposal. The Contractor shall receive twenty-five percent (25%) of the Contractor's share when the VE proposal is approved. The Contractor shall receive seventy five percent (75%) of the Contractor's share when the Engineer has accepted the work related to the VE Scope.

1.5 Reimbursement

A. The Owner will not reimburse the Contractor for any engineering or preparation expenditures of the VE proposal.

PART 2: PRODUCTS (not used)
PART 3: EXECUTION

END OF SECTION 012400

SECTION 012500
PRODUCT SUBSTITUTIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.
B. Related Requirements:
    a. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
    b. Divisions 02 through 48 for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by the Contractor.
    a. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
    b. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantages to the Contractor and/or the Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit two (2) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
    a. Substitution Request Form: Use CSI Form 13.1A or approved alternate.
    b. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
        i. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
        ii. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
        iii. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

iv. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
v. Samples, where applicable or requested.
vi. Certificates and qualification data, where applicable or requested.
vii. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and Owners.
viii. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
ix. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
x. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
xi. Cost information, including a proposal of change, if any, in the Contract Sum.
xii. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
xiii. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

c. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Engineer will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within fourteen (14) calendar days of receipt of request, or seven (7) calendar days of receipt of additional information or documentation, whichever is later.
    i. Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.
    ii. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 – PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than fourteen (14) calendar days prior to time required for preparation and review of related submittals.
    a. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
        i. Requested substitution is consistent with the Contract Documents and will produce indicated results.
        ii. Requested substitution provides sustainable design characteristics that specified product provided.
        iii. Substitution request is fully documented and properly submitted.
        iv. Requested substitution will not adversely affect Contractor's construction schedule.
        v. Requested substitution has received necessary approvals of authorities having jurisdiction.
        vi. Requested substitution is compatible with other portions of the Work.
        vii. Requested substitution has been coordinated with other portions of the Work.
        viii. Requested substitution provides specified warranty.
        ix. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Engineer will consider requests for substitution if received within thirty (30) calendar days of issuance of the Notice to Proceed. Requests received after that time may be considered or rejected at the discretion of the Engineer.
    a. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
        i. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
        ii. Requested substitution does not require extensive revisions to the Contract Documents.
        iii. Requested substitution is consistent with the Contract Documents and will produce indicated results.
        iv. Requested substitution provides sustainable design characteristics that specified product provided.

v. Substitution request is fully documented and properly submitted.
vi. Requested substitution will not adversely affect Contractor's construction schedule.
vii. Requested substitution has received necessary approvals of authorities having jurisdiction.
viii. Requested substitution is compatible with other portions of the Work.
ix. Requested substitution has been coordinated with other portions of the Work.
x. Requested substitution provides specified warranty.
xi. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012613
REQUESTS FOR INTERPRETATION (RFI)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Administrative and procedural requirements for handling and processing RFI.

1.2 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing RFI.

1.3 DEFINITIONS

A. Definitions used in this article are not intended to change or modify the meaning of other terms in the Contract Documents.
B. Request for Interpretation (RFI): A request for information by the Contractor to the Owner/Engineer for clarification of intent of any portion of the Contract Documents after the Award of Contract and during the construction of the Project.
C. The following are NOT Requests for Interpretation.
    a. Change Orders.
    b. Construction Change Directives.
    c. Substitution Request.
    d. Bulletin.
    e. Field Order.
    f. Shop Drawings.
    g. Normal questions contained in a typical shop drawing submittal.
    h. Clarifications during Bidding.

1.4 REQUESTS FOR INTERPRETATION (RFI's) DURING CONSTRUCTION

A. RFI’s are logged-in at the Engineer's Office, not necessarily with same date as indicated by the Contractor on RFI form. The response time will commence upon the date of receipt by the Engineer.
    a. E-mail copies of RFI’s sent by the Contractor and received on or after a Friday after 2:00 PM are to be dated the following Monday, holidays excepted.
B. RFI: If clarification of any portion of Construction Documents is required, submit a RFI to the Engineer and the Owner’s Representative in accordance with the following procedures:
    a. RFI Format:
        i. Submit on a standard form developed by the Contractor.
        ii. RFI's shall be sequentially numbered; and include the following:
            1. Date
            2. Project name and number
            3. Contractor’s name, address, telephone number and fax number.
            4. Description of subject and discipline (trade) in question.
            5. Adequate space for Engineer to respond, sign, and date.
        iii. Contractor shall submit a copy of the format to the Engineer and Owner’s Representative at start of Project for review, comment, and acceptance.

C. RFI Inquiry:
    a. Clearly state and completely define the issue requiring interpretation. Provide drawing and detail numbers, specification section numbers and paragraphs, sketches and other reference information.
    b. Provide potential solutions to issues when possible.
    c. Provide cost and schedule implications, if any.
    d. Ambiguous RFI's will be returned to Contractor without formal action.
D. RFI Submission Process:
    a. The Contractor shall submit an RFI, in writing, to Engineer immediately with a copy to the Owner's Representative when any issue requiring clarification arises.
        i. Unless specifically stated on RFI, the Engineer and the Owner will assume adjustment to the Contract Amount and the Project Schedule is not required.
        ii. The Engineer will review and respond only to RFI's received in writing from the Contractor. When possible, email RFI's can be accepted given the Owner, Engineer, and Contractor agree and Contractor is able to verify delivery of RFI either email receipt, follow up phone call or alternate method.
        iii. For paper RFI; submit one (1) copy of each RFI and Engineer response, including any supplemental drawings and additional instructions, to the Owner's Representative for recording purposes.
        iv. Review and response of RFI by Owner/Engineer will be accomplished within seven (7) calendar days from the date of receipt.
        v. RFI's submitted to the Engineer without following these submission procedures will result in rejection of the submission without review and comment.
E. RFI Log:
    a. Contractor must maintain an RFI log indicating the RFI number, subject, date, response date and impact, if any on schedule, and cost.
    b. Contractor is to provide the updated log, at least once a month, to the Engineer and Owner's Representative and at the request of the Engineer and/or Owner's Representative.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 012613

SECTION 012657
CHANGE ORDER REQUEST

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Administrative and procedural requirements for proposing, processing, and securing Change Orders.

1.2 COST COMPUTATION

A. The cost of change orders to the contract will be computed as follows:
    a. In all cases, regardless of the method used to determine values of changes, estimated or actual cost shall be submitted in detailed breakdown form, giving quantity and unit costs of each item, labor costs, allowable overhead and profit.
    b. Where unit prices have not been established for the contract, the work shall be based on a lump sum adjustment determined by criteria outlined under Section 007200. The allowances including all overhead, commission, profit, and bond to be allowed for increase shall in no case exceed the percentages of net extra costs as itemized in Section 007200
        i. For change orders these percentages shall include, but not be limited to:
            1. Insurance (other than mentioned herein),
            2. Bonds,
            3. Field and office supervisors and assistants,
            4. Use of small, portable tools and equipment, whether manual or automatic generally designed for individual use by a tradesman.
            5. Use of any manual tools and equipment, regardless of size, portability or end use,
            6. Average job engineering, stakeout, and layout.
            7. Incidental job burdens.
            8. General administrative costs required by reasonable extension of contract time if necessary as directly caused by the change.
        ii. Cost shall be computed to include actual cost of:
            1. Labor, including pro-rated charges for foremen.
            2. Materials entering permanently into the work.
            3. Ownership or rental cost of construction equipment during time of use for the extra work.
            4. Power and consumable supplies for the operation of power equipment.
            5. Insurance related to labor benefits required under union agreements.
            6. Social Security and unemployment insurance.
            7. Applicable taxes.
B. Estimates for materials shall be based on reasonable, current prices at which materials are available to the Contractor and subcontractor(s). Satisfactory evidence of such costs shall be submitted with proposed change order.

C. When additions and credits are involved in any one change order, the allowance for overhead and profit shall be figured on the basis of net increase, if any. Full credit, not including allowances for Contractor's overhead, profit, or commission shall be given the Owner for deductions. Values of taxes shall be included in deductions.
D. No work on proposed changes shall be started until the proposed changes have been approved by the Engineer and Owner.
    a. Exception: Where an emergency or a situation requires that changes in contract work be done prior to formal approval of the Change Order, the Authority shall issue a proceed order to the Contractor who must maintain an accurate account of all labor and material involved in the change. All proceed orders shall be followed by change order(s) in the approved manner prior to contract settlement, final payment, and release of retention.
        i. All Proceed Order time and material costs are subject to verification. Contractor must notify the Engineer, Owner, and/or Owner Representative when work on such changes is to start and when complete. All appropriate documentation itemizing time and materials must be provided to the Engineer/Owner.
        ii. To receive full recognition, labor assigned to contract changes via Proceed Order must, insofar as possible, work continuously on the change rather than interchanging between contract work and the change work.
E. In order that proposed changes in work, if they should occur, can be processed without undue delay, the Contractor shall indicate in each separate proposal requesting a change in the contract supporting information in detailed breakdown form including, at a minimum, the following:
    a. The exact location of the change requested.
    b. The square feet, square yards, cubic yards, linear measure, or any other unit of measure applicable to the work involved, together with the unit cost of labor and material by trades. Labor unit cost shall include associated insurance. Other types of protection are assumed to be covered by overall job insurance with no additional changes assigned to unit costs.
    c. Justification/clarification of the need for the change.
    d. Viable options for completing the proposed change with support documentation and associated costs.
    e. Valued engineering, when possible.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012657

SECTION 012900
PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
B. Related Sections include the following:
    a. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.03 DEFINITIONS

A. Schedule of Values: A statement furnished by the Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing the Contractor's Applications for Payment.

Schedule of Values for this project to match section 004100 Bid Schedule

1.04 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
    a. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
        i. Application for Payment forms with Continuation Sheets.
        ii. Submittals Schedule.
        iii. Contractor's Construction Schedule.
    b. Submit the Schedule of Values to the Engineer at the earliest possible date but no later than seven (7) calendar days before the date scheduled for submittal of initial Applications for Payment.
B. Format and Content: Use the bid schedule as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
    a. Identification: Include the following Project identification on the Schedule of Values:
        i. Project name and location.
        ii. Name of Engineer.
        iii. Name of Construction Manager
        iv. Project Number.
        v. Contractor's name and address.
        vi. Date of submittal.
    b. Submit draft of HUD-51000 for HUD projects or AIA Document G703 Continuation Sheets for all other projects.

c. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
    i. Related Specification Section or Division.
    ii. Description of the Work.
    iii. Name of subcontractor.
    iv. Name of manufacturer or fabricator.
    v. Name of supplier.
    vi. Change Orders (numbers) that affect value.
    vii. Dollar value.
        1. Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
d. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Bidding & Contracting Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
e. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
f. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
    i. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
g. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
h. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
    i. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
i. Schedule Updating: Update and resubmit the Schedule of Values before the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.05 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Engineer and paid for by the Owner.
    a. Initial Application for Payment, Application for Payment at time of Substantial Completion, and Final Application for Payment involve additional requirements.
B. Payment Application Times: The date for each progress payment is indicated in the Agreement between the Owner and the Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
C. Payment Application Forms: Use forms provided by the Owner.

D. Application Preparation: Complete every entry on the form. Notarize and execute by a person authorized to sign legal documents on behalf of the Contractor. The Engineer will return incomplete applications without action.
    a. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions are made.
    b. Include amounts of Change Orders and Construction Change Directives issued before the last day of the construction period covered by the application.
E. Transmittal: Submit the signed original Application for Payment electronically (email, download website, or USB memory stick) to the Engineer. Obtain confirmation of receipt by the Engineer for your records.
    a. Transmit each copy with a transmittal form listing all attachments and recording appropriate information about application.
F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien or conditional releases from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
    a. Submit partial waivers on each item for the amounts requested in previous applications, after deduction for retention, on each item.
    b. When an application shows completion of an item, submit final or full waivers.
    c. The Engineer reserves the right to designate which entities involved in the Work must submit waivers.
    d. Waiver Forms: Submit waivers of lien or conditional releases on forms, executed in a manner acceptable to the Engineer.
G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for the construction period covered by the previous application.
    a. Submit partial waivers on each item for amounts requested in previous applications, after deduction for retention, on each item.
    b. When an application shows completion of an item, submit final or full waivers.
    c. The Engineer reserves the right to designate which entities involved in the Work must submit waivers.
    d. Submit final Application for Payment with or proceeded by final waivers or Unconditional Releases from every entity involved with performance of the Work covered by the application whom is lawfully entitled to a lien.
    e. Waiver Forms: Submit waivers of lien or Unconditional Releases on forms, executed in a manner acceptable to the Engineer.
H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:
    a. Subcontractor Schedule.
    b. Schedule of Values.
    c. Contractor's Construction Schedule.
    d. Products list.
    e. Schedule of unit prices.
    f. Submittals Schedule.
    g. List of Contractor's staff assignments.
    h. List of Contractor's principal consultants.

i. Copies of building permits (if applicable).
j. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
k. Initial progress report.
l. Report of preconstruction conference.
m. Certificates of insurance and insurance policies.
n. Construction Contract Security.
o. Data needed to acquire Owner's insurance.
p. Initial settlement survey and damage report, if required.

I. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for the portion of the Work claimed as substantially complete.
   a. Include documentation supporting the claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   b. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   a. Evidence of completion of Project closeout requirements.
   b. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   c. Updated final statement, accounting for final changes to the Contract Sum.
   d. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   e. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   f. AIA Document G707, "Consent of Surety to Final Payment."
   g. Evidence that claims have been settled.
   h. Final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
   i. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100
PROJECT MANAGEMENT AND COORDINATION

PART 1: GENERAL

1.1 DESCRIPTION

A This section details the Contractor and the Owners' responsibilities in coordinating efforts for this project

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 CONTRACT DOCUMENTS

A The Contractor and all subcontractors shall become completely familiar with the requirements of the contract documents.

B In the event discrepancies or conflicts are encountered, notify the Engineer immediately. Where there is a discrepancy, including referenced Codes, the documents requiring the strictest interpretation, higher quality, the greater quantity, or the more difficult work shall govern, unless otherwise determined by the Engineer.

3.2 REQUEST FOR INFORMATION/INTERPRETATION

A Refer to Section 012613.

B The Contractor will need to coordinate the sequencing of work so that Requests for Interpretation (RFI's) be submitted to the Engineer in a timely manner so as not to delay work.

3.3 SCHEDULE

A The contractor must submit a Schedule of Work prior to commencing work.

B The Schedule of Work shall be updated monthly at a minimum, and MUST BE submitted with all Requests for Payment.

3.4 UTILITIES

A The Contractor will need to coordinate with all utility companies that must be relocated or have connection to in the project area. Coordination should include scheduling with utility companies when various stages of work may be performed and when potential shutdowns may occur.

3.5 PERMITS

A The Contractor will need to coordinate with all permitting agencies with jurisdiction over this project. The Contractor shall coordinate any inspections necessary and schedule work around requirements of the permits. The Contractor shall be required to adhere to all of the requirements including all mitigation which may be required in these permits.

3.6 OWNER

A The Contractor shall coordinate with the Owner for all work to be performed.

3.7 INSTALLATION

A Coordination methods at the Project Site are the responsibility of the Contractor. The Engineer may disapprove Work completed by the Contractor or data submitted by the Contractor, when in the Engineer's judgment coordination has been inadequate to ensure the highest quality.

END OF SECTION 013100

SECTION 013200
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.1 GENERAL

A. The intent of the progress schedule is to assist the Contractor, Engineer, and Owner in planning and executing Work and to assist the Project Coordinator and Owner in monitoring the construction progress for the purpose of coordination, communication, evaluation of Applications and Certificates for Payment, and evaluation of time extension requests.

B. The Project Coordinator's review of the schedule will be to ensure that it conforms to the requirements of the contract documents. The construction means, methods, sequence and scheduling of the work is the Contractor's responsibility and is not reviewed by the Project Coordinator or Owner. Contract completion date(s) is as specified in the Notice to Proceed and subsequent adjustments as ratified per Sections 007200 and 012613. The Project Coordinator's review of the schedule does not change, revise, or amend that date(s), nor does it constitute an approval of the Contractor's ability to complete the work within the Contract Time.

C. If the Contractor submits a schedule which indicates a construction completion date prior to the advertised contract completion date, it is understood that the Owner shall not be obligated for any costs associated with any extensions of the Contractor's schedule which is still within the stipulated contract completion period. No contract time extension shall be granted until the contractor demonstrates that the Critical Path is directly impacted, and the construction completion date must be extended past the stipulated contract completion date.

1.2 FORMAT

A. Listings: Reading from left to right, in ascending order for each activity. Identify each activity with the applicable Specification section number.

B. Diagram Sheet Size: must be legible.

1.3 SCHEDULES

A. Provide a time scaled CPM precedence diagram with a separate activity bar for each work activity. Network diagram to illustrate order and interdependence of activities and sequences of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities. Indicate early and late start, early and late finish, float time, duration, manpower loading and description of each activity. Indicate critical path.

B. Provide as many activities as necessary to clearly show how the project will be constructed within the time allowed. As a minimum, every item on the schedule of values must be shown on the progress schedule. Provide sub-net schedules where necessary to enhance clarity.

C. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities.

D. Show accumulated percentage of completion of each item of Work at time of each Application for Progress Payment.
E. As a sub-net show dates including specified Project Coordinator's review time for shop drawings, product data, and samples. Indicate decision date for selection of finishes.
F. Show product delivery dates, including those furnished and/or installed by Owner.
G. Show dates when application for separate permits (i.e., fire alarm, fire sprinkler, etc.) will be made and when the permit will be received.
H. Show dates when application for warranties/guarantees will be made and when warranties will be delivered. Final payment will not be made until all warranties/guarantees have been received and determined to be acceptable.
I. Include dates for Project Coordinator's punch list review and completion of punch list items.
J. Include dates for submission of operation and maintenance manuals and project record drawings (minimum of thirty days before final completion). Show Project Coordinator's review time and re-submittal of corrected manuals and drawings.

1.4 UPDATING SCHEDULES

A. Maintain schedules to record actual start and finish dates of completed activities.
B. Indicate progress of each activity at the time of the revision date. Update diagrams to graphically depict current status of Work.
C. Indicate revision date on revised schedule.
D. Show changes occurring since previous Schedule submission such as:
    a. Any major changes in scope;
    b. Activities modified since previous submission;
    c. Revised projections for progress and completion, as applicable;
    d. Any other identifiable changes.
E. Provide narrative report as needed to define:
    a. Problem areas; anticipated delays; and impact of these on the project schedule.
    b. Corrective action recommended, and its effect.
F. The periodic Applications and Certificates for Payment will not be processed until the progress schedule is updated and submitted as specified.

1.5 SUBMITTALS

A. Within fourteen (14) calendar days after date of Owner-Contractor Agreement, submit proposed network diagram defining planned operations for the Work.
B. If required by Project Coordinator, participate in review of network diagrams jointly with General Contractor.
C. Submit updated network schedules with each Application for Payment or more frequent if directed by Project Coordinator.
D. Submit the number of opaque reproductions the Contractor requires, plus two (2) copies which will be retained by Project Coordinator.

1.6 DISTRIBUTION

A. Distribute copies of reviewed schedules to the project site file, Sub-Contractors, suppliers, Factory/Engineering Firm, Project Coordinator, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 PRODUCTS (Not Used)
PART 3 EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013300
SUBMITTALS

PART 1 GENERAL

1.1 SUBMITTAL PROCEDURES

A. Schedule submittals to expedite the Project. Transmit submittals in accordance with the currently approved Progress Schedule and in such a sequence as to avoid delays in the Work. Coordinate submission of related items with the progress schedule. Submit a Schedule of Submittals to the Project Coordinator prior to initial Application for Payment.

B. Make and deliver all submittals to the Engineer Point of Contact.

C. Provide space for General Contractor to review stamps.

D. General Contractor must review and certify each submittal prior to submission to the Engineer. Mark certification on each submittal with permanent marking ink.

E. Reproduce and distribute copies of reviewed submittals to all concerned/impacted parties. Instruct parties to promptly report any inability to comply with provisions. Pay all costs for reproduction, distribution, and materials.

F. Submit items requiring color selection within thirty (30) calendar days of contract award. Colors will be selected after all color submittals are received by the Project Coordinator.

