STANISLAUS RECREATION TOILET REPLACEMENT CONSTRUCTION SPECIFICATION INDEX

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DIVISION 01 - GENERAL

01 10 00 - Summary of Work

PART 1 - GENERAL

1.1 LOCATION

This project is located within the Stanislaus National Forest in Tuolumne, Calaveras, and Alpine Counties, California. A map of the project sites is in the **Drawings**.

1.2 SITE WORK

This contract is for the demolition, replacement and relocation of the vault restroom facilities as well as associated accessibility site work. The work shall include cleanup and disposal of all removed building material from Forest Service lands.

All work will be completed in accordance with **Project Specifications** and **Drawings**. The work includes: all labor, material, and equipment necessary to perform all the operations for the work specified.

1.3 CONSTRUCTION PHASING

The recreation areas will be open to the public during construction. The **Contractor** will take precautions to protect **Government,** public and private property during construction. Work will be restricted to 7 AM to 5 PM Monday thru Friday.

1.4 GOVERNMENT FURNISHED FACILITIES

(A) All temporary services use areas, and storage areas will be completely removed and the areas restored to pre-construction conditions upon completion of use.
(B) Transportation to and from the work site for the **Contractor's** personnel and materials will be provided at the **Contractor's** expense.

1.5 MATERIAL SOURCES

All materials will be obtained from a commercial source, unless noted otherwise.

1.6 STORAGE AREAS

Materials and equipment storage area will be confined to the areas identified by the **Contracting Officer**.

1.7 CLEAN-UP AND DISPOSAL

Disposal of waste material will be off National Forest Land and in compliance with local laws regarding disposal of construction waste.

1.8 TRAFFIC

Warning devices and barricades will be maintained in the construction area at all times and will be in conformance with the Manual on Uniform Traffic Control Devices. Safety precautions will

be in accordance with the latest edition of the State of California Construction Safety orders. The **Contractor** will keep the project area open for administrative and emergency traffic at all times.

1.9 PRECAUTIONARY MEASURES

Protection of Work: The **Contractor** will take precautions to protect all work during the construction period and will provide and maintain adequate protection during severe weather conditions to prevent damage to the work and the materials.

Safety: The **Contractor** is responsible for safeguarding employees, public, existing facilities, and forest resources from these operations. The **Contractor** will erect signs and chain-link fencing barricades as necessary to make unguarded operations safe. Signs and barricades will be maintained at night and on weekends. Precautions such as lowering tractor blades and safely storing materials will be practiced to prevent injury to others in the area.

Security: No security will be provided by the **Government**. The **Contractor** will take all precautions deemed necessary to secure the worksite, improvements and equipment. This may include security fencing.

1.10 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for the work of this section.
This work will be considered incidental to other Sections.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

*****END OF SPECIFICATION 01 10 00*****

01 10 10 - Applicable Codes and Standards

PART 1 - GENERAL

1.1 SCOPE

This section describes the codes and standards which apply to the work in this contract.

1.2 CODES AND STANDARDS

The following codes and standards will apply to the work in this contract. Where no date is specified, the applicable edition will be the one in effect on the date of solicitation.

A. International Building Code (IBC) 2006
B. Uniform Plumbing Code 2006
C. NFPA 101 Life Safety Code
D. National Electrical Code 2005
E. Uniform Mechanical Code 2006
F. Americans with Disabilities Act (A.D.A) / Architectural Barriers Act (A.B.A)
G. American Society for Testing Materials
H. American Society of Refrigeration and Air Conditioning Engineers
I. International Conference of Building Officials
J. Underwriters' Laboratories
K. Woodwork Institute of California's Manual of Millwork
L. Architectural Sheet Metal Manual A.I.A File No. 12-L
M. Manufacturers' Instructions
N. As required by the applicable listing or testing agency
O. As noted in the specifications

1.3 DEFINITIONS

Administrative Authority as used in the Uniform Plumbing Code, Uniform Mechanical Code and the National Electrical Code will be the **Contracting Officer**.

Building Official as used in the International Building Code will be the **Contracting Officer.**

PART 2 - PRODUCTS

2.1 GENERAL

All products and materials used in the completion of work will meet the standards and requirements of the codes and standards referenced in Section 1.2 of this Specification, unless otherwise indicated on the **Drawings** or in the **Specifications**. When more stringent requirements are called out in these specifications or on the **Drawings**, the more stringent requirement will take precedence over the codes and standards.

PART 3 - EXECUTION

3.1 GENERAL

All work in the contract will meet the standards and requirements of the codes and standards referenced in Section 1.2 of this Specification, unless otherwise indicated on the **Drawings** or in the **Specifications**. When more stringent requirements are called out in these specifications, or on the **Drawings**, the more stringent requirements will take precedents over the codes and standards. This Section describes the codes and standards which apply to the work in this contract.

*****END OF SPECIFICATION 01 10 10*****

01 10 30 - Definitions

PART 1 – GENERAL

1.1 DEFINITIONS

Wherever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning will be interpreted as follows:

Adjustment in Contract Price. "Adjustment in contract price" will mean "equitable adjustment" as used in the Federal Acquisition Regulations.

Arch Pipe. A culvert section, usually formed of bolted structural plates, that is an arc of a circle (usually one-half or less); that is, a bottomless culvert.

Base Course. The layer or layers of specified or selected material of designed thickness placed on a subbase or subgrade to support a surface course.

Bearings. The portion of a beam, girder, or truss that transmits the bridge superstructure load to the substructure.

Berm. Curb or dike constructed to control runoff water or traffic flow.

Change. "Change" means "Change Order" as used in the Federal Acquisition Regulations.

Clearing Limits. The limits of clearing as designated on the ground or on the **Drawings**.

Conduit. A natural or artificial channel for carrying fluids, as water pipes, canals, and aqueducts.

Construction Slash. All vegetative material not meeting utilization standards, such as tops and limbs, timber, brush, and grubbed stumps associated with construction or reconstruction of a facility.

Contracting Officer (CO). The person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings.

Contracting Officer's Representative (COR) The **Government**-authorized representative designated in writing by the **CO** responsible for onsite administration of the contract.

Contractor. The individual, partnership, joint venture, or corporation undertaking the execution of the work under the terms of the contract and acting directly or through their agent, employees, or **sub-Contractor**s.

Controlled Felling. Directing the placement of trees in felling by wedges, jacks, cable tension, or distribution of holding wood or any combinations of these which will ensure that trees are dropped into previously cleared areas, or clear of any objects that are to remain.

Culvert. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that it is usually constructed entirely below the elevation of the traveled way.

Cushion Material. Native or imported material generally placed over rocky sections of unsurfaced roads to provide a usable and maintainable traveled way.

Defect. A failure to meet a requirement with respect to a single quality characteristic.

Drawings. The documents, including plan and profile sheets, cross sections, diagrams, layouts, schematics, descriptive literature, illustrations, schedules,

performance and test data, and similar materials showing details for construction of a facility.

Embankment. A structure of soil, aggregate, or rock material placed on the prepared ground surface and constructed to subgrade.

Equipment. All machinery and equipment, together with the necessary supplies for upkeep and maintenance, as well as tools and apparatus necessary for the proper construction and acceptable completion of the work.

Excess Excavation. Material from the excavation in excess of that needed for construction of designed roadways and facilities.

Forest Service. The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Gauge. The term "gauge" when used in connection with the measurement of plates will mean the U.S. Standard Gauge, except when reference is made to the measurement of metal sheets used in the manufacture of corrugated metal, pipe, metal plate culverts and arches, and metal cribbing, then the term means the "gauge" or "thickness" specified in AASHTO M 36, M 167, M 196, and M 219, as applicable. When the term "gauge" refers to the measurement of wire, it will mean the wire gauge specified in AASHTO M 32.

Government Land. National Forest System lands, and other lands controlled or administered by the Forest Service or by other Federal agencies.

Inspector. The **Government**-authorized representative designated in writing by the **CO** or **COR** responsible for detailed inspection.

Job-Mix Formula. The percentage of each material in a mixture intended for a particular use.

Laboratory. A testing laboratory of the **Government** or any other testing laboratory approved by the **Contracting Officer**.

Materials. Any substance specified for use in the construction of the project and its appurtenances.

Maximum Density. The highest density that can be obtained under stated conditions.

Measurement. Determining and expressing the quantities of work or materials.

Multi-Beam Girder. A precast, prestressed concrete member where the concrete deck is precast as an integral part of the member.

Neat Line. A line defining the proposed or specified limits of an excavation or structure.

Nominal Dimensions or Weights. The numerical values shown on the **Drawings** or in the specifications as measurements of material to be used in the construction.

Nominal Maximum Particle Size. The largest sieve size listed in the applicable specification upon which any material is permitted to be retained.

Overbreak. Material beyond the neat line of an excavation that is removed in the process of excavation, usually by blasting.

Pavement Structure. Subbase, base, or surface course, or combination thereof, placed on a subgrade to support the traffic load and distribute it to the roadbed.

Pipe. A culvert that is circular (round) in cross-section.

Pipe-Arch. A pipe that has been factory-deformed from a circular shape such that the width (or span) is larger than the vertical dimension (or rise).

Profile Grade. The trace of a vertical plane, as shown on the **Drawings**, intersecting the top surface at the centerline of the proposed facility construction.

Random Sampling. Sampling at times or locations determined in advance by the use of a table of random numbers.

Reasonably Close Conformity. Unless working tolerances are specified, all work performed and materials furnished will be in reasonably close conformity with lines, grades, cross sections, dimensions, and material requirements shown on the **Drawings**, indicated in the specifications, or designated on the ground. "Reasonably close conformity" is compliance with reasonable and customary manufacturing and construction tolerances.

Roadway. The portion of the road within the limits of excavation and embankment, including slope rounding.

Schedule of Items. A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, methods of measurement, unit price, and amount.

Second Samples. A sample taken when the initial sample indicates that the material is defective.

Sidewalk. The portion of the roadway constructed primarily for pedestrian use.

Specifications. A description of the technical requirements for a material, product, or service that includes criteria for determination whether these requirements are met.

Standard Specifications. Specifications approved for general application and repetitive use.

Subbase. The layers of specified or selected material of designed thickness placed on a subgrade to support a base course.

Subgrade. The layers of roadbed that bring it up to the top surface, upon which subbase, base, or surface course is constructed. For roads without base course or surface course, that portion of roadbed prepared as the finished wearing surface.

Tackifier. Binder for vegetative mulch.

Target Value. The percentage of each material in a mixture intended for a particular use from which allowable variations are measured.

Unit of Measurement. The unit and fractions of units shown in the Schedule of Items.

Unsuitable Material. The material excavated during roadway construction that is not usable in embankment and must be disposed of or that can be used only in certain locations or for limited purposes.

*****END OF SPECIFICATION 01 10 30*****

01 20 00 - Measurement and Payment

PART 1 - GENERAL

1.1 REQUIREMENTS

Measurement and payment for contract work will be made only for and under those pay items included in the **Schedule of Items**. All other work and materials will be considered incidental to and included in the payment of the pay items in the **Schedule of Items**.

1.2 PAYMENT

One (1) of the following methods of measurement for determining final payment is designated on the **Schedule of Items** for each pay item.

(A) Designed Quantities (DQ): These quantities denote the final number of units to be paid for under the terms of the contract. They are based upon the original design data available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, **Drawings**, and the presentation in the contract. Changes in the number of units of the originally contemplated work will not be made unless authorized under one (1) or more of the following conditions:

(1) As a result of changes authorized by the **Contracting Officer** in the originally contemplated work. Minor changes to adjust balance points, etc., will not be considered changes in quantities.

(2) As a result of the **Contracting Officer** determining that errors exist in the original design data used to determine designed quantities that cause a pay item to change by fifteen (15) percent.

(3) As a result of the **Contractor** submitting to the **Contracting Officer** a written request showing evidence of errors in the original design data used to determine design quantities that cause a pay item total to change by fifteen (15) percent or more. The evidence must be verifiable and consist of calculations, **Drawings**, or other data that show how the designed quantity is believed to be in error.

Final payment will be made for the designed quantities at the unit price shown in the **Schedule of Items**, subject to the Variation in Quantities Provision.

(B) Actual Quantities (AQ): These quantities are determined from measurements of completed work.

(C) Lump Sum Quantities (LSQ): These quantities denote one (1) complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job. They will not be measured.

1.3 UNITS OF MEASUREMENT

Payment will be by units defined and determined according to U.S. Standard measure.

*****END OF SPECIFICATION 01 20 00*****

01 30 00 – Work Schedule

PART 1 - GENERAL

1.1 SCOPE

This section includes the requirements for the submittal of the **Contractor's** proposed work schedule for the project.

1.2 MEASUREMENT AND PAYMENT

No separate measurement and payments will be made for this section. This work will be considered incidental to other Sections.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WORK SCHEDULE

(A) At the pre-work meeting, the **Contractor** will submit to the **Contracting Officer** for approval, a proposed work schedule for the project. The **Contracting** Officer shall be notified at least 24 hours prior to any activity which requires his inspection, acceptance, or approval. The **Contractor** will update approved schedule as necessary when significant changes occur during the progress of the work, or when requested by the **Contracting Officer**.

(B) The **Contractor** will be restricted from operations on holiday weekends.

(C) Work shall not be performed at the following sites within the project between Memorial Day and Labor Day: Lake Alpine, Rim of the World

3.2 SUBMITTALS

The electronic copy of the written work schedule will be submitted for approval.

*****END OF SPECIFICATION 01 30 00*****

01 40 00 - Shop Drawings and Submittals

PART 1 - GENERAL

1.1 SCOPE

Preform all work necessary and required for the construction of the project as indicated. Such Work includes but is not limited to the following:
(A) Shop Drawings
(B) Samples
(C) Catalog Data
(D) Operation and Maintenance Manuals
(E) Certificates and Warranties

1.2 SUBMITTALS

Submittals will include all pertinent data required to understand the quality of components, dimensional relationships, integration with other materials, assembly techniques, structural aspects, color, finish, texture, and other such characteristics as may be necessary to fully describe the item and its intended use.