G. Coordinate submittals into groupings containing all associated items to facilitate review of inter-related items:
    a. Finishes, selection of colors, textures, or patterns.
    b. Associated items which require correlation for efficient function or for installation.
    c. Submit all Division 2 submittals at the same time. Failure to do so will delay processing and review by the Project Coordinator or Owner's Consulting Engineer. Review will not occur until submittal is complete.

H. Identify, in writing, variations from Contract Documents. Identify, in writing, product or system limitations detrimental to successful performance of the completed Work.

I. Accompany submittals with transmittal letter containing:
    a. Date.
    b. Project title and number.
    c. Contractor's name and address.
    d. Number of copies of Shop Drawings, Product Data, and Samples submitted.
    e. Identification of submittal as it relates to:
        i. Contractor/Supplier/Manufacturer.
            1. Name.
            2. Address.
            3. Telephone number.
            4. Representative's name.
    f. Detail number and location in Construction Documents.
    g. Specifications reference number and paragraph.
    h. Applicable Standards.
    i. Finishes.
    j. Identification of deviations from Contract Documents.

J. Additional Information Required:

a. Relation to adjacent structure or materials.
b. Fabrication methods, assembly, special installation requirements, accessories, fasteners, and other pertinent information.
c. Field dimensions, clearly identified.
d. Coordination with other trades. Stamped and signed by affected trades.

K. Distribution of Submittals:
a. Project Coordinator will retain a minimum of two (2) copies of all submittals, with one (1) set of reviewed submittals retained as "Record Documents". Mark up with as-built information and provide to Owner as part of Project Record Documents.
b. General Contractor to maintain one (1) set of reviewed submittals at project site.

1.2 PROPOSED PRODUCTS LIST AND CONTRACTORS LIST

A. Prior to submission of First Application for Payment, submit complete list of Contractors and suppliers to be used for the Work. Provide specification section identification number, addresses, and telephone numbers for each listed Contractor and supplier.
B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.3 SHOP DRAWINGS

A. Prior to submission of First Application for payment, submit complete list of all shop drawings, product data and/or sample submittals as required by these specifications. List to include date columns showing anticipated and actual Submittal dates to General Contractor and Project Coordinator as well as return dates from General Contractor and Project Coordinator. Update this list for use at the Progress Meetings.
B. Present in clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.
C. Identify field dimensions; show relation to adjacent or critical features or Work or products.
D. Minimum Sheet Size: 8½ x 11 inches.
E. Do not submit freehand drawings.
F. On shop drawings requiring Code Agency approval, submit on format and media required by Approval Agency. Include information required by Project Documents and Approval Agency.
G. Submit four (4) copies to General Contractor for review. The General Contractor will return two (2) reviewed copies with comments. After review and correction the Contractor shall reproduce and distribute copies of the shop drawings as required for Contractor use and contractor's needs. Provide the copy of final Submittal to Owner for the Project records.
H. Do not provide Submittals not required by these specifications. They will be returned to the Contractor and/or Factory/Engineering Firm without review.

1.4 PRODUCT DATA

A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Paragraph number.

Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

B. Do not submit Material Safety Data Sheets (MSDS). MSDS are Contractor and Factory/Engineering Firm safety, means and methods responsibilities. MSDS will not be reviewed.
C. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.
D. Submit four (4) copies of product data and manufacturer's instructions to General Contractor for review. The General Contractor will return two (2) reviewed copies with comments. After review and correction, the Contractor shall reproduce and distribute copies as required for Contractor use and contractor's needs. Provide the copy of final submittal to Owner and Project Coordinator for their records.

1.5 SAMPLES

A. Submit full range of manufacturer's standard and special finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for Project Coordinator's selection.
B. Submit samples which may be used in the Work as indicated in the Specification section.
C. Label each sample with identification required for transmittal letter.
D. Submit two (2) samples of each product requiring color or texture/finish selection unless specified otherwise in individual specification sections: one (1) sample will be retained by Project Coordinator, one (1) sample will be returned to the Contractor to be retained at the job site.
E. Field samples are to be maintained at the site of the Work and are to be removed after substantial completion unless directed otherwise.
F. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.6 MANUFACTURER'S CERTIFICATES AND WARRANTIES

A. When specified in individual specification Sections, submit manufacturer's certificate and/or warranty to Project Coordinator for review, in quantities specified for Product Data.
B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.
C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Project Coordinator.
D. Provide certificate and/or warranty by manufacturer on company letterhead paper or forms signed by an officer of the manufacturer. On document name the Owner, project, project location, Contractor, and Contractor's address. Indicate product furnished, quantity furnished, and date of delivery.

1.7 CONTRACTOR REVIEW

A. Coordinate submittals with requirements of Work and of Contract Documents.
B. Apply Contractor's stamp with signature. The submittal signed by the Contractor certifies that the Contractor has reviewed the submittal for accuracy, completeness, and compliance in accordance with the General Conditions. It also certifies that the

Contractor has verified product required, field dimensions, adjacent construction Work and Contract Documents. Submittals without Contractor's stamp and signature will be rejected. Notify Project Coordinator in writing at time of submittal of any deviations from requirements of Contract Documents.

1.8 RESUBMITTALS

A. Revise and resubmit submittals as required, identify all changes made since previous submittal.
B. Shop Drawings and Product Data:
    a. Revise initial drawings or data, and resubmit as specified for the initial submittal.
    b. Indicate any changes which have been made including those requested by the Project Coordinator.
C. Samples: Submit new samples as required.

1.9 PROJECT COORDINATOR REVIEW

A. Project Coordinator will review shop drawings, product data, and samples and return submittals within twenty-one (21) calendar days.
B. For Project Coordinator's color selection, allow thirty (30) calendar days from time all color samples for the Work have been delivered to the Project Coordinator.
C. Project Coordinator review is only for general conformance and compliance with Project design concept and Contract Documents. Any action shown is subject to Contract Document's requirements. Contractor is responsible for dimensions (confirm and correlate at job site); fabrication processes; construction techniques; quantities; space requirements; coordination of work with that of all other trades; union jurisdiction; infringements of patent rights; possible cause of injury to persons or property; and satisfactory performance of the work.
D. Project Coordinator's review of separate items does not constitute review of assembly in which it functions.

END OF SECTION 013300

SECTION 013591
CONSTRAINTS AND MITIGATIONS

PART 1: GENERAL

1.1 Description

A. The following requirements supplement the General Conditions, 007200.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 Constraints and Mitigations

A. The Owner has completed an environmental review process governed by the various rules, regulations, and codes of the regulating body. In compliance with the environmental review document, the Contractor's operations are subject to the following constraints and environmental protection measures. In addition to these, the Contractor is also responsible for compliance with any and all constraints or environmental protection measures that may be noted in other sections of the Technical Specifications.

B. The Contractor's operations are subject to the following constraints and mitigations:

1. If buried materials are encountered, all soil disturbing work should be halted at the location of any discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the national Historic Preservation Act (36CFR60.4). The Owner should be contacted immediately. Prehistoric archaeological site indicators expected within the general area include: chipped chert and obsidian tools and tool manufacture waste flakes; grinding and hammering implements that look like fist-size river tumbled stones, and for some rare sites, locally darkened soil that generally contains abundant archaeological specimens. Historic remains expected in the general area commonly include items of ceramic, glass, and metal. Features that might be present include structure remains (e.g., cabins or their foundations) and pits containing historic artifacts.

3.2 Site Conditions

A. Coordination with the Engineer:

1. Contact the Engineer at least five (5) working days in advance of any planned removal of historic fabric, demolition, or ground disturbance work. The Engineer will, in turn, notify the Archaeologist/Cultural/Natural Resource Specialist when such work is planned.
2. The Contractor will need to coordinate directly with the Engineer regarding archaeological/cultural/natural specialist monitoring. Any ensuing directives from the archaeologist/cultural/natural specialist in relation to need for interruption of specific contractor work will be made through the Engineer.

B. Limit of Work

1. The Contractor will need to layout all planned removal, demolition, or ground disturbance work for review and approval prior to such work commencing.
2. The Contractor will need to avoid all removal, demolition, ground disturbance, and other destructive activities that may disturb historic fabric, artifacts, archaeological, cultural or natural resources until the Engineer gives approval to proceed.

C. Role of Archaeologist/Cultural/Natural Specialist

1. Prior to the construction start date, but during the submittal period, archaeologist/cultural/natural specialist(s) will attempt to mark or identify, where certain historical fabric, cultural resources are to be documented, salvaged, or left in situ place on the building/structure/feature/site as identified in the construction documents. This by no means is meant to indicate that during the course of demolition, ground disturbance, or destructive activities; that the contractor is free to move forward without first obtaining permission to proceed from the Engineer, or that during the course of such actions, new or previously unknown areas will not be marked or identified by the archaeologist/cultural specialist.
2. During construction, archaeologist/cultural/natural specialist reserve the right to monitor all demolition, ground disturbance, and destructive activities.
3. Archaeologist/cultural/natural specialist will determine whether appropriate treatments such as handwork, will be necessary for certain demolition, ground disturbance, or destructive activities. Directives in relation to need for alteration of technique or interruption of specific contractor work will be given by the Engineer.

D. Down Time

1. If unforeseen cultural/natural resources are uncovered during execution of the work, the Engineer will put work on hold at that specific location, and the Contractor will be redirected to other tasks. The archaeologist/cultural/natural specialist will record and evaluate the find and implement avoidance, preservation, or recovery measures as appropriate compliance with environmental law and department resource directives prior to the Engineer directing resumption of work at that specific location.
2. The Contractor shall include in the project schedule, consideration of up to (not less than) five (5) calendar days down time for unforeseen conditions uncovered during execution of work that may require further resource analysis. Down time days must be approved by the Engineer.

3.3 Protection of Existing Resources

A. Provide required protection, in areas identified on drawings, or as directed by the Engineer to maintain integrity of the resources to be protected during the course of the project.

END OF SECTION 013591

014000
BEST MANAGEMENT PRACTICES

The Following - Construction Best Management Practices (BMPs) were selected from the California Stormwater Quality Association (CASQA) are listed for the contractor's convenience. *All practices contained in the BMP Handbook shall be reviewed by the contractor and implemented if applicable.*

WM-1	Material Delivery and Storage
WM-2	Material Use
WM-3	Stockpile Management
WM-4	Spill Prevention and Control
WM-5	Solid Waste Management
WM-8	Concrete Waste Management
NS-9	Vehicle and Equipment Fueling

WM-1 Material Delivery and Storage

Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Prevent or reduce or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2 Material Use, or WM-4, Spill Prevention and Control.

Applications:

- Delivery and storage of concrete components
- Delivery and storage of petroleum products such as fuel, oil, and grease .
- Hazardous chemical acids, lime, glues, adhesives, paints, solvents, and curing compounds.
- Concrete compounds
- Other materials that may be detrimental if released to the environment.

Limitations: Space limitations may preclude indoor storage.
Storage sheds often must meet building and fire code requirements.

Implementation: The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored. The Spill Prevention and Control Plan shall include all MSDS.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located near the construction entrances, away from waterways, if possible. Avoid transport near drainage paths or waterway.

- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFAA30
- An up to date inventory of materials delivered and stored onsite should be kept.
- Hazardous materials should be handled as infrequently as possible.
- During the rainy season, consider materials in a covered area. Store materials in secondary containments such as earthen dike, horse trough, for non-reactive materials such as detergents, oil, grease, and paints. Non-reactive materials such as detergents, oil, grease, and paints shall be contained in a watertight container
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and when possible, in secondary containment with the same. See WM-3 Stockpile Management.
- All chemicals shall be labeled and stored in a closed container.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquids chemicals are unloaded.

Material Storage Area and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response to access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, each temporary containment facility should be covered during non-working days, prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.
- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the

rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or sheds when available.
- Am ample supply of appropriate spill clean-up material should be kept near storage areas.

Material Storage Area and Practices
- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup
- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.

Inspection and Maintenance:
- Inspect and verify that activity based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Keep an ample supply of spill cleanup materials near the storage area.
- Keep storage areas clean, well-organized, and equipped with ample cleanup supplies as · appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

WM-2 Material Use

Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Description and Purpose: Apply for the following materials used onsite:
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete compounds
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds.
- Concrete compounds

- Other materials that may be detrimental to the environment

Implementation: The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instruction regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train employee and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoor or in containment area. Never clean paintbrushes or rinse paint containers
- into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse into a concrete washout pit located in the staging area. For oil based, paint, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.
- Keep an ample supply of spill clean-up material near use areas. Train employees in spill clean-up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

Inspection and Maintenance:

- Inspect and verify that activity based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Maintenance of this best management practice is minimal
- Spot check employees and subcontractors throughout the job to ensure appropriate practices are being employed.

WM-3 Stockpile Management

Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials and pressure- treated wood.

Implementation: Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

- Locate stockpiles a minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and inlets.
- Protect all stockpiles from stormwater run on using a temporary perimeter sediment barrier.
- Use sandbags as a temporary perimeter sediment barrier.
- Implement wind erosion control practices as appropriate on all stockpiled material including Wind Erosion Control.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- During the rainy season, soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- During the non-rainy season, soil stockpiles should be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase

- During the rainy season, the stockpiles should be covered or protected with a temporary sediment perimeter barrier at all times.
- During the non-rainy season, the stockpiles should be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

Stockpile of "cold mix"

- During the rainy season, cold mix stockpiles should be placed on and covered with plastic. or comparable material at all times.
- During the non-rainy season, cold mix stockpiles should be placed on and covered with
- plastic or comparable material prior to the onset of precipitation.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected further as follows:

- All stockpiles should be protected with sandbags prior to the onset of precipitation.
- Stockpile of “cold mix" should be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Inspection and Maintenance:

- Inspect and verify that activity based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly. weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Repair and/or replace perimeter controls and covers as needed to keep them

functioning properly.

WM-4 Spill Prevention and Control
Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information particularly on spill prevention.

Applications:
- Soil stabilizers/binders
- Dust palliatives
- Fuels
- Lubricants
- Other petroleum distillates

Limitations:
- This BMP applies to spills caused by contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored on site. This BMP has been· specifically written to address this project. The contractor will include additional information when hired.

Implementation: The following steps will help reduce the stormwater impacts of leaks and spills.

Education
- Be aware that different materials pollute in different amounts. Make sure that each employee knows that a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment form spills and leaks.
- Hold regular meetings to discuss and reinforce appropriated disposal procedures (incorporate into regular safety meetings). The project Manager and/or Engineer shall hold weekly meeting with the contractor and all employees at the staging area to discuss construction activities and BMPs.
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spill of oils, petroleum products, substances listed under 40 CDF parts 110, 107, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spill should be covered and protected from stormwater run on during rainfall to the extent that it doesn't compromise clean-up activities.
- Do not bury or wash spill with water.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored
- or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter control, containment structures, covers, and liners should be respired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the applied material is hazardous, the used cleanup materials are also hazardous and must be sent to either a certified laundry (rag) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
    - Contain the spread of the spill
    - Recover spilled materials.
    - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
- Spills should be cleaned up immediately
    - Contain spread of the spill
    - Notify the project foreman immediately.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate' vicinity, the following steps should be take:
    - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the following local Fire Department and the Office of Emergency Services for the location of the project. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- Notification should first be made by telephone and followed up with a written report.
    - The services of spill contractor or a Haz-Mat team should be obtained immediately.
    - Construction personnel should not attempt to clean up until the appropriate and qualified staff have arrived at the job site.
    - Other agencies which may need to be consulted, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, CALIOSHA, etc.

Reporting

- Report significant spills to local agencies, such as Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run on of stormwater and the runoff of spills.

- Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fuel. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as drain pan to catch spills or leaks when removing or changing fluids.
- Place drips pans under construction equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place
- the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal.
- Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked .
- batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designated area, located away from drainage course, to prevent the run on of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as drain pan, when fueling to catch spill/leaks.

Inspection and Maintenance:

- Inspect and verify that activity based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Keep supplies of spill control and cleanup materials onsite, near storage, unloading and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

WM-5 Solid Waste Management

Description and Purpose: Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste

by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Applications:

- Solid waste generated from packaging materials including wood, paper, and plastic.
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products.
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes.
- Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, Styrofoam and other materials used to transport and package construction materials.

Implementation:

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite. use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition of construction. Container filled with solid waste shall be transported to the Eureka transfer center daily during dock demolition.
- Collect site trash each day, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids,
- additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpsters cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- •Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- •Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractor on solid waste storage and disposal procedures.
- Require that employees and subcontractors follow solid waste handling and storage
- procedures.

- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection. Storage. and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage graters, trash racks, and ditch lines should be priority.
- Trash receptacles should be provided in the staging area where workers also congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly.
- Stormwater run on should be prevented from contacting stored solid waste. All solid waste shall be stored in watertight dumpsters.
- •Solid waste storage areas should be located at least 50 feet from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Have hazardous waste hauled to an appropriate disposal site and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and brush from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Inspection and Maintenance:

- Inspect and verify that activity-based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Inspect construction waste areas regularly
- Arrange for regular waste collection.

WM-8 Concrete Waste Management
Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Prevent or reduce the discharge of pollutants to stormwater from concrete waste by performing onsite washout in designated area and training employee and subcontractors.

Applications:

- Concrete is used as a construction material.
- Concrete trucks and other concrete-coated equipment are washed onsite.

Limitations: Offsite washout of concrete waste may not be possible.

Implementation: The following steps will help reduce stormwater pollution from concrete waste:

- Discuss the concrete management techniques described in the BMP (such as handling of concrete waste and washout) with ready-mix concrete supplier before any deliveries are made.
- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Store dry and wet materials under cover, away from drainage areas
- Avoid mixing excess amount of fresh concrete
- Perform washout of concrete trucks offsite or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on site.
- For onsite washout:
    - Locate washout area at least 50 feet from storm drains, open ditches, or water bodies.
    - The designated concrete washout area shall be located in the staging area or as shown plans.
    - Do not allow runoff from this area.

Education:

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- Arrange for contractor's superintendent or representative to oversee and enforce concrete waste management procedures.

Concrete Slurry Wastes

- PCC and AC waste should not be allowed to enter storm drains or watercourses.
- PCC and AC waste should be collected and disposed of or placed in temporary concrete washout facility.
- A sign should be installed adjacent to the temporary concrete washout facility to inform

concrete equipment operators to utilize the proper facility.

- The contractor shall utilize a below grade washout facility. The sediment is primarily composed of sand at the staging area. If excavation is not practical (i.e., pit collapses due to high fraction of sand in the sediment), then above temporary washout facility may be constructed.
- A foreman or construction supervisor should monitor onsite concrete working tasks, such as saw cutting, coring, grinding, and grooving to ensure proper methods are implemented.
- Slurry residue should be vacuumed and disposed in a temporary pit (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Procedures below) and allowed to dry. Dispose of dry slurry residue in accordance with WM-5, Solid Waste Management.

Onsite Temporary Concrete Washout Facility. Transit Truck Washout Procedures

- Temporary concrete washout facilities should be located a minimum of 50 feet from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities should be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities should have a temporary pit or berm areas of sufficient
- volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Washout of concrete trucks shall be performed in designated areas only.
- Only concrete from mixer truck chutes should be washed into concrete wash out.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.
- Once concrete wastes area washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed per WM-5, Solid Waste Management. Dispose of hardened concrete on a regular basis.
- Temporary Concrete Washout Facility (Type Above Grade)
    - Temporary concrete washout facility (type above grade) should be constructed with a recommended minimum length and minimum width of 10 ft, but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
    - Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
- Temporary Concrete Washout Facility (Type Below Grade)
    - Temporary concrete washout facilities (type below grade) should be constructed with recommended minimum length and minimum width of 10 ft. The quantity and volume should be sufficient to contain all liquid and concrete waste generated

by washout operations.
    - Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of.
- Holes, depressions or other ground disturbance caused by removal of the temporary concrete
- washout facility should be backfilled and repaired.

Inspection and Maintenance:

- Inspect and verify that activity based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Temporary concrete washout facility should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12in for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and disposed of.
- Washout facilities must be clean, or new facilities must be constructed and ready for use once the washout is 75% full.

WM-9 Sanitary/Septic Waste Management

Primary objective: Waste Management and Materials Pollution Control

Description and Purpose: Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well maintained facilities, and arranging for regular service and disposal.

Applications:

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Implementation:

Sanitary and septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes re properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.
- Wastewater should not be discharged or buried within the project site.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Untreated raw wastewater should never be discharged or buried.
- Sanitary facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.

Education

- Educate employees and subcontractors and suppliers on sanitary waste storage and disposal procedures.
- Educate employees and subcontractors and suppliers in identification of sanitary waste.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meeting).
- Establish a continuing education program to indoctrinate new employees.

Inspection and Maintenance:

- Inspect and verify that activity based BMPs are in place prior to commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Arrange for regular waste collection
- Portable sanitary facilities must be secured with spikes down to prevent over turning.

NS-9 Vehicle and Equipment Fueling

Objectives:

- Non-Stormwater Management Control

Description and Purpose: Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementation spill control, and training employees and subcontractors in proper fueling procedures.

Application: These procedures are suitable on all construction sites where vehicle and equipment take place.

Implementation:

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.

- Discourage "topping off' fuel tanks.
- Absorbent spill cleanup materials and spill kits should be available in fueling areas on fueling trucks and should be disposed of properly after use. All absorbent pads will be placed in the hazardous material dumpster for later disposal at an approved disposal site.
- Drip pans should be used during vehicle and equipment fueling.
- Avoid mobile fueling of mobile construction equipment around the site, rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time. All construction equipment will be transported back to the staging area at the end of each working day.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used.
- Dedicate fueling areas should be protected from stormwater run on and run off and should be located at least 50 feet away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts. The contractor shall determine if recovery nozzles are need at the project site.
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks. There will be no fuel storage tanks at the project site. A fuel delivery truck shall deliver the fuel once a day to the staging area and fuel the equipment before leaving the site.

Inspection and Maintenance:

- Vehicle and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately, or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.
- Should contaminated soil be collected at the staging area, then it shall be stockpiled separately from non-contaminated sediment stockpile and disposed appropriately.

Additional Best Management Practices

- Dust Control / Wind Erosion Control
    - Contractor shall implement appropriate control measures such as spraying of water or covering of material.
    - Street and site cleaning and sweeping.
- Saw Cutting and Pavement removal
    - Contractor shall contain all materials created during these activities such as dust or slurry
- Protect and establish vegetation. The root structures of plants and trees help keep soil in place while leaves and canopies help dissipate rainfall energy to prevent dislodging and transporting of soil.
- Stabilize construction entrances and exits to prevent tracking onto roadways. As vehicles enter and leave construction sites, pollutants such as sediment, gravel and other loose particles are spread onto adjacent roads. Those pollutants can get washed into roadside ditches and are a nuisance to drivers when damage to vehicle paint or windshields occurs. Protect exposed slopes from erosion through preventative measures. Cover the slopes to avoid contact with storm water by hydroseeding, applying mulch or using plastic sheeting.
- Install straw wattles (fiber rolls) and silt fences on contour to prevent concentrated flow. Straw wattles should be buried 3 to 4 inches into the soil, staked every 4 feet, and limited to use on slopes that are no steeper than 3 units horizontal to 1 unit vertical. Silt fences should be trenched 6 inches by 6 inches into the soil, staked every 6 feet, and placed 2 to 5 feet from any toe of slope. Avoid the use of hay bales as sediment control devices. They have high failure rates and the hay is better suited as ground cover.
- Use brooms and shovels whenever possible to maintain a clean site instead of a hose. Introducing more water than necessary only adds to water pollution.
- Designate a concrete washout area to avoid wash water from concrete tools or trucks from entering gutters, inlets or storm drains. Maintain washout area and dispose concrete waste on a regular basis.
- Establish a vehicle storage, maintenance and refueling area to minimize the spread of oil, gas and engine fluids. The use of oil pans under stationary vehicles is strongly recommended.
- Protect drainage inlets from receiving polluted storm water through the use of filters such as fabrics, gravel bags or straw wattles.
- Check the weather forecast and be prepared for rain by having necessary materials onsite before the rainy season.
- Inspect all BMPs before and after a storm event. Maintain BMPs on a regular basis and replace as necessary.
- Street Sweeping and Cleaning: The Contractor is to implement a street sweeping and cleaning schedule for the duration of the project. The existing frontage improvements, including but not limited to existing curb & gutter, and paved roadways are to be kept free of debris. Material tracked onto the frontage improvements during construction activities, such as moving vehicles and equipment on and off the site, are to be cleaned at the end of each workday. Hand broom sweeping and washing will be acceptable for minor material removal. Street sweeping with mechanical equipment will need to be conducted at least once a week to address any materials tracked onto existing improvements.

Additional requirements listed in section 011000 Summary of Work

SECTION 014500
QUALITY CONTROL

PART 1: GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements for quality assurance and quality control.

B. Contractor reserves the right to arrange and pay for a qualified independent testing agency to perform required testing for the project. Test reports shall be submitted to the Owner within forty-eight (48) hours of receipt by Contractor.

C. Owner will retain its own third party independent firm to conduct field testing/inspections and provide for all necessary laboratory tests and reports.

D. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of the responsibility for compliance with the contract Documents.

1. Specified test, inspections, and related actions do not limit the Contractor's quality-control efforts as necessary to provide compliance with the Contract Document requirements.
2. Requirements for the Contractor to provide quality-control services required by the Designer, the Owner, or authorities having jurisdiction are not limited by the provisions of this section.

1.2 DEFINITIONS

A. Quality-Assurance Services: activities, actions, and procedures performed before and during execution of the work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: tests, inspections, procedures, and related actions before, during, and after execution of the work to evaluate completed construction complies with contract and construction industry requirements. Quality control services do not include contract enforcement activities performed by the Owner or the Designer of record.

C. Testing Agency: an entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.3 DELEGATED DESIGN

A. Performance and Design Criteria: where professional design services or certifications by a design professional are specifically required of the Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to the Owner.

1.4 SUBMITTALS

A. Qualification Data: for testing agencies specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Delegated-Design Submittal: in addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to the Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Contractor’s Daily quality Control reports: the contractor shall designate an individual responsible for maintaining control over the quality of the work. For each day on which work is scheduled to be performed, the Contractor’s Quality Control Representative shall prepare and submit certified written reports that include the following:
   1. Date of report preparation and date work was performed.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples, tests, or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the work performed that day, and the reasons for non-work.
   7. Item of work tested or inspected. Test and inspection methods.
   8. Identification of products delivered/installed and corresponding specification sections.
   9. Complete test or inspection data.
   10. Test and inspection results and an interpretation of test results.
   11. Weather conditions. Ambient conditions at time of sample taking, testing and inspecting.
   12. Comments or professional opinion on whether tested or inspected work complies with the Contract Document requirements.
   13. Name and signature of Quality Control Representative, and laboratory inspector.
   14. Recommendations on retesting and re-inspecting.

D. Permits, licenses, and certificates: for the Owner’s records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, documents, established for compliance with standards and regulations bearing on performance of the work.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: a firm experienced in producing products similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Factory-Authorized service Representative Qualifications: an authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer’s products that are similar in material, design, and extent to those indicated for this project.

C. Installer Qualifications: a firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: a firm experienced in manufacturing products or systems similar to those indicated for this project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: a professional engineer who is legally qualified to practice in jurisdiction where project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this project in material, design, and extent.

F. Specialists: certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
   1. Requirement for specialists shall not supersede building codes and similar regulations governing the work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: an agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in the types of tests and inspections to be performed.

1.6 QUALITY CONTROL

A. Owner Responsibilities: the Owner may engage a qualified testing agency to perform additional testing services.
   1. The Owner will furnish the Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
   2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to the Contractor, and the Contractor shall cover the expense of such retesting and re-inspection at no additional cost to the Owner.
   3. The presence or absence of the Owner's inspector or testing agency does not relieve the Contractor of the sole responsibility for compliance with the Contract Documents.

B. Contractor Responsibilities: the Contractor is solely responsible for controlling the work to comply with the Contract Documents. Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
   1. Where testing or inspection services are not indicated the Owner's responsibility, engage a qualified testing agency to perform these quality-control services.
      i. The Contractor shall not employ the same entity engaged by the Owner, unless agreed to in writing by the Owner.

2. Notify the Owner's testing agencies, Inspector of Record, and Contractor's testing agencies at least forty-eight (48) hours in advance of time when work that requires testing or inspecting will be performed.
3. Where testing or inspection services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each testing or inspection service.
4. Testing and inspecting requested by the Contractor and not required by the Contract Documents are the Contractor's responsibility.

C. Special Tests and Inspections: the Contractor will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction.
1. The testing agency will notify the Owner and the Contractor promptly of irregularities and deficiencies observed in the work during performance of its services.
2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to the Owner with a copy to the Contractor and to authorities having jurisdiction.
3. Testing agency will submit a final report of special tests and inspections at substantial completion, which includes a list of unresolved deficiencies.
4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Testing agency will retest and re-inspect corrected work.

D. Manufacturer's Field Services: where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

E. Re-testing/Re-inspecting: regardless of whether original tests or inspections were the Contractor's responsibility, provide quality-control services, including re-testing and re-inspecting, for construction that revised or replaced work that failed to comply with requirements established by the Contract Documents.

F. Testing Agency Responsibilities: cooperate with the Owner and the Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify the Owner and the Contractor promptly of irregularities or deficiencies observed in the work during performance of its services.
2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through the Contractor.
4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the work.
5. Do not perform any duties of the Contractor.

G. Associated Services: cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following.
1. Access to the work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at the project site.

H. Coordination: coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 REPAIR AND PROTECTION

A. General: on completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other sections of these specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are the Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014500

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Contract Documents, Drawings and Individual Specification Sections; apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
B. Related Sections:
    a. Section 011000: Summary of Work.

1.3 USE CHARGES

A. General: Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the Owner**,** the Design Professionals, occupants of the Project, testing agencies, and authorities having jurisdiction.
B. Sewer Service: Contractor is responsible for payment of sewer service use charges for sewer usage by all entities for construction operations.
C. Water Service: Contractor is responsible for payment of water service use charges for water used by all entities for construction operations.
D. Electric Power Service: Contractor is responsible for payment of electric power service use charges for electricity used by all entities for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel (if applicable).
B. Erosion and Sedimentation Control Plan: Show compliance with requirements of stormwater erosion and sediment control including Storm Water Pollution Prevention Plan (if applicable).
C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage; including delivery, handling, and storage provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.
    a. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
D. Dust-Control and HVAC-Control Plan: For all enclosed construction activities, submit coordination drawing and narrative that indicates the dust-control and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their

operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:

a. Locations of dust-control partitions at each phase of the work.
b. HVAC system isolation schematic drawing.
c. Location of proposed air filtration system discharge.
d. Other dust-control measures.
e. Waste management plan.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations and requirements of authority having jurisdiction for temporary electric service. Install service to comply with NFPA 70.
B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
C. Accessible Temporary Egress: Comply with applicable provisions in ADA-ABA Accessibility Guidelines and ANSI A117.1.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before the Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts**,** with 1-5/8-inch OD top rails.
B. Portable Chain-Link Fencing: Minimum 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide galvanized steel bases for supporting posts.
C. Wood Enclosure Fence: Plywood, 8 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.
D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mils minimum thickness, with flame-spread rating of 15 or less per ASTM E 84.
E. Dust Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
F. Insulation: Un-faced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Field Offices (when required), General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Owner's-Use Field Office (when required): Of sufficient size to accommodate needs of the Owner and construction personnel office activities and to accommodate project meetings. Keep office clean and orderly. Furnish and equip offices as follows:
    a. Furniture required for the Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
    b. Conference room of sufficient size to accommodate meetings of 2**0** individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot square tack and marker boards.
    c. Drinking water and private toilet.
    d. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
    e. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
    a. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
B. HVAC Equipment: Unless the Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
    a. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
    b. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
    c. Permanent HVAC System: If the Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
    a. Arrange with utility company, the Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
    a. Connect temporary sewers to municipal system as directed by authorities having jurisdiction. Obtain all required permits.
C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Obtain all required permits.
D. Water Service: Connect to the Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
    a. Toilets: Use of the Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
G. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
    a. Prior to commencing work, isolate the HVAC system in area where work is to be performed in accordance with approved coordination drawings.
        i. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
        ii. Maintain negative air pressure within work area using HEPA-equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
    b. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust containment devices.
    c. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
H. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
    a. Provide dehumidification systems to maintain the facilities RH when required to reduce substrate moisture levels to level required to allow installation or application of finishes per manufacturer’s requirements and recommendations.
I. Electric Power Service: Connect to the Owner's existing electric power service. Maintain equipment in a condition acceptable to the Owner. Obtain all required permits.

J. Electric Power Service: Provide electric power service and distribution system of sufficient size, number of phases, capacity, and power characteristics required for construction operations and testing of all installed equipment.
    a. Install electric power service underground, unless otherwise indicated.
    b. Connect temporary service to the Owner's existing power source, as directed by the Owner.
K. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
    a. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
    b. Install lighting for the Project identification sign.
L. Telephone Service: Provide temporary telephone service in Owner's-use facilities for use by all construction personnel. Install two telephone lines for each field office.
    a. Provide additional telephone lines for the following:
        i. Provide a dedicated telephone line for each facsimile machine in each field office.
    b. At each telephone, post a list of important telephone numbers.
        i. Police and fire departments.
        ii. Ambulance service.
        iii. Contractor's home office.
        iv. Design Professional's office.
        v. Testing Consultant's offices.
        vi. Owner's office.
        vii. Principal subcontractors' field and home offices.
    c. Provide superintendent with cellular telephone for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
    a. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
    b. Maintain support facilities until Substantial Completion inspection date is scheduled. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
B. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
    a. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
    b. Prepare subgrade and install sub-base and base for temporary roads and paved areas specified in Individual Specification Sections.

c. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
   a. Protect existing site improvements to remain including curbs, pavement, and utilities.
   b. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Provide temporary parking areas for construction personnel.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain the Project site, excavations, and construction free of water.
   a. Dispose of rainwater in a lawful manner that will not result in flooding the Project or adjoining properties nor endanger permanent Work or temporary facilities.
   b. Remove snow and ice as required to minimize accumulations.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
   a. Identification Signs: Provide Project identification signs as specified in the Contract Documents.
   b. Temporary Signs: Provide other signs as required to inform public and individuals seeking entrance to the Project.
      i. Provide temporary, directional signs for construction personnel and visitors.
   c. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
   a. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

I. Temporary Elevator Use: Use of elevators is not permitted.

J. Existing Elevator Use: Use of the Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
   a. Do not load elevators beyond their rated weight capacity.
   b. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

K. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

L. Existing Stair Usage: Use of the Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore stairs to condition existing before initial use.

a. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

M. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to authorities having jurisdiction.
   a. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
   b. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
   c. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
   d. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Site Enclosure Fence: Before construction operations begin furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
   a. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
   b. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to the Owner.

F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

I. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.
    a. Construct covered walkways using scaffold or shoring framing.
    b. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
    c. Paint and maintain appearance of walkway for duration of the Work.

J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
    a. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

K. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by the Owner from fumes and noise.
    a. Construct dustproof partitions with fire rated gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
    b. Where fire-resistance-rated temporary partitions are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
    c. Insulate partitions to control noise transmission to occupied areas.
    d. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
    e. Protect air-handling equipment.
    f. Provide walk-off mats at each entrance through temporary partition.

L. Fire Safety During Construction: Comply with all requirements identified herein as well as the more stringent requirements of the applicable codes (New York State Building and Fire Codes or New York City Building and Fire Codes).
    a. No smoking: Smoking shall be prohibited throughout the project/construction site. “No Smoking” signs shall be conspicuously posted at all entrances and throughout the site.
    b. The Contractor shall designate a Fire Prevention Program Superintendent/ Fire Safety Manager who shall be responsible for all fire safety efforts until completion and acceptance of the Work described in the Contract Documents that include but are not limited to the following:
        i. Prefire Plans. Develop in cooperation with the local Fire Chief and Fire Code Official. Any changes affecting the utilization of information contained in the plan shall result in notification to the local Fire Chief and Fire Code Official.
        ii. Training. Job site personnel shall be trained in fire safety practices and procedures and the proper use of fire protection equipment, including hand-held fire extinguishers, hose lines, fire alarm and sprinkler systems.
        iii. Fire Protection Devices. Fire protection and detection equipment shall be maintained and serviced.
        iv. Hot Work Operations. Welding, cutting, open torches, torch-applied roof system activities, and other hot work operations shall be conducted under a permit system. A fire watch and fire extinguishers shall be provided.

v. Impairment of Fire Protection Systems. Coordinate planned, emergency or accidental impairments of fire protection systems to include tagging of impaired systems and notification of Fire Department, Alarm Company, Building Owner/Operator, and Contractors.
vi. Temporary Covering of Fire Protection Devices. Coverings placed on or over fire protection devices for protection from damage shall be immediately removed upon the completion of the Work in the room or area in which the devices are installed.

c. Provide readily accessible telephone service for fire calls at a location or locations approved by the Owner.
   i. The Contractor shall pay all costs thereof until completion and acceptance of the Work or as otherwise directed by the Owner.
   ii. Provide/post the street address of the construction site and the emergency telephone number of the Fire Department adjacent to the telephone.

d. Provide or maintain a Temporary or Permanent Standpipe system for Fire Department use in accordance with the following:
   i. Buildings subject to the New York State Building Code: In buildings that require a standpipe system, such standpipe shall be installed when the progress of construction reaches a height of 40 feet.
   ii. Buildings subject to the New York City Building Code: In buildings that require a standpipe system, such standpipe shall be installed when the progress of construction reaches a height of 75 feet. The standpipe shall be equipped with an air pressurized alarm system.
   iii. Buildings being demolished: An existing standpipe system shall be maintained in operation on all floors, starting one floor directly below the floor being demolished. The existing standpipe can be converted to a dry standpipe if freezing conditions exist.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
   a. Protect porous materials from water damage.
   b. Protect stored and installed material from flowing or standing water.
   c. Keep porous and organic materials from coming into prolonged contact with concrete.
   d. Remove standing water from decks.
   e. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
   a. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
   b. Keep interior spaces reasonably clean and protected from water damage.
   c. Periodically collect and remove waste containing cellulose or other organic matter.

d. Discard or replace water-damaged material.
e. Do not install material that is wet.
f. Discard, replace or clean stored or installed material that begins to grow mold.
g. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
   a. Control moisture and humidity inside building by maintaining effective dry-in conditions.
   b. Use permanent HVAC system to control humidity.
   c. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
      i. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
      ii. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to the Design Professional.
      iii. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
B. Maintenance: Maintain facilities in good operating condition until removal.
   a. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   a. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves right to take possession of the Project identification signs.
   b. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant

materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

c. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 – Contract Closeout Requirements.

END OF SECTION 015000

SECTION 017100
MOBILIZATION & DE-MOBILIZATION

PART 1: GENERAL

1.1 Description

A. This section includes mobilization and demobilization to and from the jobsite.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 PREPARATION

A. Make arrangements to contact all public works departments prior to mobilizing to the job site and secure all necessary permits prior to performing work.

B. Notify Owner a minimum of forty-eight (48) hours in advance of mobilization to job site location.

C. Secure all required bonds and insurance and submit to the owner prior to mobilization.

D. The Contractor shall not mobilize until after the Owner has issued the Notice to Proceed.

3.2 MOBILIZATION

A. Move materials, equipment, and laborers as necessary to job site location with minimal disturbance. No separate payment will be made for subsequent mobilizations to the jobsite.

3.3 DE-MOBILIZATION

A. Remove all materials, equipment, laborers, solid waste and debris created by construction activities from job site location.

B. Maintain minimal disturbance to site upon departure.

END OF SECTION 017100

SECTION 017400
CLEANING AND WASTE MANAGEMENT

PART 1: GENERAL

1.1 Summary

A. Includes administrative and procedural requirements for Cleaning and Waste Management as described in the Contract Documents.