1.3 MEASUREMENT AND PAYMENT

No separate measurement and payments will be made for this section. This work will be considered incidental to other Sections.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 SUBMITTALS

It is the **Contractor** responsibility to submit all items with such promptness as to cause no delay in work. Approval must be obtained before starting work which involves the item. The **Contractor** will allow fourteen (14) days for review by the **Contracting Officer**.

3.2 MANUFACTURER'S LITERATURE AND SHOP DRAWINGS

Submit electronic copies to the **Contracting Officer** for approval on the items required herein.

Submittal specifications are to be submitted in the following format:
(A) The specifications and salient qualities of the item specified in the contract.
(B) The specifications and salient qualities of the submittal item.
(C) A listing of the differences and a comparison between the two (2), including but not limited to the structural qualities, operational qualities, any modifications necessary to accomplish installation of unit, and guarantee and warranty.
(D) A cost comparison between the specified and submitted item(s) with the cost reduction benefit to the **Government** or adequate justification for a cost increase to the **Government**.
(E) Shop **Drawings** of submitted item(s) including wiring or layout diagrams.

If there are any modifications necessary to facilitate installation, a set of **drawings** showing installation of specified item and a set showing how the submittal item will be installed.

If the specified item is to be ADA accessible the submittal item needs to show ADA access on submitted **Drawings**, not just state it is available as ADA accessible.

Submittals are required, but not limited to, the following sections:

01 30 00 – Work Schedule
Project Schedule

02 41 10 – Structure Demolition

Selective Demolition Schedule

13 40 00 – Prefabricated Concrete Vault Toilet Buildings

Shop Drawings

Specifications and Installation Manual

Manufacturer's Literature

Concrete Mix Requirements

Operations and Maintenance Manual

32 11 00 - Base Courses

Material Certificates

32 12 16 – Asphaltic Concrete Paving and Base Material

Material Certificates

Weight or Load Slip

*****END OF SPECIFICATION 01 40 00*****

01 50 00 – Quality Control and Quantity Measurement

PART 1 - GENERAL

1.1 DESCRIPTION

This work will consist of providing quality control in conformance with the inspection of construction provisions of this contract to ensure compliance with the **Drawings**, **Specifications**, and provisions of the contract, and measuring the quantities of completed work in conformance with the provisions of the applicable specification. The **Contractor** will provide all personnel, equipment, tests, and reports necessary to meet the requirements of this specification. The **On-The-Job Superintendent** will not be the **Quality Control Manager** without written permission from the **Contracting Officer**.

1.2 RELATED WORK SPECIFIED ELSEWHERE

General Provisions FAR 52.236-5, Material and Workmanship

General Provisions FAR 52.236-6, Superintendence by the Contractor

General Provisions FAR 52.246-12, Inspection of Construction

1.3 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for the work of this section.
This work will be considered incidental to other Sections

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SAMPLING, TESTING, INSPECTION, AND MEASUREMENT OF QUANTITIES

The **Contractor** will provide and maintain appropriate measuring and testing devices, equipment, and supplies to accomplish the required measurement, testing, and inspection in a timely manner. Tests, measurements, and certifications will be made as required by the **Drawings** and specifications. The **Contractor** will take samples and perform inspections and tests necessary to achieve the quality of construction required by the contract and make required measurements of work under this contract performed onsite or offsite. Sampling and testing frequency for specific items will be specified in the related section.

The **Contractor** will maintain current records of all inspections and tests performed. The following information will be acceptable to the **Government**:

PROJECT NAME:_____CONTRACT No._____

Pay Item No.	Test	Date	Location	Standard	Results	Test By (Initials)

The **Contractor** will engage inspection and testing agencies which are prequalified as complying with the recommendations of "Independent Laboratory Qualification" by the American Council

of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

The **Contractor** will protect construction exposed by or for quality control service activities and protect repaired construction. Upon completion of inspection and testing repair damaged construction and restore substrates and finishes to eliminate deficiencies. The **Contractor** is responsible for repair and protection of inspected work, whether inspection is performed by the **Contractor** or by the **Government**.

The **Contractor** will certify in writing that all inspections and tests were performed in accordance with specifications.

3.2 AS-BUILT DRAWINGS

The **Contractor** will maintain a set of the contract **Drawings** depicting as-built conditions. These **Drawings** will be maintained in a current condition and will be available for review. All variations from contract **Drawings** will be indicated in red on the **Drawings**. Upon completion of the contract work, **As-Built-Drawings** will be submitted to the **Contracting Officer**.

3.3 CERTIFICATES AND MEASUREMENTS

Certification:

The **Contractor** will furnish certificates executed by the manufacturer, supplier, or vendor, stipulating that all offsite produced materials incorporated into the work meet the applicable requirements **Shown on the Drawings** or stated in the **Specifications**. Incidental purchases needed to remedy minor shortages of material will be certified by the **Contractor**. Earth, aggregate and concrete material will be certified and accurately completed indicating weights, volumes, and batch times where appropriate.

Measurements:

The **Contractor** will make all measurements for computation of quantities for all work items except those specified for payment by Designed Quantity (DQ). The **Contractor** will compute the quantities for periodic progress payments; the **Contracting Officer** will compute the quantities for the final payment based on measurements taken by the **Contractor**. All **Contractor** measurements are subject to verification. The **Contractor** will submit all field notes, calculation sheets, and other data used to determine quantities. The **Contractor** will certify in writing as to the accuracy of the measurements and computations submitted.

The following format or one (1) containing the following information will be acceptable to the **Government**:

PROJECT NAME:_____CONTRACT No._____

Pay Item	Date	Measurement	Test By

*****END OF SPECIFICATION 01 50 00*****

01 60 00 - Temporary Facilities and Utilities

PART 1 - GENERAL

1.1 SCOPE

The work of this section includes providing all temporary facilities and controls needed for the project. The **Contractor** will furnish all equipment, labor, materials, and incidentals necessary to hook-up, install and maintain the facilities. Such facilities include but are not limited to:
(A) Sanitary facilities
(B) Water
(C) Directional signs, safety signs, and barricades
(D) Temporary utilities such as water

1.2 SAFETY ASSURANCE

OSHA Complaisance: Comply with Occupational Health and Safety Requirements for Construction (29 CFR 1926).
Hazardous Materials Compliance: For hazardous materials regulated by OSHA see 29 CFR Part 1910, Subpart Z.

1.3 MEASUREMENT AND PAYMENT

No separate payment will be made for the work specified in this section. This work will be considered incidental to other Sections.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SANITARY FACILITIES

Contractor may use existing **Government** sanitary facilities after they are opened for public use. In the event that the existing **Government** facilities are not yet open to the public, the **Contractor** will provide temporary sanitary facilities for all workers and maintain the facilities in a clean and sanitary state. Temporary sanitary facilities will be provided at a rate of one seat per ten workers on site. **Contractor** furnished facilities will be available for **Government** personnel use.