1.2 Description

A. Dispose of waste, debris, and rubbish resulting from the construction of the project.
B. If excess excavation spoils cannot be suitably disposed of on site, as directed by the Engineer, it shall be hauled away at the Contractor's expense.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 Requirements

A. Remove waste materials, debris, and rubbish from the site and legally dispose of at a public or private dumping area(s) off of site property. Use of private disposal facilities will require prior authorization by the Owner and provision of a signed release of liability by the facility Owner/Representative for the project Owner.
B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
    a. Do not burn or bury rubbish or waste materials on the project site.
    b. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
    c. Do not dispose of wastes into streams or waterways.

3.2 Progress Cleaning

A. Comply with regulations of authorities having jurisdiction and safety standards for cleaning.
B. Keep premises broom clean during progress of the Work.
C. During handling and installation, protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from soiling, damage, or deterioration until Substantial Completion.
D. Supervise construction activities to ensure that no part of construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
E. Clean exposed surfaces and protect as necessary to avoid damage and deterioration.

3.3 Final Cleaning

A. Immediately before Substantial Completion, thoroughly clean the area where The Work was performed.
B. Comply with individual manufacturer's cleaning instructions.
C. Property is to be completely cleaned and ready for Owner occupancy.
D. Final cleaning to occur following removal of any and all tools and equipment that my otherwise pose a potential damage to the completed project.

END OF SECTION 017400

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.
B. Operation and Maintenance Data.
C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Individual Product Sections: Specific requirements for operation and maintenance data.
B. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
    a. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
        i. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
    b. Advise Owner of pending insurance change-over requirements.
    c. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
    d. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
    e. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
    f. Deliver tools, spare parts, extra stock, and similar items.
    g. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
    h. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities, from the site, along with construction tools, mock-ups, and similar elements.
    i. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfilled requirements. The Engineer will prepare:
    a. The Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
    b. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
    c. Results of the completed inspection will form the basis of requirements for final acceptance.
C. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
    a. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations, where required.
    b. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and the list has been endorsed and dated by the Engineer.
    c. Submit consent of surety to final payment.

1.04 SUBMITTALS

A. Project Record Documents: Submit documents to Owner with claim for final Application for Payment.
B. Operation and Maintenance Data:
    a. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Owner will review draft and return one copy with comments, if needed.
    b. For equipment, or component parts of equipment put into service during construction and operated by the Owner, submit completed documents within fourteen (14) calendar days after acceptance.
    c. Submit one copy of completed documents fourteen (14) calendar days prior to final inspection. This copy will be reviewed and returned after final inspection, with Owner comments, if needed. Revise content of all document sets as required prior to final submission.
    d. Submit two sets of revised final documents in final form within fourteen (14) calendar days after final inspection.
C. Warranties and Bonds:
    a. For equipment or component parts of equipment put into service during construction with the Owner’s permission, submit documents within fourteen (14) calendar days after acceptance.
    b. Make other submittals within fourteen (14) calendar days after Date of Substantial Completion and prior to final Application for Payment.
    c. For items of Work for which acceptance is delayed beyond the Date of Substantial Completion, submit within fourteen (14) calendar days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
    a. Drawings.
    b. Specifications.
    c. Addenda.
    d. Change Orders and other modifications to the Contract.
    e. Reviewed shop drawings, product data, and samples.
    f. Manufacturer's instruction for assembly, installation, and adjusting.
B. Ensure entries are complete and accurate, enabling future reference by the Owner.
C. Store record documents separate from documents used for construction.
D. Record information concurrent with construction progress.
E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
    a. Changes made by Addenda, change order, substitution, and modifications.
F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
    a. Measured depths of foundations in relation to finish first floor datum.
    b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
    c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
    d. Field changes of dimension and detail.
    e. Details not on original Contract drawings.

3.2 OPERATION AND MAINTENANCE DATA

A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

a. Product data, with catalog number, size, composition, and color and texture designations.
b. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

3.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   a. Description of unit or system, and component parts.
   b. Identify function, normal operating characteristics, and limiting conditions.
   c. Include performance curves, with engineering data and tests.
   d. Complete nomenclature and model number of replaceable parts.
B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
D. Provide servicing and lubrication schedule, and list of lubricants required.
E. Include manufacturer's printed operation and maintenance instructions.
F. Include sequence of operation by controls' manufacturer.
G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
H. Additional Requirements: As specified in individual product specification sections.

3.5 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
B. Prepare data in the form of an instructional manual.
C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
F. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   a. Part 1: Directory, listing names, addresses, and telephone numbers of Owner, Contractor, Subcontractors, and major equipment suppliers.

b. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    i. Significant design criteria.
    ii. List of equipment.
    iii. Parts list for each component.
    iv. Operating instructions.
    v. Maintenance instructions for equipment and systems.
    vi. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
c. Part 3: Project documents and certificates, including the following:
    i. Shop drawings and product data.

3.6 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within fourteen (14) calendar days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
B. Verify that documents are in proper form, contain full information, and are notarized.
C. Co-execute submittals when required.
D. Retain warranties and bonds until time specified for submittal.
E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION 017800

DIVISION 02
EXISTING CONDITIONS

SECTION 022100
SURVEY CONSTRUCTION STAKING

PART 1: GENERAL

1.1 Description

A. The work to be done under this section shall be by an agent of the Owner and shall consist of furnishing and setting construction stakes and marks by the Owner to establish the lines and grades required for completion of the work as shown on the plans and specified in the project specifications.
B. The Contractor shall provide or procure surveying services as necessary for the successful completion of the work for all work required beyond that initially provided by the Owner.
C. The Contractor is responsible for all day-to-day grade-setting (using Owner provided survey and grade control) and field measurement needed to build all proposed developments.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

A. Construction staking shall be performed under the direction of a licensed land surveyor or registered professional engineer familiar with construction surveying and staking.
B. Construction staking shall be performed, as necessary, to control the work. Construction stakes and marks shall be furnished and set with accuracy adequate to assure that the completed work conforms to the lines, grades, and sections shown on the plans.
C. The Owner will provide the following construction staking:
    1. Benchmark and reference control.
    2. Clearing and Grubbing limits including all horizontal transition points. Limit to be marked at fifty foot intervals along straight runs unless otherwise requested by the Contractor in writing prior to mobilization for marking.
    3. Road centerline horizontal and vertical control at fifty foot intervals for straight runs, curve (vertical and horizontal) beginning; ending; and radii center (for horizontal only), and super-elevation transitions in compliance with Caltrans requirements.
    4. All buried utility beginning, transition (horizontal/vertical), and ending elevation and locations. Note: if buried utility is consistent in alignment w/ roadway centerline alignment then such will be provided as a cross-section in the civil plan set and site staking will reflect the plan set in reference.
    5. All overhead utility pole, guy, and overhead-to-underground transition.
    6. Cut and fill hinge and toe locations in fifty-foot intervals for straight runs and all transitions of grade and direction.
    7. All earth retaining system alignments based on face batter at leveling course and leveling course and finish elevations. Alignment to include all horizontal transitions.
    8. Building batter based on one major wall (minimum) at beginning and end, and finish floor elevation (first story).
D. Additional construction staking requested by the Contractor, not specifically itemized under standard Owner provided staking above will be at the Contractor's expense. Owner will provide original staking of the above items at no charge to the Contractor. Subsequent or

replacement staking of the items will be at the Contractor's expense and be at no additional cost to the Owner.

E. The Contractor shall provide a construction staking request in writing to the Owner and Engineer no less than seventy-two (72) hours prior to the desired time for construction staking to be performed.

F. Construction stakes shall be removed from the site by the Contractor when no longer needed. Removal and disposal of construction staking materials is the sole responsibility of the Contractor.

G. In the event the Contractor's operations destroy any of the Owner's survey control points, the Contractor shall either replace such control points at his expense, subject to verification by the Engineer, or request the Owner to replace the destroyed control points. If requested to replace the control points, the Owner will do so within fourteen (14) calendar days. The cost of any such verification or replacement of the Owner's control surveys will be the sole responsibility of the Contractor with no additional cost to the Owner. The Contractor will not be allowed any adjustment in contract time for such verification or replacement of survey control points.

H. The Contractor must preserve all Geographic Reference Stations, section corners, and all other legal property monuments of any kind during all construction and related activities. It is the Contractor's responsibility to become familiar with the survey control and monumentation of the site and surrounding property prior to conducting activities on the site that may potentially jeopardize such facilities.

I. The Contractor shall give written notice to the Owner and Engineer at least five (5) working days in advance of any need to disturb or destroy any of the monuments of the site. Contractor must receive approval for such destruction or disturbance from the Owner and Engineer prior to conducting the work.

J. Only a Professional Land Surveyor registered in the State of California will be permitted to perform surveying to reset or replace destroyed monuments. The Professional Land Surveyor shall follow all rules, regulations, provisions, and laws of the State of California, as applicable for such work.

K. The cost of replacement of monuments destroyed or disturbed by the Contractor will be the sole responsibility of the Contractor and be at no additional cost to the Owner.

PART 4: MEASUREMENT

A. The Owner will provide construction staking including benchmarks and layout. No payment will be made to the Contractor for these items.

END SECTION 022100

SECTION 024000
DEMOLITION

PART 1 GENERAL

1.1 Description

A. Includes demolition of existing developments, facilities, and improvements as required to accommodate new construction. Also includes supplementary clearing and grubbing requirements.

PART 2 PRODUCTS (not used)

PART 3 EXECUTION

3.1 Infrastructure Removal

A. Existing infrastructure, developments, and site improvements scheduled for removal must be addressed in strict compliance with applicable laws and regulations.

B. Contractor to secure authorized facility(ies) for disposal of generated rubble and demolition debris. Facility authorization must be submitted to the Owner and approved for use prior to beginning work.

C. Dust and other airborne particles generated by demolition activities must be controlled and reduced to acceptable air quality levels. Airborne particle retardant practices in strict accordance with erosion and pollution requirements are to be administered.

D. Noise pollution is to be minimized during demolition activities. Excessive noise generating activities are to be scheduled between 0900 and 1600 hours, Monday through Friday to reduce the potential impact to adjacent property owners and occupants.

3.2 Protection

A. Locate, identify, and protect existing facilities (scheduled to remain) from damage.

B. Identify and protect trees, plant growth, and features designated to remain as final landscaping.

C. Protect benchmarks from damage and displacement.

3.2 Clearing

A. Clear only those areas required for access to site and execution of Work as depicted in construction plans and described in scope of work.

3.3 Removal

A. Remove paving, brush, trees, and other debris as required and dispose of off-site in strict accordance with applicable laws and regulations and only at facilities approved and authorized for such disposal.

END OF SECTION 024000

SECTION 024200
DEWATERING

PART 1: GENERAL

1.1 SUMMARY
- A. This section includes construction dewatering.

1.2 PERFORMANCE REQUIREMENTS
- A. Dewatering Performance: design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control flow into excavations and permit construction to proceed on dry, stable sub-grades.

1.3 SUBMITTALS
- A. Shop Drawings for Information: for dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.
  1. Include shop drawings signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 QUALITY ASSURANCE
- A. Regulatory Requirements: comply with water disposal requirements of authorities having jurisdiction.

PART 2: PRODUCTS (not used)

PART 3: EXECUTION

3.1 PREPARATION
- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
  1. Include shop drawings signed and sealed by the qualified professional engineer responsible for their preparation.
  2. Protect sub-grades and foundation soils from softening and damage by rain or water accumulation.

3.2 INSTALLATION
- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
- B. Before excavating below groundwater level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.
- C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry sub-

grades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of the foundations, drains, sewers, and other excavations.

1. Do not permit open sump pumping that leads to loss of fines, soil piping, sub-grade softening, or slope instability.

D. Reduce hydrostatic head in water-bearing strata below sub-grade elevations of foundations, drains, sewers, and other excavations.

1. Maintain piezometric water level a minimum of twenty-four (24) inches below surface of excavation.

E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

F. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the Owner.

1. Remove dewatering system from project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of thirty-six (36) inches below overlying construction

G. Damages: promptly repair damages to adjacent facilities caused by dewatering operations.

END OF SECTION 024200

DIVISION 03
CONCRETE

SECTION 032000
CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:
1. Drawings and general provisions of the Subcontract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes: Concrete reinforcement and accessories.

C. Related Sections:
1. Division 01 Section "General Requirements."
2. Division 01 Section "Special Procedures."

1.2 REFERENCES

A. General:
1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.

B. ACI – American Concrete Institute:
1. ACI 117 Tolerances for Concrete Construction
2. ACI 301 Specifications for Structural Concrete
3. ACI 315 Standard Practice for Detailing Reinforced Concrete Structures

C. ASTM International:
1. ASTM A185 / A185M Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
2. ASTM A615 / A615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
3. ASTM A706 / A706M Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
4. ASTM A970 / A970M Standard Specification for Headed Steel Bars for Concrete Reinforcement

D. CRSI - Manual of Standard Practice.

E. ICBO - Evaluation Reports.

1.3 SUBMITTALS

A. Submit under provisions of Division 01 Section "General Requirements."

B. Shop Drawings: Prepare placing drawings in accordance with ACI 315. Show size, shape and location of bars and wire fabric in structure. Show splice locations and lengths. Where details are not shown, conform to standards of practice indicated in ACI 315 and submit for approval.
   1. Bill reinforcing bars for walls on elevations. Bill reinforcing bars for slabs on plans. Plans and elevations need not be true views. When more than one wall or slab are identical, only one such wall or slab is required. Take sections to clarify the arrangement of reinforcement. Identify, but do not bill bars on sections.
   2. Unless the location of reinforcing is clear, give dimensions to some structural feature that will be readily distinguishable at time bars are placed.
   3. Make placing drawings complete, including the location of support bars and chairs, without reference to the design drawings.

C. Submit data required to evaluate proposed mechanical splices.

D. Submit manufacturer's certified mill test reports on each heat of reinforcing steel delivered, showing physical and chemical analysis before placing reinforcement.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of ACI 301 CRSI's "Manual of Standard Practice", except where more stringent requirements are shown or specified.

B. Requirements of Regulatory Agencies: Proprietary products, including bar couplers, shall have an active ICBO Evaluation Report.

C. Material Quality Assurance: Mill test reports including chemical analysis, tensile properties and bend test shall be examined for all reinforcing. Conform to one of the following:

D. Maintain positive identification of reinforcing by heat number. Provide certified mill test reports to Testing Laboratory.

E. Where positive identification cannot be made and procedures are not deemed adequate to ensure compliance, Testing Laboratory will randomly sample and make one tensile and one bend test from each 2-1/2 tons or fraction thereof of each size of reinforcement. Subcontractor will bear the cost of testing.

PART 2 - PRODUCTS

2.1 REINFORCING MATERIALS

A. Bar Reinforcement: ASTM A615, Grade 60, deformed billet bars.
   1. ASTM A706, where noted on Drawings.
   2. Recycled content shall be a minimum of 75 percent recycled post consumer steel.

B. Headed Bar Reinforcement: ASTM A970.

C. Spirals: ASTM A82.

D. Welded Wire Fabric: ASTM A185.

E. Threaded Bars: Grade 75, manufactured by DYWIDAY Systems International, Williams Form Engineering Corp. or equal substituted per Division 1.

F. Smooth Dowels, ASTM A615, Grade 40 or 60, smooth; sawcut or grind one end to remove offsets; shop paint with iron oxide zinc chromate primer.

G. Welded Deformed Bar Anchors: ASTM A-108 f_y = 70,000 psi, flux-filled deformed bar anchors welded to structural steel as shown; Nelson D2L, or equal substituted per Division 1.

H. Mechanical Bar Couplers: Provide mechanical couplers with a current ICC evaluation report. Coupler to develop 160% percent of specified minimum yield strength of spliced reinforcement. Subject to compliance with requirements provide one of the following, or approved equal:
   1. Barteck, Dextra Inc.
   2. Lenton Taper Threaded Connection, Erico Inc.
   3. Bar Lock, Dayton Superior Inc.

2.2 ACCESSORIES

A. Tie Wire: Minimum 16-gage black annealed wire.

B. Bar Supports:
   1. At surfaces not exposed to view in completed structure: Precast concrete bar supports with two 16 ga. embedded wires or CRSI Class 2 wire supports.
   2. Supports placed against ground or on top of vapor barrier: Precast concrete blocks not less than 3 inches square (1935 mm^2) with two 16 ga. embedded wires.
   3. At Architectural Concrete and surfaces exposed to weather: CRSI Class 2 stainless steel or CRSI Class 1 plastic protected.
   4. Where support is no closer to concrete surface than 1/2 inch (13 mm): CRSI Class 3 wire supports.

2.3 FABRICATION

A. Fabricate reinforcement in accordance with ACI 315 where specific details are not shown.

PART 3 - EXECUTION

3.1 PLACEMENT

A. Surface Condition of Reinforcement: Before placing concrete, clean reinforcement of loose scale, dirt, grease and other substances which would impair bond with concrete.

B. Place reinforcement in accordance with the Drawings and the CRSI Manual.
   1. Steel bars shall be of size and length indicated, accurately bent or formed to shapes detailed or scheduled by experienced shops by methods that will not injure the materials. Reinforcing bars shall be shop fabricated to lengths and bends shown on the drawings. Fabrication tolerance shall be in accordance with the requirements of ACI 315.
   2. Reinforcing bars shall be as long as possible with a minimum number of joints.
   3. Steel reinforcement shall not be bent or straightened in a manner that will injure the material or the embedding concrete. Bars with kinks or bends not shown on the Drawings shall not be used. Heating of reinforcement for bending will not be permitted.
   4. Reinforcement shall be tagged with suitable identification to facilitate sorting and placing.

C. Place reinforcing bars accurately as to spacing and clearance and securely tied at intersections and supports with wire and in such a manner as will preclude displacement during pouring of concrete. Placing tolerances shall be in conformance with the requirements of ACI 117.

D. Place and secure reinforcement to maintain the proper distance and clearance between parallel bars and from the forms. Provide vertical steel with metal spreaders to maintain steel properly centered in the forms. Horizontal reinforcement shall be supported at proper height on concrete pads, chairs or transverse steel bars.

E. After placing, maintain bars in a clean condition until completely embedded in concrete.

F. Bars shall not be spaced closer than 1-1/2 diameters of the largest of two adjacent bars, 1-1/2 times the maximum aggregate size, nor one inch, except at bar laps. Where reinforcement in members is placed in two layers, the clear distance between layers shall be not less than one inch (25 mm) or more than 1-1/2 inches (13 mm) unless otherwise noted on the drawings. The bars in the upper layer shall be placed directly above those in the bottom layer unless otherwise detailed.

G. Coverage of bars shall be as shown and scheduled. Conform to ACI 301 where not indicated.

H. Where obstruction prevents the intended placement of reinforcement, provide additional reinforcement as directed by the Owner around the obstruction.

I. Splice bars as indicated by lapping and securely wiring together. Splices at locations other than those indicated are subject to the approval of the Owner. Splices of reinforcement shall not be made at the point of maximum stress. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear. Bars shall be spread the minimum distance specified. Stagger splices of adjacent bars where possible.

J. Reinforcing bars shall not have welded joints.

K. Mechanical Bar Couplers: Install in accordance with applicable ICC evaluation report. Maintain clearance and coverage at coupler. Stagger couplers wherever practical.

3.2 FIELD INSPECTION

A. Owner's Inspector will:
   1. Review Quality Assurance procedures for maintaining identification of steel. Collect certificates of compliance and test reports for reinforcing steel.
   2. Special Inspect placement of reinforcement for conformance with the Contract Documents and as required by CBC Chapter 17.
   3. Special Inspect installation of mechanical couplers in accordance with requirements of applicable ICC evaluation report.
   4. Special Inspect shop and field welding as required by CBC Chapter 17

END OF SECTION 032000

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. This section specifies Cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.2 SUBMITTALS

A. Product Data: for each type of product indicated.
B. Design Mixtures: for each concrete mixture.
C. Shop Drawings: For steel reinforcement.
D. Material test reports.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: a firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
   a. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities".
B. ACI Publications: comply with the following unless modified by requirements in the Contract Documents:
   a. ACI 301: "Specification for Structural Concrete," Sections 1 through 5.
   b. ACI 117: "Specifications for Tolerances for Concrete Construction and Materials".
C. Pre-installation conference: conduct a conference at the project site.