3.2 WATER

Contractor may use existing **Government** water facilities after they are opened for public use, to the extent of available capacity. In the event that the existing **Government** facilities are not yet open to the public, the **Contractor** will provide temporary watering equipment. Watering equipment, including piping, shall be watertight. Tanks shall be of known capacity. Watering equipment used for dust control and finishing operations of subgrade and surface will provide uniform and controlled application of water from the driver's position at all times.

3.3 OPERATIONS AND STORAGE AREAS

Operation and storage areas will be restricted to the project site, as directed by the **Contracting Officer** and show on the **Drawings**.

3.4 COSTS

All fees and costs for the hook-up, installation, use, maintenance and removal of temporary facilities and controls will be paid by the **Contractor.**

*****END OF SPECIFICATION 01 60 00*****

01 70 00 - Mobilization

PART 1 - GENERAL

1.1 SCOPE

This work will consist of preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, and for all other work and operations that must be performed or that cause costs to be incurred prior to beginning work on the various items on the project site.

1.2 MEASUREMENT

Progress payments will be made as follows:

The **Contractor** can request payment for performance and payment bonds. The amount of the premium, including coinsurance and reinsurance agreements, will be paid upon receipt of evidence of full payment to the surety. When separate payment for bonding cost is made, the bonding cost will be subtracted from the total contract amount for this pay item and the balance paid in accordance with the progress payment schedule outlined below.

(A) When 5 percent or more of the original contract amount is earned from other pay items, 50 percent of the amount for mobilization, or 5 percent of the original contract amount, whichever is less, will be paid.

(B) When 10 percent or more of the original contract amount is earned from other pay items, 100 percent of the amount for mobilization, or 10 percent of the original contract amount, whichever is less, will be paid.

(C) Upon completion of all work on the project, any unpaid amount for mobilization will be paid.

Any bonding costs in excess of the total contract amount of this pay item will be paid under one (1) or more other pay items under this contract as determined by the **Contracting Officer**. In no circumstance will the total amount of this contract be increased as a result of bonding costs exceeding the total contract amount of this pay item.

The total of all payments will not exceed the original contract amount for this item.

1.3 PAYMENT

Payment will be made under:

PAY ITEM	DESCRIPTION	PAY UNIT
01 70 00	Mobilization	L.S.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

*****END OF SPECIFICATION 01 70 00*****

01 80 00 - Contract Closeout and Cleanup

PART 1 - GENERAL

1.1 SCOPE

This section includes the requirements covering the disposal of excess materials resulting from construction operations and the cleanup work required in areas affected by the construction.

1.2 MEASUREMENT AND PAYMENT

No separate payment will be made for work specified in this section. This work will be considered incidental to other Sections.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXCESS MATERIALS AND REFUSE

All refuse and unused materials generated by the **Contractor's** operations. This will include all vegetative materials and the like will be dispersed evenly throughout the area. Any material deemed unsuitable for dispersement by the **Contracting Officer** will be disposed of off of National Forest lands in accordance with Federal, State, and local regulations, or as directed by the **Contracting Officer**.

3.2 CLEANUP DURING CONSTRUCTION

Cleanup shall be on a daily basis at the job site. Cleanup will be performed by the **Contractor** as required to prevent accidents to personnel and protect all work in-place. Construction cleanup will consist of the removal of all dirt, trash, scrap, debris, and excess materials from any floor space or walking surface that may cause the tripping or sliding of workers, ladders or equipment.

3.3 FINAL CLEANUP

Immediately prior to the **Contractor's** request for final inspection of the project, final cleanup will be performed. During the final inspection the **Contractor** and **Contracting Officer** will review the **as-built** drawings on site.

3.4 QUALITY OF CLEANUP

Site: Remove all trash and debris. Items that will be discarded shall be disposed of off of National Forest lands in accordance with Federal, State, and local regulations, or as directed by the **Contracting Officer**.

3.5 SALVAGEABLE ITEMS

Salvageable items not intended for use in this contract and not specifically designated to remain the property of the Government shall become the property of the Contractor

*****END OF SPECIFICATION 01 80 00*****

DIVISION 02 EXISTING CONDITIONS

02 41 10 - Structure Demolition

PART 1 – GENERAL

1.1 DESCRIPTION

(A) Demolish existing restroom structures as indicated in Plans. Demolition shall include removal or demolition of existing vault. Pump existing vault and dispose of wastewater per regulatory requirements. All debris shall be removed from Forest Service lands and disposed of in a landfill certified for construction debris.

1.2 SUBMITTALS

(A) Submit under provisions of Section 01 40 00 – Shop Drawings and Submittals
(B) Schedule: Submit for approval selective demolition schedule

1.3 QUALITY ASSURANCE

Codes and Regulations: Comply with governing codes and regulations. Use experienced workers.

1.4 SEQUENCING

(A) Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.

1.5 MEASUREMENT AND PAYMENT

Measurement is Designed Quantity. Payment of the amount bid under Pay Item 02 41 19 in the Schedule of Items will be made for satisfactory completion of all work required in this specification. Such amount will constitute full compensation for all work and incidentals.

Payment will be made under:

PAY ITEM	DESCRIPTION	METHOD OF MEASUREMENT	PAY UNIT
02 41 11	Concrete Vault Toilet Demolition	Designed Quantity	E.A.
02 41 12	Fiberglass Vault Toilet Demolition	Designed Quantity	E.A.
02 41 13	Wooden Vault Toilet Demolition	Designed Quantity	E.A.
02 41 14	Single Vault Toilet Removal	Designed Quantity	E.A.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SELECTIVE DEMOLITION

(A) Demolition Operations: Do not damage building elements and improvements indicated to remain. Items of salvage value, not included on schedule of salvage items to be returned to Government, shall be removed from structure. Storage or sale of items at project site is

prohibited.

(B) Operations: Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

(C) Security: Provide adequate protection against accidental trespassing. Secure project after work hours.

3.2 SCHEDULE

(A) Items for Protection During Demolition and Construction:
  (1) Designated site improvements, trees, and plantings
  (2) Adjacent construction

*****END OF SPECIFICATION 02 41 19*****

DIVISION 13 – SPECIAL CONSTRUCTION

13 40 00 - Prefabricated Concrete Vault Toilet Buildings

PART 1 - GENERAL

1.1 SCOPE

(A) The work of this section consists of prefabrication, on-site delivery, off-loading, placement, assembly, and complete installation of new precast concrete vault toilets, including specified sitework and earthwork.

(C) The exterior finish and color scheme for each vault toilet building is:
(1) Will be selected at time of award.

1.2 RELATED WORK SPECIFIED ELSEWHERE

31 20 00 – Structural Excavation and Backfill

1.3 SUBMITTALS

(A) Shop Drawings: Submit shop drawings for each proposed model. Drawings must show the exact model floor plan, and the size and location of all plumbing fixtures, partitions, electrical components, vents, screens, doors, windows, etc.

(B) Specifications and Installation Manual: Provide one copy of the specifications and installation manual for each proposed model.

(C) Provide Manufacturer's Literature for the following:
(1) Door and door hardware
(2) Toilet, toilet seat and lid, grab bars, and toilet paper holder
(3) Paint - interior
(4) Caulk, grout, and adhesive
(5) Concrete form liners
(6) Concrete color additive and stain including color chips, curing compound and sealer
(7) Signs
(8) Coat Hooks
(9) Windows
(10) Vents
(11) Waste Receptacles
(12) Concrete

(D) Concrete Mix Requirements
(1) Provide 28-day compressive strength test results within 35 days following manufacturing of the first building for each accepted model.
(2) If concrete supplier, aggregate source, or any additives change at any time, submit new concrete information to the Contracting Officer for approval.

(E) Operation and Maintenance Manual: Provide three copies of the operation and maintenance manual to the Contracting Officer at the time of delivery. Operation and Maintenance Manual shall include, but not limited to, start-up procedures; recommended types of cleaners and cleaning tools that should be used; plus any additional information needed to ensure a properly functioning toilet.

1.4 MEASUREMENT AND PAYMENT

Measurement is Designed Quantity. Payment of the amount bid under Pay Item 13 40 00 in the Schedule of Items will be made for satisfactory completion of all work required in this specification. Such amount will constitute full compensation for all work and incidentals.

Measure each precast concrete vault toilet as a unit, including manufacture, delivery, and complete installation on site.

Payment will be made under:

PAY ITEM	DESCRIPTION	METHOD OF MEASUREMENT	PAY UNIT
13 40 01	Single Vault Toilet Installation	Designed Quantity	E.A.
13 40 02	Double Vault Toilet Installation	Designed Quantity	E.A.

PART 2 - PRODUCTS

2.1 MANUFACTURER CRITERIA

(A) The manufacturer supplying the requested precast concrete vault facility must meet the following:
  (1) Manufacturing plant must be Precast/Prestressed Concrete Institute (PCI) certified at the time of bid.
  (2) Manufacturer must provide stamped, engineered drawings prior to acceptance.
  (3) Manufacturer must show four examples of Sweet Smelling Technology designed precast concrete vault toilet facilities produced, installed, and in use as an example of their ability to perform on this contract.
  (4) Manufacturer must be continuously engaged in the production of precast concrete vault toilets for five years minimum.
  (5) Manufacturer shall provide a 20 year warranty against defects in material or workmanship on all concrete components and a one year warranty on all other components.

2.2 DESIGN REQUIREMENTS

(A) Structural Live Loads – Buildings shall be designed to meet the following load requirements in accordance with the International Building Code (IBC).
  Snow Load – 350 psf
  Wind Load – 120 mph (fastest mile) or 150 mph (3-second gust), Exposure C
  Earthquake – Maximum considered ground motion shall be 175 (0.2 second spectral response acceleration) and 125 (1.0 second spectral response acceleration), Site Class D. Design requirements associated with Uniform Building Code (UBC) Zone 4 are acceptable.
  Floor – 100 psf

(A) Additional Design Standards - Contractor is responsible for adding reinforcement as needed to facilitate handling, assembling building components and transporting

without incurring structural damage or cracking of the building components. Vault toilet shall incorporate all design aspects of Sweet Smelling Technology as outlined by Briar Cook for the U.S. Forest Service. Vault toilets shall have one-piece full length and width vault units to support the building, screen area and snow loads evenly. Vault toilets shall have a one-piece floor unit to prevent panels that migrate in different direction during periods of freeze/thaw stress. Vault toilets shall have an all concrete design with a minimum 7/12 roof pitch. Vault toilets shall have a minimum 4 inch wall, 4 ½ inch roof, and 5 inch floor thickness. All wall to floor interior surface seams shall have a minimum 1" radius coving made of high strength grout.

(B) Single vault toilets shall be one stall with alcove as indicated and oriented on the drawings.

(C) Double vault toilets shall include a chase.

(D) Toilet buildings shall have a concrete prefabricated uniform vault with polyethylene vault liner insert, minimum volume of 1000 gallons per toilet compartment, and a hinged vault cleanout lid able to be locked with a padlock.

(E) Units shall come with chase (double vaults only), solar vent stack fan, and commercial grade lockable door knobs all keyed the same (Schlage or equal). Contractor shall provide 10 keys.

(C) Accessibility - Prefabricated vault toilet buildings shall conform to the requirements of the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines dated July 23, 2004 (ADA/ABA) and the Architectural Barriers Act Accessibility Standard (ABAAS). Buildings shall have full 60-inch turning diameter in each interior and entry area.

(D) Tolerances - Precast concrete panels shall be cast within ¼" of dimensions shown on shop drawings.

(E) Design and Production - Design, production or methods cannot be changed during the contract period without prior approval of the Contracting Officer.

2.3 QUALITY ASSURANCE

(A) Minimum Contractor Requirements - Precast concrete manufacturing plant shall be Precast/Prestressed Concrete Institute (PCI) certified. Welders shall be currently qualified according to AWS D1.1.

(B) Testing - The Contractor shall be responsible for all sampling and concrete testing. Sampling and testing shall be conducted by an independent PCI certified testing laboratory, unless otherwise approved by the Contracting Officer. All testing shall be performed by qualified individuals who have been certified ACI Technician Grade 1. Sampling shall be in accordance with ASTM C172.

The following test shall be performed for first batch poured each day:

Slump, ASTM C143

Air content, ASTM C231; the air content will be in the range of 5.0% +/- 2.0%.

Compressive strength, ASTM C39

1 cylinder for release, with a minimum strength of 2500 psi.

1 cylinder at 7 days, with a minimum strength of 4500 psi.

1 cylinder at 28 days, with a minimum strength of 5000 psi.

Contractor shall provide copies of test results to the Contracting Officer upon request.

2.4 STANDARDS

ASTM C33 Concrete Aggregates
ASTM C39 Method of Test for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94 Standard Specification for Ready-Mixed Concrete
ASTM C143 Method of Test for Slump of Concrete
ASTM C150 Standard Specification for Portland Cement
ASTM A185 Standard Specification for Steel Welded Wire Reinforcement, Plain, or Concrete
ASTM C192 Method of Making and Curing Test Specimens in the Laboratory
ASTM C231 Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C309 Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494 Standard Specification for Chemical Admixtures for Concrete
ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel bars for Concrete Reinforcement
ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete
ACI 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 1211.1 Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete
ACI 306 Cold Weather Concreting
ACI 318 Building Code Requirements Structural Concrete and Commentary (includes Errata)
PCI MNL 116 Quality Control for Plants and Production of Precast Prestressed Concrete Products

2.5 MATERIALS

(A) Concrete - General - The concrete mix design will be designed to ACI 211.1 to produce concrete of good workability. Concrete will contain a minimum of 675 pounds of cementitious material per yard. Cement will be a low alkali type I/II or III conforming to ASTM C-150. Coarse aggregates used in the concrete mix design will conform to ASTM C33 with the designated size of coarse aggregate #67. Minimum water/cement ratio will not exceed .45. Air-entraining admixtures will conform to ASTM C260. Water reducing admixtures will conform to ASTM C494, Type A. If Self Compacting Concrete (SCC) is used, it must conform to ASTM C1611
https://www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products#04

(B) Colored Concrete - Color additives will conform to ASTM C979.
The following will contain colored concrete:

(1) Toilet building roof panels
(2) Building walls
(3) Screen panels

The same brand and type of color additive will be used throughout the manufacturing process. All ingredients will be weighed and the mixing operation will be adequate to ensure uniform dispersion of the color.