1.4 MEASUREMENT

A. Measurement and payment is per bid schedule Section 004100.

1.5 RELATED SECTIONS

A. Divisions 31, 32, and 33.

1.6 REFERENCES

A. ACI 304: Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
B. ASTM C94: Ready-Mixed Concrete.

PART 2: PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-formed finished concrete: form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize the number of joints.
B. Rough-formed finished concrete: plywood, lumber, metal, or other approved materials. Provide lumber dressed on at least two edges and one side for tight fit.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M. Grade 60 (grade 420), deformed.
B. Galvanized-steel welded wire reinforcement: ASTM A 185, plain, fabricated from galvanized steel wire into flat sheets.
C. Bar supports: bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or pre-cast concrete according to CRSI's "Manual of Standard Practice".

2.3 CONCRETE MATERIALS

A. Cementitious Material: use the following cementitious materials, of the same type, brand, and source, throughout the project:
   a. Portland Cement: ASTM C150, Type III
B. Normal-weight aggregates: ASTM C33, graded, ¾ inch (19 mm) nominal maximum coarse-aggregate size.
   a. Fine and Coarse Aggregates: free of materials with deleterious reactivity to alkali in cement.
C. Water: Clean (not detrimental to concrete). ASTM C94/C94M and potable.

2.4 ADMIXTURES

A. Air Entrainment: ASTM C260.
B. Chemical Admixtures: provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
   a. Water reducing admixture: ASTM C494C494M, Type A.
   b. Retarding admixture: ASTM C494/C494M, Type B.
   c. Water reducing and retarding admixture: ASTM C494/C494M, Type D.
   d. High range, water reducing admixture: ASTM C494/C494M, Type F.
   e. High range, water reducing and retarding admixture: ASTM C494/C494M, Type G.
   f. Plasticizing and retarding admixture: ASTM C1017/C1017M, Type II.

2.5 VAPOR RETARDERS

A. Plastic vapor retarder: ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397 not

less than 6 mil thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

B. Joint seams to overlap a minimum of twelve inches and be secured in place with manufacturer recommended and Engineer approved joint tape.

2.6 CURING MATERIALS

A. Evaporation retarder: waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz/sq. yd. (305 g/sq. m) when dry.

C. Moisture-retaining cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: potable.

E. Clear, waterborne, membrane-forming curing compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

F. Clear, waterborne, membrane-forming curing compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

G. Clear, solvent-borne, membrane-forming curing and sealing compound: ASTM C 1315, Type 1, Class A.

H. Clear, waterborne, membrane-forming curing and sealing compound: ASTM C 1315, Type 1, Class A.

2.7 RELATED MATERIALS

A. Expansion and isolation joint filler strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

2.8 CONCRETE MIXTURES

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Provide concrete to the following criteria:
   a. Minimum compressive strength: 3,000 psi at 28 days.
   b. Maximum water-cementitious materials ratio: 0.45.
   c. Slump limit: 4 inches (100 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm).
   d. Air content: 6 percent, plus or minus 1.5 percent at point of delivery for ¾ inch (19 mm) nominal maximum aggregate size.

2.9 CONCRETE MIXING

A. Ready mix concrete: measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.

a. When air temperature is between 85 and 90 degrees F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

2.10 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "manual of Standard Practice".

PART 3: EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork according to ACI 301 to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 VAPOR RETARDERS

A. Plastic vapor retarders: place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
   a. Lap joints twelve inches minimum and seal with manufacturer's recommended tape.
   b. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.4 STEEL REINFORCEMENT

A. General: comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

3.5 JOINTS

A. General: construct joints true to line with faces perpendicular to surface plane of concrete.
B. Construction joints: install so strength and appearance of concrete are not impaired, at locations indicated or as approved by the Engineer.
C. Contraction joints in slabs-on-grade: form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
   a. Grooved joints: form contraction joints after initial floating by grooving and

finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

b. Sawed joints: form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8 inch (3.2 mm) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation joints in slabs-on-grade: after removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

3.6 EXAMINATION

A. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed and positioned securely and will not cause hardship in placing concrete.

3.7 PREPARATION

A. Thoroughly compact concrete bearing area to a minimum depth of 6 inches. Compaction shall be a minimum of ninety-five percent (95%) relative compaction beneath all foundations.

3.7 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

a. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

C. Cold-weather placement: comply with ACI 306.1.

D. Hot-weather placement: comply with ACI 301.

3.8 FINISHING FORMED SURFACES

A. Rough-formed finish: as cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

a. Apply to concrete surfaces.

B. Smooth-formed finish: as cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

a. Apply to concrete surfaces exposed to public view.

C. Related unformed surfaces: at tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

A. General: comply with ACI 302.1R recommendations for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float finish: consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Re-straighten, cut down high spots, and fill low spots. Repeat float passes and re-straightening until surface is left with a uniform, smooth, granular texture.
   a. Apply a trowel finish to surfaces indicated.
   b. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10 foot (3.05 m) long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed ¼ inch (6 mm).

C. Trowel finish: after applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and re-straighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

D. Trowel and fine-broom finish: apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.
   a. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

E. Broom finish: apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

3.10 CONCRETE PROTECTING AND CURING

A. General: protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation retarder: apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
   a. Moisture curing: keep surfaces continuously moist for not less than seven days.
   b. Moisture-retaining-cover curing: cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
   c. Curing compound: apply uniformly in continuous operation by power spray or heavy rainfall within three hours after initial application maintain continuity of

coating and repair damage during curing period.

i. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

d. Curing and sealing compound: apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.11 FIELD QUALITY CONTROL

A. Testing and inspection: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

a. Testing services: tests shall be performed according to ACI 301.

END OF SECTION 033000

DIVISION 26
ELECTRICAL

SECTION 263213
EMERGENCY GENERATOR SYSTEM

PART 1 GENERAL

1.1 WORK INCLUDED

A. Work includes furnishing, installing, adjusting, testing, documenting, and starting up generator equipment in accordance with these specifications, the accompanying Plans, and the directions of the Engineer.

1. Supply all equipment contained herein.
2. Coordinate with the fuel / storage tank supplier to ensure that all connections and interfaces between the two systems are compatible. **Contact: Casey Mitchell, Sequoia Gas, 707 822 4851**
3. **Contractor is required to pay all costs associated with installation requirements including purchase of two (2) 1,000 gallon tanks for Trinidad Harbor location.**

1.2 REFERENCES

A. Except as otherwise specified, the applicable rules, regulations, and standards of the following organizations shall be considered as minimum requirements:

1. Underwriters Laboratories (UL).
2. California Electrical Code (CEC).
3. National Fire Protection Association (NFPA).
4. Institute of Electrical and Electronics Engineers (IEEE).
5. The National Electrical Manufacturer's Association (NEMA).
6. American National Standards Institute (ANSI).
7. Internal Combustion Engine Institute.
8. American Society of Mechanical Engineers (ASME).

1.3 LOCATION

A. The supplier of the generator-set and the manufacturers of the component parts shall have representatives located **within 50 miles** of the installation that can provide service, inspection, spare parts, and emergency service.

1.4 SUBMITTALS

A. Product Data: For each engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator sets and other components specified.
2. Wiring Diagrams: Power, signal, and control wiring.

C. Quality Control Submittals:
1. Operation and Maintenance Manual.
2. Certification, copies of analyses or test reports demonstrating appropriate vibration analysis and design in all modes.
3. Factory Test Report.
4. Manufacturer's Certificate of Performance.
5. Manufacturer's Certificate of Proper Installation.

1.5 QUALITY ASSURANCE

A. Components shall be UL listed where UL listing categories are available.

B. Generator set shall comply with the most current EPA and local air quality board emission requirements.

1. Provide 3-way catalyst and/or fuel-to-air ratio controller as necessary to comply with local emission requirements. No allowance will be made for omissions based on incorrect assumptions regarding emission control.

PART 2 PRODUCTS

2.1 STANDARD DESIGN

A. The design of the generator sets shall be the standard of the manufacturer, except as noted. Each engine generator unit shall be factory assembled on a common steel base.

2.2 MANUFACTURERS

A. Materials and equipment specified in this section shall be COMMERCIAL products of:

1. Briggs and Stratton
2. Cummins
3. Kohler
4. Or Equal.

2.3 SEISMIC LOADING DESIGN PROVISIONS

A. The engine generator sets and their appurtenances and supports shall be designed to resist lateral forces in accordance with the most current adopted California Building Code (CBC).

2.4 PERFORMANCE

A. The generator set shall be capable of continuous operation at rated conditions for the duration of any interruption or outage of the normal power supply. The generator set shall be rated as follows:

B. <u>TRIBAL OPERATIONS CENTER</u>

1. Kilowatts: 60 kW.
2. Voltage: 120/240 V.
3. Power Factor: 1.0.
4. Phase: 1.
5. Frequency: 60 Hz.
6. Elevation: 500 Ft.
7. Ambient Temperature: 104qF.
8. Automated Transfer Switch 400 amp service
9. Warranty: 5 year (Parts, Labor, and Travel)

C. <u>EMERGENCY OPERATIONS CENTER</u>

1. Kilowatts: 60 kW.
2. Voltage: 120/240 V.
3. Power Factor: 1.0.
4. Phase: 1.
5. Frequency: 60 Hz.
6. Elevation: 500 Ft.
7. Ambient Temperature: 104qF.
8. Automated Transfer Switch 400 amp service

9. Warranty: 5 year (Parts, Labor, and Travel)

D. <u>TRINIDAD HARBOR</u>

Restaurant

1. Kilowatts: 75 KW.
2. Voltage: 240/120 VAC
3. Power Factor: 0.8
4. Phase: 3 Phase, 4 Wire (Red Leg Delta)
5. Frequency: 60 Hz
6. Elevation: 500 ft
7. Ambient Temperature: 90 Degrees Fahrenheit.
8. Automated Transfer Switch 400 amp service
9. Warranty: 3 year (Parts, Labor, and Travel)

Pier & Boat Launch

1. Kilowatts: 100 KW.
2. Voltage: 240/120 VAC
3. Power Factor: 0.8
4. Phase: 3 Phase, 4 Wire (Red Leg Delta)
5. Frequency: 60 Hz
6. Elevation: 500 ft
7. Ambient Temperature: 90 Degrees Fahrenheit.
8. Connect to existing manual transfer switch Labeled Pier
9. Connect to existing manual transfer switch Boat Launch
10. Warranty: 3 year (Parts, Labor, and Travel)

2.5 ENGINE

A. General Design: Provide adequate strength of all parts for the specified duty. Mount the complete engine generator unit on a common steel subbase, completely piped and wired.

B. Engine:

1. Four-cycle: Propane.
2. Suitable for a standby output of REQUIRED kW when driving a synchronous generator at a speed not exceeding 1,800 rpm.
3. Natural aspiration.

C. Starting System:

1. Automatic with a dc electric starting system.
2. Battery: Heavy-duty, lead-acid storage battery, capable of providing three (3) 15 second cranking cycles without recharging.
3. Battery frame: Acid resistant.
4. Battery Charger: Current-limiting float-type with overload protection, full-wave rectifiers, voltage surge protective device, dc ammeter and voltmeter with plus or minus 2 percent accuracy and fused 120 VAC input.

D. Governor: Engine speed shall be controlled by an isochronous governor capable of regulating the no-load to full-load frequency to a 5 percent maximum and capable of 0.5 percent steady-state frequency regulation. Governor adjustment shall be by means of an external vernier scale.

E. Air Intake System: Replaceable element dry type air cleaners with filter service indicators.

F. Cooling System:

1. Sized to meet system cooling requirements with 104qF ambient air.
2. Jacket Water Pump: Engine driven.
3. Radiator Fan: Engine driven.
4. Radiator Fan Guard: OSHA approved.
5. Radiator:
   a. Engine-mounted with jacket water pump, fan assembly, and fan guard.
6. Thermostat: Set at coolant temperature recommended by manufacturer.
7. High Temperature Device: Shutdown engine through engine controls at coolant temperature recommended by manufacturer.
8. Jacket Water Heaters:
   a. Maintain coolant temperature recommended by manufacturer at all times the engine is idle.
   b. Thermostatically controlled, 120 VAC, 60 Hz.
9. Coolant: Mixture of water and permanent type antifreeze with corrosion inhibitor as recommended by engineer manufacturer.

G. Lubricating System:

1. Full-pressure type.
2. Low Pressure Device: Shut down the engine through the engine controls on low oil pressure.
3. Oil Filter: Replaceable element.
4. Oil Level Stick: Bayonet type.
5. Oil Cooler: Water-cooled heat exchanger utilizing jacket water.
6. Provide a valved oil drain extension.

H. Exhaust System:
   1. Exhaust Muffler: Critical grade.
   2. System Components, Including Piping: Sized such that back pressure does not exceed the maximum allowable for the engine used.
   3. Exhaust Pipe: 10-gauge carbon steel, minimum.
   4. Exhaust Pipe Fittings: Standard weight flanged or butt welding type.
   5. Guards: Provide in accordance with safety requirements to protect personnel from accidental contact from the exhaust manifolds, exhaust pipe, etc.

2.6 GENERATOR

A. Single-bearing, synchronous type, suitable for direct connection to the engine with the following electrical characteristics:

   1. **As shown in section 2.4**

B. Suitable for use in a solidly grounded system.

C. Suitable coil bracing for a bolted line-to-neutral fault at the generator terminals.

D. Output Wave Form:

   1. Not to depart from a true sine wave by more than 10 percent.
   2. Telephone Influence Factor: Not to exceed 50.

E. Steady-State Voltage Regulation: Not to exceed plus or minus 2 percent.

F. Transient Voltage Dip: Not to exceed 30 percent of rated voltage with sudden or multiple applications of sequenced, starting kVA load.

G. Sustained Fault Current: Capable of sustaining an output current of at least 110 percent of the generator breaker short time setting for the breaker total clearing time.

H. Provide an end mounted connection box for the generator that will allow conduit entry from the sides or bottom.

I. Provide generator space heater and control circuit for 120 VAC, 60-Hz supply to prevent condensation in the generator.

2.7 UNIT MOUNTING BASE

A. Mount engine and generator on a common steel base sufficiently rigid to prevent deflection between points of support.

B. Provide isolation pads between the generator support and the base.

2.8 FACTORY PAINT

A. Provide a factory-applied primer and two finish coats of the manufacturer's standard, heat-resistant engine paint for the complete generator set, including the control panel.

2.9 GENERATOR SET ENCLOSURE

A. House entire generator set assembly including all control equipment in outdoor weather proof enclosure.

B. Constructed of sheet steel with removable panels and hinged doors.

C. Provide hinged doors where necessary for service with 3-point flush handles of the locking type.

D. Key all doors alike.

E. Provide screened intake louvers.

F. Chemically treated with a coating of zinc phosphate followed by a primer coat, then two coats of factory-applied enamel.

G. Provide touch-up paint for repair of any damaged surfaces following installation.

2.10 CONTROL PANEL

A. Provide a generator-set control panel with the following:

1. NEMA 1 enclosure, vibration isolated, dead front, 14-gauge steel.
2. Stranded control wiring brought to master terminal blocks.

B. Provide indication for each of the following conditions:
1. Engine Running.
2. Engine Not in Auto.
3. Low or High Battery Voltage.
4. Provide a contact to close to indicate the engine is running and a contact to close to indicate Battery Voltage HIGH/LOW

C. Faults:

1. Provide fault-indicating lights to indicate each of the following alarms:
   a. Over crank.
   b. Overspeed.
   c. Low oil pressure.

d. High engine temperature.
e. Fail to start.

2. Provide a common alarm contact which closes under any of the above alarm conditions.

D. Operator Controls:

1. Manual START/STOP switch.
2. Three-position selector switch for OFF-AUTO-MANUAL selection.
3. RESET pushbutton.
4. SILENCE pushbutton.
5. Manual control for voltage and speed adjustment.
6. Audible alarm.
7. Indicator test pushbutton.

E. Metering:

1. Voltmeter, 2 percent minimum accuracy.
2. Ammeter, 2 percent minimum accuracy.
3. Current transformers and potential transformers as required.
4. Frequency meter.
5. Elapsed time meter. F.

Description of Operation:

1. Prevent starting and cause shutdown in MANUAL or AUTO modes for the following:
   a. Overcrank.
   b. Overspeed.
   c. Low oil pressure.
   d. High engine temperature.
   e. Fail to start.
2. The engine shall be shutdown under any of the above conditions, and may not be restarted until the system is manually reset.

3. Audible Alarm:
   a. Activate whenever an alarm occurs.

4. RESET Pushbutton:
   a. Turn off alarm light and open the common alarm contact if the condition is no longer present.

2.11 AUTOMATIC TRANSFER SWITCH

A. Features:

1. Provide automatic load transfer switches with the continuous current capacity as shown on the Plans.
2. Provide switch control with adjustable 0 to 2 minute timer to permit a delay on transfer after power failure. Provide a 0-30 minute timer to permit a delay on retransfer following restoration of normal power.
3. Provide starting contacts to start an engine-generator set should the voltage of the normal source drop below an adjustable setting of 75% to 98% of pickup value on any phase, after an adjustable time delay of 0 to 6 seconds.
4. Transfer to emergency when engine-generator rated frequency and voltage are reached. Emergency voltage pickup shall be adjustable 85%-100% of nominal and frequency pickup shall be adjustable 90%-100% of nominal.
5. After restoration of normal power on all phases to 85%-100% of rated voltage, for an adjustable time delay retransfer to normal power. If the emergency power source should fail during the time delay period, the switch shall automatically return to the normal source. After retransfer to normal the engine-generator will operate at no load for 0 to 10 minutes adjustable.
6. Provide two spare auxiliary contacts, one closed on normal and the other closed on emergency. In addition, supply one set of relay contacts to open upon loss of normal power supply. Provide contacts rated 5-amps, 120 VAC.
7. Provide voltage sensing relays and all adjustable timers capable of being adjusted, while energized. Provide all control wire terminals with ring or locking spade terminals. Identify all wiring by tubular sleeve-type markers.
8. Supply transfer switches which are mechanically held and electrically operated with operating current from the source to which load is being transferred. Supply switches constructed to prevent a neutral position and electrically and mechanically interlocked to prevent connection of the load simultaneously to both sources.
9. Include a 4-position selector switch TEST/AUTO/OFF/START for transfer/engine- generator operation.
10. Provide the following indicating lights:
    a. Switch in normal position (green).
    b. Switch in emergency position (red).
    c. Normal source available (white).
    d. Emergency source available (white).
11. Provide transfer switch suitable for connection to normal and standby sources as shown on the Plans.
12. Supply transfer switches suitable for use with 75qC wire at full CEC 75qC ampacity.
13. Provide a passive phase monitoring relay in order to allow the generator and utility to synchronize prior to switching from the generator source to the utility source.
14. Enclosure: NEMA 3R.

15. Manufacturers:
    1. Briggs and Stratton
    2. Cummins
    3. Kohler
    4. Or Equal.

2.12 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breaker: Molded-case, thermal-magnetic type; complying with NEMA AB 1 and UL 489.

1. Tripping Characteristic: Designed specifically for generator protection.
2. Trip Rating: Matched to generator rating.
3. Mounting: Adjacent to or integrated with control and monitoring panel.

2.13 TOOLS AND SPARE PARTS

A. Provide any special tools required for normal operation and maintenance.

B. Spare parts shall be furnished with the equipment as follows:

Quantity	Item
5 each	Lamps for each type of indicating light
2 sets	Lube oil filter element
2 sets	Fuel filter element
1 set	Air cleaner element
1 set	V-belts (complete set)
1 set	Each size fuse
1 set	Special nuts, bolts, screws, etc.

PART 3 EXECUTION

3.1 GENERAL

A. The design, fabrication, assembly, testing, and inspection of all engine generator system components shall be in accordance with NFPA 110; latest edition.

3.2 ENGINE GENERATOR INSTALLATION

A. Install in strict accordance with the manufacturer's instructions and recommendations. Written installation and startup instructions shall be at the job site before installation may begin.