(C) Cold Weather Concrete - Cold weather concrete placement will be in accordance with ACI 306. Concrete will not be placed if ambient temperature is expected to be below 35 degrees F. during the curing period unless heat is readily available to maintain the surface temperature of the concrete at least 45 degrees F. Materials containing frost or lumps of frozen materials will not be used.

(D) Hot Weather Concrete - The temperature of the concrete will not exceed 95 degrees F. at the time of placement. When the ambient reaches 90 degrees F. the concrete will be protected with moist covering.

(E) Concrete Reinforcement: All reinforcing steel will conform to ASTM A615. All welded wire fabric will conform to ASTM A185. All reinforcement will be new, free of dirt, oil, paint, grease, loose mill scale and loose or thick rust when placed. Details not shown of drawings or specified will be to ACI318. Steel reinforcement will be centered in the cross-sectional area of the walls and will have at least 11/4” of cover on the under surface of the floor. The maximum allowable variation for center-center spacing of reinforcing steel will be ½”. Full lengths of reinforcing steel will be used when possible. When splices are necessary on long runs, splices will be alternated from opposite sides of the components for adjacent steel bars. Lap bars #4 or smaller a minimum of 12”. Lap bars larger than #4 a minimum of 24 bar diameters. Reinforcing bars will be bent cold. No bars partially embedded in concrete will be field bent unless approved by the customer.

(F) Sealers and Curing Compounds - Curing compounds, if used, will be colorless, complying with ASTM C309, type I or 1-D. Weatherproofing sealer for exterior of building will be a clear water repellent penetrating sealer.

(G) Caulking, Grout, Adhesive and Sealer - Caulking service temperatures from -40 to +194 degrees Fahrenheit. Interior and exterior joints will be caulked with a paintable polyurethane sealant. Grout will be a non-shrink type and will be painted to match the color of surrounding concrete as nearly as possible. Cement base coating is formulated with a very fine aggregate system and is a built in bonding agent.

(H) Paint: All paints and materials will conform to all Federal specifications or be similar “top-of-the-line-components”. Paints will not contain more than .06 percent by weight of lead.

Type of paints for toilets:

(1) Inside concrete surfaces
- I Interior floors will be a chemical resistant urethane. The color will be gray.
- II Interior walls and ceilings will be a modified acrylic, water repellent penetrating stain. The color will be white followed by a clear acrylic anti-graffiti sealer.

(2) Metal surfaces both inside and out
- I DTM ALKYD

(3) Exterior concrete surfaces
I Exterior slab will be clear sealer
II Exterior walls and roof will be a water repellent penetrating stain in the same color as the walls or roof followed by a clear acrylic anti-graffiti sealer.

(I) Grab bars: Grab bars will be 18 gauge, type 304 stainless steel with 1-1/2" clearance. Grab bars will each be able to withstand 300 pound top loading.

(J) Toilet Paper Dispenser: Two (2) dispensers: will be constructed of ¼" thick, type 304 stainless steel. Dispensers will be capable of holding three (3) standard rolls of toilet paper each. Toilet paper holder fastening system will be able to withstand 300 pound top loading. Dispensers will be installed parallel to each other in a way for ease of operation.

(K) Steel Doors: Doors will be flush panel type 1-3/4" thick, minimum 16 gauge galvanized steel, top painted with DTM ALKYD. Door frames will be knockdown or welded type, single rabbet, minimum 16 gauge prime coated steel top painted with DTM ALKYD, width to suit wall thickness. Three (3) rubber door silencers will be provided on latch side of frame.

(L) Door Hinges: Door hinges will be 3 per door with dull chrome plating 4-1/2"x4-1/2", adjustable tension, and automatic-closing for each door.

(M) Lockset: Lockset will meet ANSI A156.2 Series 4000, Grade 1 cylindrical lockset for exterior door. Lever handle both inside and out. Either handle operates latch unless outside handle is locked by inside push-button. Push-button will automatically release when inside lever handle is turned or door is closed. Emergency slot on exterior so door can be unlocked from the outside with a coin, screwdriver and etc. Inside lever always active. U.S. 26D finish.

(N) Dead Bolt: Deadbolt will be a Lori Lock standard model with a double cylinder, 2 ¾" backset, and US26D finish. The cylinder will be a standard 11/8" Schlage Mortise cylinder with compression ring and 626 finish.

(O) Door Stop: Doorstop will be a dome style stop meeting ANSI 156.16.

(P) Double Coat Hook: Coat hook will be 304 stainless steel 16 gauge (1.5mm), formed construction with a satin finish and have 3/16"x 7/8" nail in anchor. Upper hook will extend at least 2-1/2" inches from the wall. Lower hook will extend at least 1-1/4" from the wall.

(Q) Door Sweep: Door sweep will be provided at the bottom of door and will be an adjustable brush type.

(R) Wall Vent: Vent cover will be 14 gauge 304 stainless steel painted with DTM and anchored into the concrete wall with high strength anti-rust tap con fasteners. The vent louver frame and louvers will be non-vision .1" extruded aluminum jet coat finish. Vent to come with insect screen. Cover to be recessed a minimum ¾" on exterior walls with a 45 degree bevel. Interior to be flush mounted. Wall vent will not protrude from the wall.

(S) Signs: Signs to have raised pictograms, letters and Braille to meet ADA. Interior to have "No Trash in Vault Sign". All signs inset a minimum of ¾" into wall with 45 degree bevel. All signs to be anchored into concrete with ¼" x ¾" concrete anchor nails.

(T) Windows and Vault Cleanout Cover

(1) Windows and cleanout cover frames will be constructed from steel.
(2) Window glazing will be 3/16" thick translucent pebble finished mar-resistant Lexan.
(3) Plate for vault cleanout cover will be ¼" thick diamond plate steel. Lid will be hinged and configured so that it can be locked with a padlock. A gasket will be provided around the entire perimeter of the lid to provide an airtight seal.
(4) Windows to have ¾" recess with 45 degree bevel.
(5) Windows frames to have vandal resistant fasteners.

(U) Vent Stack: Vent stack to be a minimum 12 inches in diameter and a minimum 3 feet higher than the roof peak. Vent stack shall include a Raptor Vent Screen furnished and installed, or other screen as applicable within vent fan.