3.3 ANCILLARY EQUIPMENT INSTALLATION

A. Install all engine generator system ancillary equipment and connecting piping and wiring in strict conformance with the recommendations of the various manufacturers and in accordance with the requirements of the engine generator supplier. All minimum clearances required by the California Electrical Code shall be maintained.

3.4 TESTING

A. Visual and Mechanical Inspections:

1. Compare equipment nameplate with drawings and specifications.
2. Inspect physical and mechanical condition.
3. Inspect correct anchorage and rounding.

B. Electrical and Mechanical Tests:

1. Perform an insulation resistance test on generator winding with respect to ground in accordance with ANSI/IEEE standard 43.
2. Perform phase rotation test to determine compatibility with load requirements.
3. Functionally test engine shutdown for low oil pressure, over temperature, overspeed and other features as applicable.
4. Verify correct functioning of governor and regulator.
5. Perform vibration baseline test.

C. Conduct 2-Hour Load Test:

1. A full-load load shall be applied for 2 hours.
2. The facility load can serve as part or all of the load, supplemented by a resistive load bank of sufficient size to provide a load equal to 100 percent of the nameplate kW rating, less applicable derating factors.
3. A unity power factor shall be used for on-site testing.
4. The following data shall be recorded every 15 minutes throughout the duration of the load test.
   a. Voltage.
   b. Frequency.
   c. Amperes.
   d. Oil Pressure.
   e. Water temperature.

3.5 MANUFACTURER'S FIELD SERVICE

A. Manufacturer's Representative: Present at site or classroom designated by Owner for minimum person days listed below, travel time included:

1. For functional and performance testing and completion of manufacturer's certificate of proper installation.
2. For startup training of Owner's personnel.

B. **Onsite training shall be conducted with Trinidad Rancheria maintance department and their maintance provider.**

END OF SECTION

DIVISION 31
EARTHWORK

SECTION 311100
CLEARING & GRUBBING

PART 1 GENERAL

1.1 Description

A. This section includes protection of facilities, clearing site of incidental paving, surface debris, grasses, trees, and other plant life in preparation for site excavation work and general development.

PART 2 MEASUREMENT

A. Payment for this item shall be on a lump sum basis per bid schedule 004100.

PART 3 PRODUCTS (not used)

PART 4 EXECUTION

4.1 Protection

A. Locate, identify, and protect existing facilities scheduled to remain in place from damage during clearing and grubbing practices.

B. Identify and protect trees, plant growth, and features designated to remain as final landscaping.

C. Protect benchmarks from damage and displacement.

4.2 Clearing

A. Clear only those areas required in order to accommodate proposed developments. Do not adversely impact adjacent property, frontage improvements, or other property features or improvements.

4.3 Removal

A. Remove paving, brush, trees, and other debris as required and dispose of off-site in strict accordance with applicable laws and regulations.

END OF SECTION 311100

SECTION 312200
GRADING

PART 1 GENERAL

1.1 DESCRIPTION

A. This Section includes regulatory requirements, protection, site grading, excavation, backfilling, compaction, quality control, and restoration.

1.2 MEASUREMENT

A. Site Grading: Paid as a Lump Sum as included in the Bid Schedule Section 004100 including all work as described in Section 011000.

1.3 REFERENCES

A. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.5 Kg) Rammer and 12 inch (300 mm) Drop.
B. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
C. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.5 Kg) Rammer and 18 inch (450 mm) Drop.
D. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
E. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
F. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

1.4 SUBMITTAL REQUIREMENTS

A. In accordance with the requirements of Section 6705 of the Labor Code of the State of California, submit a detailed plan to the Engineer before excavation, showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches 5 feet or more in depth.
B. Plan must be submitted and approved by the Engineer prior to start of work.

1.5 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.
B. Structure: Foundation, manhole, septic tank, cleanout, catch basin, vault, or culvert.
C. Solid Rock: Large continuous masses of igneous, metamorphic, or sedimentary rock, which in the opinion of the Engineer cannot be excavated without drilling and blasting. Soil that is capable of being excavated with rippers is not considered solid rock.
D. Loose Rock: Boulders and other detached stones, with a minimum volume of 1 cubic yard.

1.6 FIELD MEASUREMENTS

A. Verify that survey benchmarks, control points, and intended elevations are as shown on drawings.

1.7 PROTECTION

A. Barricade open excavations.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
C. Provide safe conditions for workers and passers-by.

PART 2 PRODUCTS (not used)

PART 3 EXECUTION

3.1 PREPARATION

A. Notify Underground Service Alert (800) 227-2600 in Northern California prior to excavation. Comply with their notice requirements.
B. Identify required lines, levels, contours, and datum locations.
C. Protect plant life, lawns, rock outcropping, and other features remaining as final landscaping.
D. Protect benchmarks, existing structures, fences, and paving from excavating equipment and vehicular traffic.
E. Maintain and protect utilities and structures to remain.

3.2 EXCAVATION

A. Use open cut method on all excavation unless otherwise shown on the drawings, required by permit, or approved in writing by the Engineer.
B. Stockpile excavated material on site. Any material not utilized for construction purposes may be spread onsite or removed from the site as designated by the Engineer.

3.3 CLASSIFICATION OF EXCAVATION

A. All excavation with equipment commonly used in the industry is classified as common excavation (except for drilling and blasting).

3.4 FIELD QUALITY CONTROL

A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
    1. Tests may be performed at locations approved by the Engineer.
    2. Test results from tests prior to construction will be made available to the contractor.
    3. Testing is at the Owner’s expense.
B. Compaction testing will be determined at the Engineer's discretion.
C. If work does not meet specified requirements, remove, replace, and retest. All re-testing is at the contractor’s expense. Compaction tests shall be used as the basis for determination of acceptability of work performed under this contract.

3.5 PROTECTION OF FINISHED WORK

A. If vehicular traffic has altered finished work, reshape and re-compact.

END OF SECTION 312200

SECTION 312300
EXCAVATION AND FILL

PART 1 GENERAL

1.1 DESCRIPTION

A. This Section includes requirements for excavation, backfilling, compaction, quality control, and restoration.

1.2 MEASUREMENT

A. Excavation and Fill: Cost to be per Bid Schedule Section 004100. Includes all labor material and equipment necessary for the excavation and fill to the lines and grades shown on the project plans for construction. Fill shall be compacted per this section. Measurement shall be made by weight tickets or performing field surveys after initial site grading and after fill is complete, and shall be measured by the in-place volume or by other methods agreed upon between the Contractor and the Engineer. No allowance will be made for shrink/swell of fill material during excavation or transport. No separate payment will be made for fill materials utilizing onsite soils.
B. Trenching & Backfilling: Cost to be included in other items. Includes excavating trenches and backfilling for all pipe and utilities in the project area.

1.3 REFERENCES

A. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.5 Kg) Rammer and 12 inch (300 mm) Drop.
B. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
C. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.5 Kg) Rammer and 18 inch (450 mm) Drop.
D. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
E. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
F. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

1.4 SUBMITTAL REQUIREMENTS

A. In accordance with the requirements of Section 6705 of the Labor Code of the State of California, submit a detailed plan to the Engineer before excavation, showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches 5 feet or more in depth.
B. Submit the plan to the Engineer prior to start of excavation.

1.5 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.
B. Structure: Foundation, manhole, septic tank, cleanout, catch basin, vault, or culvert.
C. Solid Rock: Large continuous masses of igneous, metamorphic, or sedimentary rock, which in the opinion of the Engineer cannot be excavated without drilling and blasting. Soil that is capable of being excavated with rippers is not considered solid rock.

D. Loose Rock: Boulders and other detached stones, with a minimum volume of 1 cubic yard.

1.6 FIELD MEASUREMENTS

A. Verify that survey benchmarks, control points, and intended elevations are as shown on drawings.

1.7 PROTECTION

A. Barricade open excavations.
B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
C. Provide safe conditions for workers and passers-by.

PART 2 PRODUCTS

2.1 IMPORTED PIPE EMBEDMENT

A. Use crushed stone or gravel that is free of shale, clay, friable material, and debris. Grade in accordance with ASTM C136, within the following limits:

Sieve Size	Percent Passing
1 in	100
3/4 in	90 to 100
3/8 in	20 to 55
No. 4	0 to 10
No. 8	0 to 5

2.2 IMPORTED STRUCTURAL FILL

A. Use imported soil (if required) that has angular fragments and a low expansion index (less than 30 per ASTM D 4829). Use imported fill that complies with the requirements of Caltrans Class 2 Aggregate Sub-base:

Sieve Size	Percent Passing (Contract Compliance)
3 in (75mm)	100
1½ in (63mm)	87 to 100
No. 4 (4.75mm)	45 to 100
No. 200 (.075mm)	0 to 34

PART 3 EXECUTION

3.1 PREPARATION

A. Notify Underground Service Alert (800) 227-2600 in Northern California prior to excavation. Comply with their notice requirements.
B. Identify required lines, levels, contours, and datum locations.
C. Protect plant life, lawns, rock outcropping, and other features remaining as final landscaping.

D. Protect benchmarks, existing structures, fences, and paving from excavating equipment and vehicular traffic.
E. Maintain and protect utilities and structures to remain.

3.2 EXCAVATION

A. Use open cut method on all excavation unless otherwise shown on the drawings, required by permit, or approved in writing by the Engineer.
B. Stockpile excavated material on site. Any material not utilized for construction purposes may be spread onsite or removed from the site as designated by the Engineer.

3.3 CLASSIFICATION OF EXCAVATION

A. All excavation with equipment commonly used in the industry is classified as common excavation (except for drilling and blasting).

3.4 TRENCH EXCAVATION

A. Cut trenches sufficiently wide to enable installation and inspection. Remove water or materials that interfere with work. When groundwater is encountered the Contractor must submit a dewatering plan to the Engineer for approval.
B. Maintain trench sides as vertical as possible--between 12 inches and 24 inches wider than the outside diameter of the pipe barrel--below pipe level.
C. Excavate trench width above the pipe as wide as necessary for shoring, sheeting, and installation.
D. Center trench excavation on pipe alignment for a minimum clearance of 6 inches on each side of the pipe.
E. Hand trim for bell and spigot pipe joints. Remove loose matter.
F. Restore over-excavated areas. If the trench bottom is over-excavated below the intended grade, fill over-excavation with imported pipe embedment and compact to density equivalent to the in situ material.
G. Remove lumped subsoil, boulders, and rock up to ½ yd3 (measured by volume).
H. Excavate for additional trench depth when soil prevents adequate pipe support. Refill addition with imported pipe embedment. Remove large rock, boulders, and large stones to provide 3 inches of soil cushion on all sides of the pipe and pipe accessories.
I. Length of trench that may be left open at any one time is 100 yards. Do not leave trench open over night.
J. Stockpile excavated material in designated area on site, and remove excess material from site.

3.5 STRUCTURE EXCAVATION

A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.
B. Excavate a sufficient distance from walls and footings to provide forming except where concrete for walls or footings is directly against excavated surfaces.
C. Do not excavate below depths indicated in the drawings. Restore over-excavated areas to proper elevation by filling with imported structural fill. Do not interfere with 45 degree

bearing splay of foundations.

D. Hand-trim the bottom of the excavation to prevent disturbing the soil below the required depth.

3.6 BACKFILLING

A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

3.7 TRENCH BACKFILLING

A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.
B. Use excavated soil as final backfill unless the Engineer determines it unsuitable. Unsuitable final backfill material is solid or loose rock larger than 6 inches or lumps larger than 3 inches. Do not use organic matter or debris.
C. Backfill pipe embedment material in uniform layers on all sides of the pipe in lifts not to exceed 6 inches.
D. Use the following methods when placing final backfill material unless otherwise required by permits or authority.

Compact	Not to Exceed (In loose measure)
Roadways	6 inches thick
Rights-of-way and outside roadway	12 inches thick
Unimproved surfaces	24 inches thick

3.8 STRUCTURE BACKFILLING

A. Place structure fill material in uniform layers on all sides of the structure 6 inches thick.
B. Do not fill structure material until the structure footing or other portions of the structure have been inspected.
C. Use excavated soil as final backfill material unless Engineer determines it unsuitable. Unsuitable final backfill material is solid or loose rock larger than 6 inches or lumps larger than 3 inches. Do not use organic matter or debris.

3.9 COMPACTION

A. Compact final backfill to the percentage of maximum density determined by Cal 216 and as provided in “Percent of Maximum Density” table below, unless otherwise specified by the Owner.

Percent of Maximum Density				
Location	**Bedding**	**Haunching**	**Initial Backfill**	**Final Backfill**
Roadways, Improved Surfaces	95	95	95	95
Roadway Rights-of-Way Outside of Roadway Prism	90	90	90	90
Unimproved Surfaces, Fields, Etc.	90	90	80	80
Backfill Around Structures	95	95	95	95

3.10 FIELD QUALITY CONTROL

A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
   1. Tests may be performed at locations approved by the Engineer.
   2. Test results from tests prior to construction will be made available to the contractor.
   3. Testing is at the Owner's expense.
B. Compaction testing will be determined at the Engineer's discretion.
C. If work does not meet specified requirements, remove, replace, and retest. All re-testing is at the contractor's expense. Compaction tests shall be used as the basis for determination of acceptability of work performed under this contract.

3.11 PROTECTION OF FINISHED WORK

A. If vehicular traffic has altered finished work, reshape and re-compact.

END OF SECTION 312300

SECTION 312500
EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Clearing and Grubbing: Section 311100
B. Grading: Section 312200.
C. Excavation and Fill: Section 312300.
D. Division 32.
E. Division 33.

1.2 REFERENCES

A. Erosion and Sediment Control Guidelines: Conform to the latest edition of EPA Standards and Specifications for Erosion and Sediment Control". Refer to these guidelines for construction and maintenance of all items (Temporary and Permanent Structural, Vegetative and Biotechnical) included in the Storm Water Pollution and Prevention Plan (SWPPP).
B. Storm Water Management: Conform to the latest edition of EPA Stormwater Management Design Manual.

1.3 RESPONSIBILITY

A. A Storm Water Pollution and Prevention Plan (SWPPP) has been prepared for this project. Install and maintain the temporary storm water and diversion control items as shown on the drawings before starting any grading or excavation and maintain compliance of all Storm Water Pollution Plan/NPDES regulations. Provide any temporary sediment and erosion control measures that may be required within limits of the work, including any staging areas, throughout construction in conformance with the plan, and as directed by the Owner's Representative. Place the permanent control practices required before the removal of the temporary storm water diversion and control items.
B. During construction conduct operations in such a manner as to prevent or reduce to a minimum any damage to any water body from pollution by debris, sediment, chemical or other foreign material, or from the manipulation of equipment and/or materials in or near a stream or ditch flowing directly to a stream. Any water which has been used for wash purposes or other similar operations which become polluted with sewage, silt, cement, concentrated chlorine, oil, fuels, lubricants, bitumens, or other impurities shall not be discharged into any water body.
C. In the event of conflict between these specifications and the regulation of other Federal, State, or local jurisdictions, the more restrictive regulations shall apply.
D. The Contractor shall adhere to all requirements of the Storm Water Pollution Prevention Plan. Comply with all applicable regulatory requirements.
E. The Contractor will submit copies of certificates documenting that on-site workers have completed a Erosion & Sediment Control training as required.

1.4 DESCRIPTION

A. The Work shall consist of furnishing, installing, inspecting, maintaining, and removing soil and erosion control measures as shown on the contract documents or as ordered by the Director's Representative during the life of the contract to provide erosion and sediment control.
B. Temporary structural measures provide erosion control protection to a critical area for an interim period. A critical area is any disturbed, denuded slope subject to erosion. These are used during construction to prevent offsite sedimentation. Temporary structural measures shall include check dams, construction road stabilization, stabilized construction entrance, dust control, earth dike, level spreader, perimeter dike/swale, pipe slope drain, portable sediment tank, rock dam, sediment basin, sediment traps, silt fence, storm drain inlet protection, straw/hay bale dike, access waterway crossing, storm drain diversion, temporary swale, turbidity curtain, water bars or other erosion control devices or methods as required.
C. Permanent structural measures also control protection to a critical area. They are used to convey runoff to a safe outlet. They remain in place and continue to function after completion of construction. Permanent structural measures shall include debris basins, diversion, grade stabilization structure, land grading, lined waterway (rock), paved channel, paved flume, retaining wall, riprap, rock outlets, and stream bank protection or other erosion control devices or methods as required.
D. Vegetative measures shall include brush matting, dune stabilization, grassed waterway, vegetating waterway, mulching, protecting vegetation, seeding, sod, straw/hay bale dike, stream bank protection, temporary swale, topsoil, and vegetating waterways.
E. Biotechnical measures shall include wattling (live fascines, brush matting, brush layering, live cribwall, and branchpacking) vegetated rock gabions, live staking, tree revetment, and fiber rolls.
F. Weekly inspections will be completed by the Director's Representative. Comply with and correct all deficiencies found as a result of these inspections. At the end of the construction season when soil disturbance activities will be finalized or suspended until the following spring, the frequency of the inspections may be reduced. If soil disturbance is completely suspended and the site is properly stabilized, a minimum of monthly inspections must be maintained. The stabilization activities must be completed before snow cover or frozen ground. If vegetation is required, seeding, planting and/or sodding must be scheduled to avoid die-off from fall frosts and allow for proper germination/establishment. Weekly inspections must resume no later than March 15.

1.5 DEFINITIONS – TEMPORARY STRUCTURAL MEASURES

A. Check Dam: Small barrier or dam constructed of stone, bagged sand or gravel to reduce velocity of flow.
B. Construction Road Stabilization: Stabilization of construction roads to control erosion.
C. Stabilized Construction Entrance: A stabilized pad of aggregate underlain with geo-textile where traffic enters a construction site to reduce or eliminate tracking of sediment to public roads.
D. Dust Control: Prevent surface and air movement of dust from disturbed soil surfaces.
E. Earth Dike: A temporary berm or ridge of compacted soil, located to channel water to a sediment trapping device.

F. Level Spreader: A non-erosive outlet for concentrated runoff to disperse flow uniformly across a slope.
G. Perimeter Dike/Swale: A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area to prevent runoff from entering a disturbed area and preventing sediment laden runoff from leaving a construction site.
H. Pipe Slope Drain: A structure placed from the top of a slope to the bottom of a slope to convey runoff without causing erosion.
I. Portable Sediment Tank: A compartmented tank to which sediment laden water is pumped to retain sediment before pumping the water to adjoining drainage ways.
J. Rock Dam: A rock embankment located to capture sediment.
K. Sediment Basin: A barrier constructed across a drainage way to intercept and trap sediment.
L. Sediment Traps: A control device formed by excavation to retain sediment at a storm inlet or other points of collection.
M. Silt Fence: A barrier of geo-textile fabric installed on contours across the slope to intercept runoff by reducing velocity. Replace after 1 year.
N. Storm Drain Inlet Protection: A semi-permeable barrier installed around storm inlets to prevent sediment from entering a storm drainage system.
O. Straw/Hay Bale Dike: Intercept sediment laden runoff by reducing velocity. Replace after 3 months.
P. Access Waterway Crossing: A structure placed across a waterway to provide circulation for construction purposes.
Q. Storm drain Diversion: The redirection of a storm drain line or outfall channel for discharge into a sediment trapping device.
R. Temporary Swale: A temporary excavated drainage swale.
S. Turbidity Curtain: A flexible, impenetrable barrier used to trap sediment when construction occurs within water bodies or along a shoreline.
T. Water Bars: A ridge or channel constructed diagonally across a sloping road or right-of-way.

1.6 DEFINITIONS – PERMANENT STRUCTURAL MEASURES

A. Diversion: A parabolic or trapezoidal swale with a supporting ridge on the lower side constructed across a slope to intercept and convey runoff to stable outlets at non-erosive velocities.
B. Debris Basin: A barrier or dam constructed across a waterway to form a basin for catching and storing sediment or debris that gives protection downstream.
C. Grade Stabilization Structure: A structure to stabilize the grade by providing channel linings that can withstand high velocities.
D. Lined Waterway (rock): A waterway lined with stone to dispose of high velocity runoff.
E. Paved Channel (concrete): A waterway lined with concrete to dispose of high velocity runoff.
F. Paved Flume: A concrete lined channel to convey water down a steep slope.
G. Retaining Wall: A structural wall constructed to prevent soil movement down steep slopes.
H. Riprap: A layer of stone designed to protect slopes that are subject to erosion.
I. Rock Outlets: Rock placed at the outlet end of culverts, conduits or channels.