(V) Vault Liner: The vault liner shall be made from a single sheet black ABS/750 virgin plastic and can hold up to 1,000 gallons of waste or 15,000 uses per vault. The initial sheet thickness shall be a minimum .375. Final stamped thickness shall be a minimum .060. The vault liner shall have molded dovetail embeds to attach the liner to concrete walls of the vault. The vault liner shall have two J-rails to attach the liner to the bottom of the vault. Vaults with ABS liner shall be warranted against leaks for a period of seven years.

(W) Riser: Riser will meet ADA and be a molded one piece HDPE Aquatuf®. Riser will be a smooth surface and have high impact resistance at extremely cold temperatures.

2.6 MANUFACTURE

(A) Mixing and Delivery of Concrete: Mixing and delivery of concrete will be in accordance with ASTM C94, section 10.6 through 10.9 with the following additions:
(1) Aggregate and water will be adjusted to compensate for differences in the saturated surface-dry condition.

(B) Placing and Consolidating Concrete: Concrete will be consolidated by the use of mechanical vibrators. Vibration will be sufficient to accomplish compaction but not to the point that segregation occurs.

(C) Finishing Concrete
(1) Interior floor and exterior slabs will be floated and troweled.
(2) All exterior building walls and exterior screen walls will be texture as specified.
(3) All exterior surfaces of the roof panels will be cast to simulate a wood shake roof. The underside of the overhang will have a smooth finish.

(D) Cracks and Patching: Cracks in concrete components which are judged to affect the structural integrity of the building will be rejected. Small holes, depressions and air voids will be patched with a suitable material. The patch will match the finish and texture of the surrounding surface. Patching will not be allowed on defective areas if the structural integrity of the building is affected.

(E) Curing and Hardening Concrete: Concrete surfaces will not be allowed to dry out from exposure to hot, dry weather during initial curing period.

2.7 FINISHING AND FABRICATION

(A) Structural Joints
(1) Wall components will be joined together with two welded plate pairs at each joint. Each weld plate will be 6" long and located one pair in the top quarter and one

pair in the bottom quarter of the seam. Weld plates will be anchored into the concrete panel and welded together with a continuous weld. The inside seams will be a paintable caulk. The outside seams will use a caulk in a coordinating building color or clear.

(2) Walls and roof will be joined with weld plates, 3"x6" at each building corner.

(3) The joint between the floor slab and walls will be joined with a grout mixture on the inside, a matching colored caulk on the outside and two weld plates 6” long per wall.

(B) Painting/Staining

(1) An appropriate curing time will be allowed before paint is applied to concrete.

(2) Some applications may require acid etching. A 30% solution of hydrochloric acid will be used, flushed with water and allowed to thoroughly air dry.

(3) Painting will not be done outside in cold, frosty or damp weather.

(4) Painting will not be done outside in winter unless the temperature is 50 degrees F. or higher.

(5) Painting will not be done in dusty areas.

(6) All surface voids to be filled prior to painting

(C) Schedule of finishes

(1) Inside concrete surfaces

I. Inside floors will be 1 coat of 1-part water based chemical resistant urethane.

II. Interior walls and ceilings will be 2 coats of a modified acrylic, water repellent penetrating stain, followed by 1 coat of clear sealer.

(2) Metal surfaces both inside and out

I. 2 coats of DTM ALKYD

(3) Exterior concrete surfaces

I. Exterior walls will be 2 coats of water repellent penetrating stain in the same color as the walls or roof followed by 1 coat of clear acrylic anti-graffiti sealer.

PART 3 - EXECUTION

3.1 DELIVERY AND HANDLING

(A) The building manufacturer shall coordinate the delivery and placement of the precast concrete toilet buildings to the locations shown on the drawings.

(B) Offload and Assembly

(1) The Contractor is responsible for unloading and assembling all components of the precast concrete vault toilet, and touch up of any damage or cracks prior to acceptance.

(2) The Contractor shall notify the Contracting Officer 10 days prior to the anticipated delivery date and 2 days (48 hours) prior to the exact date of delivery.

(3) Deliveries shall only be made between the hours of 8:00 a.m. and 4:30 p.m. (local time), Monday through Friday, unless otherwise approved by the Ordering Unit Contracting Officer.

3.2 INSTALLATION

(A) Scope of Work: Work specified under this section includes excavation, backfill and placement of precast concrete vault toilet.

(B) Materials

(1) Bedding material to be sand or 3/8” minus crushed or screened aggregate.

(2) Caulking between vault and toilet floor to be 1” x 1” Butyl tape designed specifically to bond precast concrete to precast concrete.

(C) Location: The new toilet with vault shall be installed at the location and orientation specified for each site in the contract, as approved by the COR on site.

(D) Access to Site: Delivery to site made on normal highway trucks and trailers.

(E) Excavation and Elevation

(1) Comply with all applicable OSHA standards for excavation.

(2) Excavate for the installation of the toilet vault. Allow for 2” leveling course beneath the vault. Stockpile topsoil in a separate pile at sites.

(3) Finish floor elevation shall be set to match the elevation specified for the location, measured at the front (entrance) of the exterior slab unless otherwise approved by the Contracting Officer’s Representative (COR). Ideally, the back of the building should be slightly higher to allow water to freely drain out of the toilet rooms. The contractor will install buildings with the floor elevation within a plus 0.05’ of the specified floor elevation.

(4) No excavation is to be left open more than seven (7) days unless otherwise approved by the COR.

(5) All excavations left open overnight are fenced with mire mesh or plastic mesh fence secured to steel posts all around the excavation.

(a) The bottom of the fence will follow the contour of the ground.

(b) Maximum spacing of steel posts is 10’.

(c) Minimum height of the fence is 36”.

(F) Backfill and Compaction

(1) Compact the natural ground at the bottom of the vault excavation with a minimum of three (3) passes with a whacker-type mechanical compactor or equivalent approved by the COR.

(2) Install sand or aggregate bedding material for leveling course. Compact leveling course with one (1) pass with a whacker-type mechanical tamper or equivalent approved by the COR.

(3) Set vault in place and check for level or appropriate slope. Backfill around structure. Use excavated material for backfill -- remove rocks larger than 6” in maximum dimension. Place material in maximum 8” lifts compacted with a minimum of two (2) passes with a whacker-type mechanical compactor or equivalent approved by the COR. Backfill to meet finished floor grade at 95% compaction.

(G) Finish Grading

(1) Spread excess excavated material from the vault around structure to match and blend with the existing site grading. Intended final grade is flush with the top of the front slab. Allow for placement of topsoil to reach that grade. Grade backfill away from structure at slopes specified in the drawings.

(2) Spread unneeded excavation material and oversized rocks in a designated area within 500' of the site. Approved location will be designated by the Forest Service within 5 business days of contractor request.

(H) Exhaust Pipe Installation: Attach top pipe with four (4) stainless steel screws or other approved method.

(I) Final installation includes removing rigging hardware, patching concrete, sealing joints, and completing all preparation necessary for the building to be open for public use.