J. Stream Bank Protection: Stabilization of eroding stream banks through use of riprap, gabions or pre-cast concrete units.

1.7 DEFINITIONS – VEGETATIVE MATERIALS MEASURES

A. Brush Matting: Hardwood brush layered along a stream bank with a grid of stakes and wire. This acts as a mulch for seedlings established in the bank.
B. Dune Stabilization:
C. Grassed or Vegetating Waterway: A parabolic or trapezoidal channel below adjacent ground level stabilized by vegetation to convey water without causing erosion.
D. Mulches: Hay, straw, wood cellulose, fiber mats, flexible growth medium and other materials approved by the Director's Representative.
E. Protecting Vegetation: Protecting trees, shrubs, ground cover and other vegetation from damage.
F. Temporary Seeding: Erosion control protection to a critical area for an interim period. A critical area is any disturbed, denuded slope subject to erosion.
G. Permanent Seeding: Grasses established and combined with shrubs to provide perennial vegetative cover on disturbed, denuded, slopes subject to erosion.
H. Sod: Used where a quick vegetative cover is required.
I. Straw/Hay Bale Dike: Intercept sediment laden runoff by reducing velocity. Replace after 3 months.
J. Stream Bank Protection: Stabilization of eroding stream banks through use of vegetation.
K. Temporary Swale: A temporary excavated drainage swale.
L. Topsoil: Placed before permanent seeding or sod is installed.

1.8 DEFINITIONS – BIOTECHNICAL MATERIALS MEASURES

A. Vegetative Rock Gabions: A combination of vegetation and rock gabions for slope stabilization. Live branch cuttings are layered through the gabion protruding beyond the face of the gabion.
B. Live Fascines: Bundles of branches staked into shallow trenches which are then filled with soil. They are oriented along a contour and placed in multiple rows.
C. Brush Matting: Hardwood brush layered along a stream bank with a grid of stakes and wire. This acts as a mulch for seedlings established in the bank.
D. Live Staking: Large stakes sharpened at the bottom end and forced vertically into the ground.
E. Brush Layering: Stabilize slope areas above the flow line of stream banks. Long branches are placed with cut ends into a terraced slope.
F. Live Crib Wall: A combination of vegetation and structural elements used along streams where flowing water is a hazard. Layers of logs are alternated with long branches protruding out between them.
G. Tree Revetment: Used for bank stabilization by placing tree trunks and branches overlapped and anchored to absorb energy, reduce velocity and capture sediment.
H. Branch Packing: Alternates live branch cuttings and tamped backfill to repair small localized holes in slopes. Used for areas less than 4' deep and 6' wide.
I. Fiber Roll: A coconut fiber, straw, or excelsior woven roll encased in a netting of jute, nylon, or burlap to dissipate water energy and provide a medium for introduction of

herbaceous vegetation. Anchor into a bank and provide suitable backfill behind the roll where vegetation can be planted.

PART 2 PRODUCTS

2.1 MATERIALS

A. Plant Materials for biotechnical slope protection: Locate stands of specified species and obtain approval to harvest material from these stands or obtain from managed production beds that are maintained for commercial distribution. Install all plant materials within 8 hours of cutting or provide proper storage.
   1. Shrub willows: "Streamco" purpleosier willow, and "Bankers" dwarf willow, Redosier Dogwood.

B. Seeding: Permanent see Section 329219.

2.2 COMPANIES-TEMPORARY STRUCTURAL

A. The following companies are manufacturers of temporary structural products. See highlighted notes to determine the specific products manufactured by each company.
   1. Mirafi, 365 South Holland Drive, Pendergrass, Ga, 30567, (888) 795-0808, www.mirafi.com.
   2. North American Green, 14649 Highway 41 North, Evansville, IN 47725, (800) 772-2040, www.nagreen.com.
   3. Siltdam Inc., P.O. Box 960, Brockton MA, 02303, (800) 699-2374, www.spilldam.com.
   4. Nedia Enterprises, Inc., 22187 Vantage Pointe Place, Ashburn, VA 20148, (888) 725-6999, www.nedia.com.
   5. Belton Industries, 5600 Oakbrook Parkway, Norcross GA., 30093, (800) 225-4099, www.beltonindustries.com.
   6. KriStar, 1219 Briggs Ave., Santa Rosa, CA 95401, (800) 579-8819, www.kristar.com.
   7. Rolanka International Inc., 155 Andrew Drive, Stockbridge GA 30281, (800) 760-3215, www.rolanka.com.
   8. Apex Resources Inc., 12910 Shelbyville Road, Louisville, KY 40243 (888) 677-2739, www.apexr.com.
   9. MonoSol, LLC, 707 E. 80th PL., Merrillville, IN 46410 (800) 237-9552, www.terraloc.com.
   10. Brockton Equipment Inc., P.O. Box 960, Brockton, MA 02303 (800) 699-2374, www.spilldam.com.
   11. Aer-Flo Inc., 4455 18th St. East, Bradenton, FL 34203 (800) 823-7356, www.aerflo.com.
   12. Contech Construction Products Inc., 9025 Centre Point Drive, Suite 400, West Chester, Ohio 45069, (800) 338-1122, www.contech-cpi.com.

2.3 COMPANIES-PERMANENT STRUCTURAL

A. Gabions, retaining walls, stone mattresses:
   1. Contech Construction Products Inc., 9025 Centre Point Drive, Suite 400, West Chester, Ohio 45069, (800) 338-1122, www.contech-cpi.com.

2.4 COMPANIES-VEGETATIVE

A. Nedia Enterprises, Inc., 22187 Vantage Pointe Place, Ashburn, VA 20148, (888) 725-6999, www.nedia.com.
B. Agrecol Corporation, 2918 Agriculture Drive, Madison, Wi, 53718, (608) 226-2544, www.agrecol.com.

2.5 COMPANIES-BIOTECHNICAL

A. BIODEGRADABLE BLANKETS
   1. Rolanka International Inc., 155 Andrew Drive, Stockbridge GA 30281, (800) 760-3215, www.rolanka.com.
   2. Nedia Enterprises, Inc., www.nedia.com.
   3. Kristar (800) 579-8819.

PART 3 EXECUTION

3.1 WORK AREAS

A. The Director's Representative has the authority to limit the surface area of erodible earth exposed by earthwork operations and to direct the Contractor to provide immediate temporary or permanent erosion measures to minimize damage to property and contamination of watercourses and water impoundments. Under no circumstances will the area of erodible earth material exposed at one time exceed 50,000 sq. ft. The Director's Representative may increase or decrease this area of erodible earth material exposed at one time as determined by his analysis of project, weather and other conditions. The Director's Representative may limit the area of clearing and grubbing and earthwork operations in progress commensurate with the Contractor's demonstrated capability in protecting erodible earth surfaces with temporary, permanent, vegetative or biotechnical erosion control measures.
B. Schedule the work so as to minimize the time that earth areas will be exposed to erosive conditions. Provide temporary structural measures immediately to prevent any soil erosion.
C. Provide temporary seeding on disturbed earth or soil stockpiles exposed for more than 7 days or for any temporary shutdown of construction. In spring, summer or early fall apply rye grass at a rate of 1 lb/ 1000 sq.ft. In late fall or early spring, apply certified Aroostook Rye at a rate of 2.5 lbs./ 1000 sq. ft. Apply hay or straw at a rate of 2 bales/ 1000 sq. ft. or wood fiber hydromulch at the manufacturer's recommended rate. Hay or straw shall be anchored.
D. Coordinate the use of permanent controls or finish materials shown with the temporary erosion measures.
E. All erosion and sediment control devices must be maintained in working order until the site is stabilized. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, re-seeding, or re-mulching, must be performed immediately.
F. After final stabilization has been achieved temporary sediment and erosion controls must be removed. Areas disturbed during removal must be stabilized immediately.

END OF SECTION 312500

DIVISION 32
EXTERIOR IMPROVEMENTS

SECTION 320100
CHAIN-LINK FENCES AND GATES

PART 1: GENERAL

1.1 SUMMARY

A. This section includes galvanized steel chain link fabric and framework.

1.2 SUBMITTALS

A. Product data: for each product indicated.

PART 2: PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC WITH PRIVACY SLATS

A. Steel chain-link fence fabric: comply with chain link fence manufacturers institute's "Product Manual".

1. Mesh and wire size: 2 inch mesh, 0.120 inch diameter
2. Zinc-coated fabric: ASTM A 392, with zinc coating applied to steel wire mesh fabric after weaving with Class 1, 1.2 oz/sq. ft. minimum coating weight.
3. Privacy Slats (owner to select color)

B. Fabric selvage: twisted at top selvage and knuckled at bottom.

2.2 INDUSTRIAL FENCE FRAMING

A. Round steel pipe: standard weight, Schedule40, galvanized steel pipe complying with ASTM F 1083. ASTM F 1043, material design group IA, external and internal coating Type A, consisting of not less than 1.8 oz./sq. ft. zinc; and line, end, corner, and pull posts and top rail as required for heavy Industrial Fence.

B. Round steel pipe: cold-formed, electric resistance welded steel pipe. ASTM F 1043, material design group IC, with external and internal coatings; and line, end, corner, and pull posts and top rail as required for heavy industrial fence.

C. Post brace rails: match top rail for coating and strength and stiffness requirements. Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and clamps for attaching rails to posts.

D. Top rails: with swedged end or fabricated for expansion type coupling.

E. Intermediate rails: match top rail for coating and strength and stiffness requirements.

F. Bottom rails: match top rail for coating and strength and stiffness requirements.

2.3 GATES

A. Swing gates: comply with ASTM F 900 for gates, made from pipe and tubing complying with ASTM F 1043, complete with hardware.

1. Frames and bracing: for gate fabric height as indicated.
   a. Corners: welded.
2. Gate posts: fabricate members from round galvanized steel pipe for gate fabric heights by leaf widths indicated.

B. Horizontal slide gates: comply with ASTM F 1184 for gates, made from pipe and tubing comply8ing with ASTM F 1043, complete with hardware.

1. Type II: cantilever slide, class 1 with external roller assemblies.
2. Frames and bracing: fabricate members from round galvanized steel pipe for the gate type, fabric height, opening width, and overhead clearance indicated.
   a. Corners: welded.

2.4 TENSION WIRE AND FITTINGS

A. Metallic-coated steel tension wire: 0.177 inch diameter, marcelled tension wire complying with ASTM A 824 at locations indicated.

B. Fittings: provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.

2.5 CAST IN PLACE CONCRETE

A. General: comply with ACI 301 for cast in place concrete; materials consisting of Portland cement complying with ASTM C 150, aggregates complying with ASTM C 33, and potable water.

1. Concrete mixes: normal weight concrete with not less than 3000 psi compressive strength (28 days), 3 inch slump, and 1 inch maximum size aggregate.

PART 3: EXECUTION

3.1 INSTALLATION

A. General: install chain link fencing to comply with ASTM F 567 and more stringent requirements indicated. Do not begin installation before final grading is completed, unless otherwise permitted by the Owner.

B. Post excavation: drill or hand-excavate holes for posts to diameters and spacing indicated, in firm, undisturbed or compacted soil.

C. Post setting: hand-excavate holes for post foundations in firm, undisturbed or compacted soil.

1. Concrete footings: place concrete around posts and vibrate or tamp for consolidation. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured. Set the following post types in concrete footings and protect portion of posts aboveground from concrete splatter:

    a. Terminal.
    b. Line; using mechanical devices to set line posts per ASTM F 567 is permitted.
    c. Gate.

D. Terminal posts: locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment.

E. Line posts: space line posts uniformly at ten (10) feet o.c.

F. Intermediate rails: install in one piece as indicated, spanning between posts, using fittings, special offset fittings, and accessories.

G. Bottom rails: install as shown, spanning between posts, using fittings and accessories.

H. Chain link fabric: apply fabric to outside of enclosing framework.

I. Tie wires: attach wire to chain link fabric per ASTM F 626. tie fabric to line posts at maximum interval of 12 inches o.c. and to braces at maximum interval of 24 inches o.c.

J. Gate installation: install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust gate to operate smoothly, easily, and quietly throughout entire operation range. Confirm that latches and locks engage accurately and securely without forcing or binding.

END OF SECTION 02821

SECTION 321123
AGGREGATE BASE

PART 1 GENERAL

1.1 SECTION INCLUDES
- B. Aggregate base course

1.2 MEASUREMENT
- A. Aggregate Base: Paid by the Ton. Includes subgrade preparation, supply of aggregate base, preparation and compaction of aggregate base, and testing.

1.3 REFERENCES
- A. State of California, Department of Transportation, Standard Specifications http://www.dot.ca.gov/hq/esc/oe/construction_standards.html, latest edition.

1.4 QUALITY ASSURANCE
- A. Perform Work in accordance with State of California, Department of Transportation, Standard Specifications, current addition.
- B. Obtain materials from same source throughout the life of the project.

1.5 SUBMITTALS
- A. Contractor must submit mix design to the Engineer for approval prior to placement of material in the field.

PART 2 PRODUCTS

2.1 MATERIALS
- A. Aggregate for Base: Course: 1-1/2”- crushed rock or 3/4”- washed
  In accordance with State of California, Department of Transportation, Standard Specifications 2010, Section 26.

PART 3 EXECUTION

3.1 PLACING AGGREGATE BASE
- A. Install Work in accordance with State of California, Department of Transportation, Standard Specifications current edition.

3.7 PROTECTION
- A. Immediately after placement, protect aggregate base from mechanical injury.

END OF SECTION 321123

SECTION 321300
ASPHALTIC CONCRETE PAVING (RIGID)

PART 1 GENERAL

1.1 SECTION INCLUDES
- A. Asphaltic concrete paving
- B. Aggregate base course

1.2 MEASUREMENT
- A. Asphalt Concrete Paving: Paid by the Ton. Includes saw cutting of existing pavement, removal of existing pavement, asphalt concrete pavement, tack coating surfaces, placing, compacting, and rolling, furnishing the mix design, and testing.
- B. Aggregate Base: Paid by the Ton. Includes subgrade preparation, supply of aggregate base, preparation and compaction of aggregate base, and testing.

1.3 REFERENCES
- A. State of California, Department of Transportation, Standard Specifications, latest edition.
- B. Division 31: Earthwork

1.4 QUALITY ASSURANCE
- A. Perform Work in accordance with State of California, Department of Transportation, Standard Specifications, current addition.
- B. Obtain materials from same source throughout the life of the project.

1.5 ENVIRONMENTAL REQUIREMENTS
- A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees Fahrenheit, or when the receiving surface is wet or frozen.

1.6 SUBMITTALS
- A. Contractor shall submit mix design to the Engineer for approval prior to placement of material in the field.

PART 2 PRODUCTS

2.1 MATERIALS
- A. Asphalt Concrete Pavement: Type A, ½ inch Maximum Medium, In accordance with State of California, Department of Transportation, Standard Specifications July 2006, Section 39.
- B. Aggregate for Base Course: ¾- Class 2, In accordance with State of California, Department of Transportation, Standard Specifications July 2002, Section 26.
- C. Primer: In accordance with State of California, Department of Transportation, Standard Specifications July 2006.
- D. Tack Coat: In accordance with State of California, Department of Transportation, Standard Specifications July 2006.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify base conditions under provisions of Section 00500.

B. Verify the compacted subgrade is ready to support paving and imposed loads.

3.2 PLACING AGGREGATE BASE

A. Install Work in accordance with State of California, Department of Transportation, Standard Specifications current edition.

3.3 PREPARATION - PRIMER

A. Apply primer in accordance with State of California, Department of Transportation, Standard Specifications current edition.

3.4 PREPARATION - TACK COAT

A. Apply tack coat in accordance with State of California, Department of Transportation, Standard Specifications current edition.

3.5 PLACING ASPHALT PAVEMENT

A. Install Work in accordance with State of California, Department of Transportation, Standard Specifications current edition. Section 39.

B. Compact pavement by rolling to a minimum of ninety-five percent of the maximum density as determined by nuclear investigation per ASTM D2922. Compaction tests shall be taken at a minimum frequency of one test for every five hundred tons, or one test per shift. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment. Compaction testing will be performed by the Owner, and a log will be kept of tests taken and results obtained.

C. Perform rolling with consecutive passes to achieve even and smooth finish free of roller marks.

3.6 TOLERANCES

A. Flatness: Maximum variation of ¼ inch measured with a 10-foot straight edge.

3.7 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury until surface temperature is less than 140 degrees Fahrenheit.

END OF SECTION 321300

SECTION 321600
CURBS, GUTTERS, SIDEWALKS & DRIVEWAYS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Related Sections include the following:
   1. Division 03: Concrete.
   2. Division 31: Earthwork.
   3. Division 32: Exterior Improvements.
   4. Division 33: Utilities

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.
B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
   1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities and general public access.

PART 2 PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
   1. Use flexible or curved forms for curves with a radius 100 feet (30.5 m) or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Reinforcement to meet requirements and products specified in Caltrans Standard Specifications Section 52.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Shall be as defined in Caltrans Standard Specifications Section 40.
B. Normal-Weight Aggregates: Shall be 3/4" maximum size aggregate in mixes for Curb and Gutter.
C. Water: ASTM C 94/C 94M.
D. Air-Entraining Admixture: ASTM C 260.
E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

2.4 CURING MATERIALS

A. Curing materials to meet requirements and products specified in Caltrans Standard Specifications.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
C. A.D.A. Detectable Warning Panels
    1. The detectable warning panels shall be either lightweight concrete paver panels or vitrified polymer composite (VPC) panels as described below:
        a. LIGHTWEIGHT CONCRETE PANEL: The detectable warning panels shall be lightweight concrete paver panel, having a minimum size of 1' x 2' and be at least ¾" thick. The concrete panels shall be capable of reaching 10,000 psi and be reinforced with high tensile stainless steel pre-stressed tendons. The panel shall include a waterproofing admixture and surface treated with a penetrating silane sealer for resistance and decreased water absorption. The panel shall be safety yellow color throughout the panel.
        b. VITRIFIED POLYMER COMPOSITE PANEL: Vitrified Polymer Composite (VPC) Cast in Place Detectable/Tactile Warning Surface Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. The tiles shall be panels having a minimum size of 2' x 2' and shall have a minimum face thickness of 3/16" with a minimum embedment depth of 1- ¼". The panels shall have a minimum tensile strength of 18,000 psi and a minimum flexural strength of 25,000 psi. Panel shall

be “Federal Yellow”. Panels shall be “Armor-Tile” as manufactured by Engineered Plastics, Inc. or as approved by the Engineer.

c. STAINLESS STEEL PANEL: The detectable warning panel shall be manufactured of stainless steel and coated with a factory applied durable, skid resistant surface powder coating. The coating shall be UV stable. Panel shall be ADA compliant, safety yellow in color and manufactured by MetaDome, LLC or as approved by the Engineer.

d. TRUNCATED DOME CONFIGURATION: The detectable warning panel shall consist of surface of truncated domes aligned in a square grid pattern.
   i. Dome Size – Truncated domes in a detectable warning surface shall have a nominal diameter of 0.9 inches, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 inches.
   ii. Dome Spacing – Truncated domes in a detectable warning surface shall have a center-to center spacing of nominal 2.35 inches.
   iii. Size – Detectable warning surfaces shall extend twenty-four (24) inches in the direction of travel and the full width of the curb ramp landing.
   iv. The detectable warning surface shall be located so that the nearest edge is 8” minimum from the face of the curb.
   v. The panel will be installed according to the manufacturer’s recommendations. All cost for labor, material, and equipment shall be included in the price bid for “Detectable Warning Panels”.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
   1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
B. Proportion mixtures to provide normal-weight concrete with the following properties:
   1. Compressive Strength (28 Days): 2,500 psi.
   2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
   3. Slump Limit: 3 inches, plus or minus 1 inch.
C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
   1. Air Content: 6-1/2 percent plus or minus 1.5 percent for Curb and Gutter
   2. Air Content: 6 1/2 percent plus or minus 1.5 percent for sidewalks and driveways.
D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements as follows:
   1. Fly Ash or Pozzolan: 20 percent.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine exposed sub-grades and sub-base surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
B. Proof-roll prepared base surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.
   1. Completely proof-roll base in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
   2. Proof-roll with a loaded 10-wheel tandem-axle dump truck weighing not less than 15 tons.
   3. Base with soft spots and areas of pumping or rutting exceeding depth of 1 inch or as determined by the Engineer require correction according to requirements in Division 31.
   4. In areas that rut less than 1 inch the ruts shall be filled with base material, compacted and brought to grade.
C. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

A. Remove loose material from compacted sub-base surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
D. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

E. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
   1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.

F. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
   1. Locate expansion joints at intervals of 50 feet (15.25 m), unless otherwise indicated.
   2. Extend joint fillers full width and depth of joint.
   3. Terminate joint filler not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
   4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

G. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows to match jointing of existing adjacent concrete pavement:
   1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a ¼-inch (6mm) radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
   2. Sawed Joints: Form contraction joints with saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

H. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch (6- mm) radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from sub-base surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten sub-base to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
E. Do not add water to concrete during delivery or at Project site.
F. Do not add water to fresh concrete after testing.
G. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
H. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
    1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
I. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.
    1. Remove and replace concrete that has been placed for more than 15 minutes without being covered by top layer, or use bonding agent if approved by Architect.
J. Screed pavement surfaces with a straightedge and strike off.
K. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
L. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
M. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
    1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
    2. Do not use frozen materials or materials containing ice or snow.
    3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.
N. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
    1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.
B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
   1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.7 CONCRETE PROTECTION AND CURING

A. Refer to Caltrans Standard Specifications for Concrete Protection and Curing.

3.8 A.D.A. CURB RAMP CONSTUCTION

A. Sidewalk curb approach ramps shall be constructed to current A.D.A. standards as detailed in the plans.
B. Surface Texture: A.D.A. surface texture requirements shall be met with the installation of the A.D.A. compliant detectable warning panels inserted in the sidewalk approach ramps as indicated in the details.
C. Ramp Coloring: Curb ramp shall be Safety or Federal Yellow to meet A.D.A. contrast requirements and expansion material shall be used adjacent to the curb and gutter section.
D. Slope
   1. New construction
      a. Maximum slope shall be 1 foot vertical to 12 feet horizontal. Maximum rise for any run shall be thirty (30) inches or less.
   2. Reconstruction
      a. Curb ramps reconstructed where space limitations prevent the use of 1:12 slopes may have the following:
         i. Slopes between 10 and 12 to 1 are allowed a maximum rise of 6 inches.
         ii. Slopes between 8 and 10 to 1 are allowed for a maximum rise of 3 inches.
         iii. Slopes greater than 8 horizontal to 1 vertical are not allowed.
   3. Side slope
      a. When curb ramps are located where pedestrians must walk across the ramp, the ramp shall have flared sides with a maximum slope of 1-foot vertical to 10 feet horizontal.

3.9 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:
   1. Elevation: 1/4 inch (6 mm).
   2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).

3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm).
4. Joint Spacing: 3 inches (75 mm).
5. Contraction Joint Depth: Plus ¼ inch (6 mm), no minus.
6. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
   1. Testing Frequency: Obtain at least 1 composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mix placed each day.
      a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
   2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
   3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
   4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
   5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
   6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.
      a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

D. Test results shall be reported in writing to Architect, Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.
H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321600

329200
TURF AND GRASSES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Seeding and mulching all disturbed areas.
B. Related Sections:
   1. 311100: Clearing and Grubbing
   2. 312200: Grading
   3. 312300: Excavation and Fill
   4. 312500: Erosion and Sediment Controls
   5. 320513: Soils
   6. 328000: Irrigation
   7. 329300: Plants

1.2 SUBMITTALS

A. Per Section 013300.
B. Product Data: All items proposed to be provided under this Section.
C. Manufacturer's Certificate: Certificate of compliance with these Specifications.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
B. Seed: Conform to all Federal, State, Tribal, and local laws.
   1. Deliver to site each variety of seed individually packaged and tagged to show name, net weight, origin, and lot number.
C. Fertilizer: Conform to State and local fertilizer laws.

PART 2 PRODUCTS

2.1 PRODUCT HANDLING

A. At time of delivery, furnish to the Engineer all invoices of all materials received for application rate verification/determination.
B. Immediately remove from the site, materials which do not comply with the specified requirements, and promptly replace with materials meeting the specified requirements.

2.2 FERTILIZER

A. Provide commercial balanced 10-10-10 fertilizer delivered to the site in sealed bags labeled with the manufacturer's guaranteed analysis.

2.3 GRASS SEED

A. Provide grass seed which is:
   1. Free from noxious weed seeds, and re-cleaned;
   2. Grade A recent crop seed;

3. Treated with appropriate fungicide at time of mixing;
4. Delivered to the site in sealed containers with dealer's guaranteed analysis.

2.4 WOOD CELLULOSE FIBER

A. Provide wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer.
B. Material to be heat processed so as to contain no germination or growth inhibiting factors.
C. It shall be dyed (non-toxic) an appropriate color to facilitate field metering.

2.5 STRAW MULCH

A. Provide straw or hay material.
   1. Straw to be stalks of wheat, rye, barley or oats;
   2. Hay to be timothy, pea vine, alfalfa, or Bermuda.
B. Material to be reasonably dry and reasonably free from mature seed bearing stalks, roots, bulblets, Johnson Grass, Nut grass, Wild Onion, scotch broom, bramble brush, and all other noxious weeds not specifically identified but known to be of non-native and invasive plant species.

2.6 EXCELSIOR FIBER MULCH

A. To consist of six (6) inches, average length, wood fibers cut from sound, green timber.
B. Make cut in such a manner as to provide maximum strength of fiber, but at a slight angle to natural grain of the wood.

PART 3 EXECUTION

3.1 GENERAL

A. Seed following areas immediately upon completion of their construction:
   1. Slopes greater than four horizontal to one vertical;
   2. Utility rights-of-way adjacent to stream banks.
B. Areas ready for planting between August 1 and February 28 shall be planted with a temporary cover in accordance with Schedule No. 2. At the acceptable seasons for planting under Schedule No. 1, the turf previously seeded under Schedule No. 2 shall be destroyed by reworking the soil and re-seeded in accordance with Schedule No. 1 as specified herein.

3.2 SEEDING SCHEDULES

A. Mixtures of different types of seed for the various schedules shall be weighed and mixed in proper proportions in the presence of the Engineer.
B. Schedule No. 1 - Permanent Seeding - Planting dates March 1 to August 15:
   1. Common Name of Seed / minimum Pounds per Acre.
   2. Browntop Millet / 15
   3. Hulled Bermuda / 10
   4. Carpetgrass / 25
C. Schedule No. 2 - Temporary Seeding - Planting dates August 16 - February 28:
   1. Common Name of Seed / minimum Pounds per Acre.

2. Rye Grain / 30
3. Un-hulled Bermuda / 20

3.3 PREPARATION

A. Bring all areas to proper line, grade and cross section indicated on the plans.
B. Repair erosion damage prior to commencing seeding operations.
C. Loosen seed bed to minimum depth of 3 inches.
D. Remove all roots, clods, stones larger than two (2) inches in any dimension, and all other debris.

3.4 APPLICATION OF FERTILIZER

A. Spread uniformly over areas to be seeded at:
   1. Rate of 1,000 lbs per acre;
   2. Use approved mechanical spreaders, per manufacturer's recommendations.
B. Mix with soil to depth of approximately three (3) inches.

3.5 SEEDING AND MULCHING

A. General:
   1. Perform seeding during the periods and at the rates specified in the seeding schedules;
   2. Do not conduct seeding work when ground is frozen or excessively wet;
   3. Produce satisfactory stand of grass regardless of period of the year the Work is performed.
B. Seeding, slopes steeper than four horizontal to one vertical:
   1. Conform to Methods EA, WF or WCF as specified hereinafter;
   2. Method EA (Emulsified Asphalt):
      a. Sow seed not more than 24 hours after application of fertilizer;
      b. Use mechanical seed drills on accessible areas, rotary hand seeders, power sprayers, etc. may be used on steep slopes or areas not accessible to seed drills;
      c. Cover seed and lightly compact with cultipacker if seed drill does not compact soil;
      d. Within 24 hours following compaction of seeded areas, uniformly apply 0.2 gallons per square yard of emulsified asphalt over the seeded area.
   3. Method WF (Excelsior Fiber Mulch):
      a. Sow seed as specified for Method EA.;
      b. Within 24 hours following covering of seeds, uniformly apply excelsior fiber at the rate of 100 pounds per 1000 square feet;
      c. Material may be applied hydraulically or dry. If applied dry, it shall be thoroughly wetted immediately following placing;
      d. Seeded areas to be lightly rolled to form a tight mat of the excelsior fibers.
   4. Method WCF (Wood Fiber Mulch):
      a. Apply seed, fertilizer and wood fiber mulch using hydraulic equipment;
      b. Equipment to have built-in agitation system with capacity to agitate, suspend and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed and water;
      c. Minimum capacity of slurry tank: 1000 gallons;
      d. Apply fiber mulch at rate of 35 pounds per 1000 sq. ft.;

e. Regulate slurry mixture so that amounts and rates of application will result in uniform application of all materials at not less than the specified amounts;
f. Apply slurry in a sweeping motion, in an arched stream, so as to fall like rain, allowing the wood fibers to build upon each other;
g. Use color of wood pulp as guide, spraying the prepared seed bed until a uniform visible coat is obtained.

C. Seeding, slopes equal to or flatter than four horizontal to one vertical:
1. Sow seed as specified for Method EA, steps a thru c;
2. Apply straw or hay mulch at the rate of 100 pounds per 1000 square feet uniformly to the seeded area. Mulch may be applied by hand, by mechanical spreaders, or by blowers;
3. Hold mulch in place with a tack coat of emulsified asphalt, applied at the rate of 0.2 gallons per square yard.

3.6 MAINTENANCE

A. Maintain all seeded areas in satisfactory condition until final acceptance of the Work.
B. Areas not showing satisfactory evidence of germination within six weeks of the seeding date shall be immediately reseeded, fertilized and/or mulched.
C. Repair any eroded areas.
D. Mow as necessary to maintain healthy growth rate until final acceptance of the Work.

3.7 ACCEPTANCE

A. Permanently seeded areas under Schedule No. 1 will be accepted when the grass attains a height of two inches.
B. No acceptance will be made of temporary seeded areas under Schedule No. 2. Re-work and re-seed those areas in accordance with Schedule No. 1.

END OF SECTION 329200

SECTION 335000
PROPANE GAS PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 WORK INCLUDED

A. Work under this section shall include furnishing all labor, materials, tools, and equipment necessary for the complete installation of the propane gas system.

1.3 STANDARDS

A. Referenced Standards: Current publications of the Standards referred to by basic designation in Part 2 and Part 3 shall form a part of this specification to the extent indicated by references thereto.

1.4 SUBMITTALS

A. Submit each item specified in this Section according to the Conditions of the Contract and Division 1 Specification Sections and Section 013300.

B. Submit product information for each item of equipment, component, or specialties required for the propane gas system. Include construction material description, pressure classification, pipe connection details, dimensions and required clearances, and installation instructions.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Comply with the requirements specified in Division 1.

B. Piping specialties, including valves, shall have the manufacturer's trademark, name and/or model number and pressure rating, where applicable, affixed to permanently identify the manufacturer of product.

C. The installing contractors shall have the necessary licenses, knowledge, skills and equipment to enable proper and safe propane gas facility installation.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS

A. Pipe: Schedule 40 PVC, seamless pipe. **Or surface mount 1" with seismic flex.**

B. Fittings:

1. 1-1/2 size and smaller, threaded, 125 psi, malleable black iron, 150 pounds minimum wsp per ANSI/ASME B16.3.
2. 2" and larger, butt-welded fittings, conforming to ANSI/ASME B16.9.
3. Flanged fittings; conform to ANSI/ASME B16.5. Forged branch connections; conform to ASTM A181, Grade I, steel.

C. Unions:

1. Use right and left nipple unions.
2. In exposed locations at fixtures, appliances or equipment connections and immediately on discharge of building shutoff valve, ground-joint unions may be used.
3. Heavy duty flanged type unions may be used only when approved by authority having jurisdiction.

D. Joint Sealant: Teflon ribbon tape.

1. Manufacturer: Permacel No. 412 or approved.

2.2 VALVES

A. Valves 3" and Smaller: Valves shall be ball type with two-piece bronze body, conventional port, chrome plated ball, blowout-proof stem, 25% reinforced TFE seats, 125 lb. natural gas, threaded ends, lever handle operated. Valves shall be UL Listed for YRPV Gas Shut-off and AGA-B16.33 rated.

1. Manufacturer: Nibco No. T-580-70-UL or approved Watts.

B. Valves 1-1/2" and Smaller: Valves shall be lubricated plug type, gray-iron body, threaded ends, 200 lb. propane gas, two-bolt cover, metal seat, short pattern.

1. Manufacturer: Nordstrom No. 142 or Walworth No. 1700 or approved Watts.

C. Pressure Regulators: Spring-loaded diaphragm pressure regulation, pressure operating range as required for the pressure reduction indicated, volume capacity, not less than indicated, and threaded ends for sizes 2 inches and smaller, otherwise flanged.

1. Manufacturer: Equimeter Model 143-80 or Model 121 or approved.

D. Safety Shut-Off Valves: Provide a shock-actuated seismic safety shutoff valve in the service line between the meter and the building. Valve shall comply with ANSI Z21.70 and shall be UL listed and IAPMO listed. Valve shall be rated at 60 psi maximum.

1. Manufacturer: Safe-T-Quake or approved.

E. Vent Caps: Malleable iron, threaded, screened vent cap fitting.

1. Manufacturer: Equimeter Model 137 or approved.

2.3 GAS EQUIPMENT CONNECTORS

A. Flexible Connectors: Comply with ANSI Z21.24

B. Quick Disconnect Couplings: Comply with ANSI Z21.41

2.4 HANGERS AND SUPPORTS

A. Comply with the requirements of Section 15050, “Basic Materials and Methods.”

2.5 SEISMIC CONTROLS

A. Comply with the requirements of Section 15050, “Basic Materials and Methods.”

PART 3 EXECUTION

3.1 GENERAL SERVICE REQUIREMENTS

A. Make arrangements for the propane gas company to provide service, including meters, valves, piping, etc., for adequate gas supply to the building. Installation shall be in accordance with NFPA 24, propane gas company regulations and applicable local gas codes and ordinances.

3.2 INSTALLATION—GENERAL

A. General: Consult serving propane gas supplier prior to installation. Install propane gas piping, appliances and equipment in accordance with ANSI B31.2, B31.8 and NFPA 54.

B. Excavation and Backfilling:

1. Comply with applicable requirement of Division 2 and Section 15050.
2. Pipe shall be placed directly in the trench bottom and covered by not less than 3 inches of sand above the level of the top of the pipe except that, if the trench is rocky, the pipe shall be placed on a 3-inch bed of sand and covered as above. Remainder of backfilling shall be carried out in accordance with the requirements of "Earthwork" specified in Section 15050, "Basic Materials and Methods" and Division 2.

C. Coordinate provision of utility warning and identification tape with backfill operation. Tape shall be provided above all buried lines at a depth of 8 to 12 inches below finish grade.

3.3 PIPING INSTALLATION

A. Cut pipe accurately to actual dimensions and assemble in such a manner as to preclude residual stress. Supply connections shall rise above grade outside of foundation wall and pass through a full swing before entering the building. Within buildings, run piping parallel to structure lines and concealed in finished spaces. Provide drip at any point in propane gas piping where condensate may collect. Terminate each vertical supply pipe to burner or appliance with tee, nipple and cap to form a dirt trap. To supply multiple items of gas-burning equipment, provide manifold with inlet connections at both ends.

B. Thoroughly clean inside of all pipe and fittings before installation. Blow lines clear using 80 to 100 psig clean dry compressed air. Steel lines shall be rapped sharply entire pipe length before blowing clear. Cap or plug ends as necessary to maintain cleanliness throughout installation.

C. Above-Ground Steel Piping:

1. Determine and establish measurements for piping at the job site and accurately cut pipe lengths accordingly. For 2-inch diameter and smaller, use threaded or socket-welded joints. For 2-1/2 inch diameter and larger, use flanged or butt-welded joints.

2. Threaded Joints: Where possible, use pipe with factory-cut threads, otherwise cut pipe ends square, remove all fins and burrs, and cut taper pipe threads per ANSI B2.1. Threads shall be smooth, clean, and full-cut. Apply thread tape to male threads only. Work piping into place without springing or forcing. Backing off to permit alignment of threaded joints will not be permitted. Engage threads so that not more than three threads remain exposed. Use unions for connections to valves, meters, regulators for which a means of disconnection is not otherwise provided.
3. Welded Joints: Weld by the shielded metal-arc process, using covered electrodes and in accordance with procedures established and qualified per ANSI/AWS B2.1. Each welder and welding operator shall be qualified for the ANSI procedures as evidenced by a copy of a certified ANSI B31.2 qualification test report. Contractor shall conduct the ANSI qualification tests.
4. Flanged Joints: Use flanged joints for connecting welded joint pipe and fittings to valves to provide for disconnection. Install joints so that flange faces bear uniformly on gaskets. Engage bolts so that there is complete threading through the nuts and tighten so that bolts are equally torqued.
5. Pipe Size Changes: Use reducing fittings for all changes in pipe size. Size changes made with bushings will not be accepted.
6. Painting: Paint all new ferrous metal piping, including supports, in accordance with Section 15050, "Basic Materials and Methods". Do not paint piping until piping tests have been completed.
7. Identification of Piping: Comply with applicable requirements of Section 15050, "Basic Materials and Methods". Identify piping above ground in accordance with ANSI A13.1, using adhesive-backed or snap-on plastic labels and arrows. Apply to finished paint at intervals of not more than 50 feet. Provide two copies of the piping identification code framed under glass and install where directed.

D. Hangers and Supports: Install hangers and supports for steel piping in accordance with requirements and recommendations of MSS SP-69 and Section 15050, Basic Materials and Methods.

1. Seismic Restraints: Piping shall be seismically restrained to comply with provisions of seismic zone 4.

E. Pipe Sleeves: Comply with requirements of Section 15050, "Basic Materials and Methods". Where piping penetrates concrete wall or masonry wall, floor or firewall, provide pipe sleeve poured or grouted in place. Sleeve shall be section of steel pipe of such size to provide 1/4-inch or more annular clearance around pipe. Sleeve shall extend through wall or slab and terminate flush with both surfaces. Pack annular space with firestopping as specified in Section 15050, "Basic Materials and Methods".

F. Final Connections:

1. Make final connections to equipment and appliances using the following:

a. Domestic Hot Water Heaters: Connect with AGA Approved semi-rigid tubing and fittings.
b. Kitchen Equipment: Install AGA Approved flexible connector (and quick-disconnect coupling). Flexible connector shall be long enough to permit movement of equipment for cleaning and allow access to coupling.

2. Make final connections gas-tight, using minimal torque.

3.4 PRESSURE TESTS

A. Test pressure and duration shall be conducted in compliance with UPC Chapter 12. Use clean dry air, CO_2 or nitrogen pressure for testing. Systems that may be contaminated by gas shall first be purged. Make tests on entire system or on sections that can be isolated by valves. After pressurization, isolate entire piping system from all sources of air during test period.

B. Leaks in propane gas piping shall be located by applying soapy water to the exterior of the piping. Defects in gas piping and fittings shall be removed and replaced with sound material. Piping shall be retested.

C. All necessary apparatus and gases for conducting tests shall be furnished by the Contractor.

3.5 COMMISSIONING

A. Notify the Commissioning Agent one week prior to start up of equipment.

B. Submit to the Commissioning Agent a Verification of Completion form with the pre-functional check off sheet for each component when it is ready for functional testing.

C. Assist the Commissioning Agent as required to perform the functional testing on the system components and the system as a whole.

END OF SECTION

ATTACHMENTS