***** END OF SPECIFICATION 13 40 00*****

DIVISION 31 - EARTHWORK

31 20 00 - Structural Excavation and Backfill

PART I - GENERAL

1.1 SCOPE

The work of this section consists of all scarifying, excavation, backfilling as **Shown on the Drawings** and herein specified.

1.2 QUALITY ASSURANCES

Use adequate size, capacity, and number of equipment and workers to accomplish the work of this Section in a timely manner.

1.3 SUBMITTALS

Comply with Specification 01 40 00 - Shop Drawings and Submittals.

1.4 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for work specified in this section. This work will be considered incidental to Section 13 40 00.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

(A) Structural fill will consist of a predominately granular material such as a creek run or pit run clayey sand and gravel, uniform soil classification GM,GC, SM, or SC.
  (1) Provide soil materials free from organic matter and deleterious substance, containing no rocks or lumps over six-inches in greatest dimension and with not more than fifteen (15) percent of the rocks or lumps larger than 2 $^{3}/_{8}$ inches in their greatest dimension
  (2) The top four (4) inches of structural fill will consist of gravel larger than that passing the No. 4 sieve and smaller than that retained on the ¾ inch sieve ($^{3}/_{4}$ inch x No. 4)

(B) Native backfill will consist of native materials excavated at the project site during constriction.

(C) Other Materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the **Contractor** subject to the approval of the **Contracting Officer**.

PART 3 - EXECUTION

3.1 SITE PREPARATION

(A) Strip top six (6) inches of soil and remove grass, roots and debris.

(B) Examine the areas and conditions under which work will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 UTILITIES

(A) Verify the location and depth of all existing utilities. Unless shown to be removed, protect active utility lines, as **Shown on the Drawings** or otherwise made known to the **Contractor** prior to excavating. If damaged, repair or replace at no additional cost to the **Government**.

(B) If active utility lines are encountered, and are not **Shown on the Drawings** or otherwise made known to the **Contractor**, promptly take necessary steps to assure that service is not interrupted.

(C) If service is interrupted as a result of work under this section, immediately restore service by repairing the damaged utility at no additional cost to the **Government**.

(D) If existing utilities are found to interfere with the permanent facilities being constructed under this section, immediately notify the **Contracting Officer** and secure further instructions. Do not proceed with permeant relocation of utilities until written instructions are received from the **Contracting Officer.**

3.3 PROCEDURES

(A) Protection of persons and property:
  (1) Barricade open holes and depressions occurring as part of the Work, and post warning lights on properly adjacent to or with public access.
  (2) Operate warning lights during hours from dusk to dawn each day and as otherwise required.
  (3) Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by the settlement, lateral movement, washout, and other hazards created by operations under this Section.
  (4) Safety will be the responsibility of the **Contractor** at all times.

(B) Dewatering:
  (1) Remove all water, including rain water, encountered during trench and sub-structure work to an approved location by pumps, drains, and other approved methods.
  (2) Keep excavations and site construction area free from water.
  (3) Maintain access to adjacent areas at all times.

(C) Follow STF Best Management Practices for Streamcourse and Aquatic Protection

(1) Install erosion control as needed for areas disturbed by project activities. Erosion control should be in place prior to periods of expected

precipitation.

(2) Prevent project generated materials (e.g. soil, asphalt, etc.) from entering waterbodies

(3) Remove all project generated debris from the project area and dispose of off NFS lands.

(D) Follow STF Best Management Practices for Equipment Refueling and Servicing

(1) Allow servicing and refueling of equipment only in designated areas that are outside of Riparian Conservation Areas.

(2) Report spills and initiate appropriate clean-up action in accordance with applicable State and Federal laws, rules, and regulations.

(3) Remove contaminated soils and other material from NFS lands and dispose of this material in a manner according to controlling regulations.

3.4 EXCAVATION

(A) Perform excavating of every type of material encountered within the limits of the work to the lines, grades, and elevations indicated and specified herein.
(B) The top eight (8) inches of subgrade will be removed and then replaced and compacted as herein specified.
(C) Excavated materials designated by the **Contracting Officer** as satisfactory will be transported to and placed in landscaped embankment areas or stockpiled (for future use on this project) at a site designated by the **Contracting Officer**.
(D) Excavated material designated by the **Contracting Officer** as unsuitable for use on this project will be dispersed on site.
(E) Excavation of rock:
(1) Where rocks boulders, granite, concrete or similar materials is encountered and where such material cannot be removed or excavated by conventional with moving or ripping equipment. Take required steps to proceed with the general grading operations of the work and remove or excavate such material by means which will neither cause additional cost to the **Government** nor endanger buildings or structures whether on or off the site.
(F) Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instructions from the **Contracting Officer**.
(G) Backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the **Contracting Officer**.

3.5 BACKFILLING

(A) Place structural fill in six (6) inch layers and compact as herein specified.
(B) Place landscape embankment along walls and areas shown so as to prevent damage to

the structure or drainage system.

(C) Backfill excavations as promptly as progress of the work permits, but not until completion of the following:
  (1) Acceptance of constriction below finish grade including, compaction and where applicable, damp proofing and waterproofing.
  (2) Inspecting, testing, approving and recording locations of underground utilities.
  (3) Removing trash and debris.

(D) Ground surface preparation:
  (1) Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious matter from ground surface prior to placement of sills.

3.6 COMPACTING

(A) Control soil compaction during construction to provide the percentage of density specified for each area as determined according to AASHTO T- 180, Method C.

(B) Provide not less than the following maximum density of soil materials compacted at optimum moisture content for the actual density of each layoff soil material in place and as approved by the **Contracting Officer**.
  (4) Subgrade: 90 percent of maximum density
  (5) Structure: 95 percent of maximum density.

(C) Moisture Control:
  (1) Where subgrade or layer of soil material must be moisture conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.
  (2) Remove and replace or scarify and air dry, spoil materials that are too wet to permit compacting to the specified density.
  (3) Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture density relation test approved by the **Contracting Officer**.

3.7 FIELD QUALITY CONTROL

(A) Secure the **Contracting Officer's** inspection and approval of subgrades and fill layers before subsequent construction is permitted thereon.

(B) The following compaction tests are expected by the **Government**:
  (1) At building pad at least four test per layer and four tests for subgrade
  (2) Other areas will be tested at a rate of two (2) test per layer and two (2) test for subgrade.

(C) If, in **Contracting Officer's** opinion, based on reports of testing subgrade or fills which have been placed are below specified density, provide additional compacting.

3.8 MAINTENANCE

(F) Protection of newly graded areas:

(1) Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
(2) Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.

(G) Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape and compact to the required density prior to further construction.

3.9 TEMPORARY FENCING

(A) All excavations left open overnight will be fenced unless otherwise approved in writing in advance by the **Contracting Officer**:
(1) The bottom of the fence will generally follow the contour of the ground.
(2) Maximum spacing of the steel fence posts will be ten (10) feet.
(3) Minimum height of the fence will be three (3) feet.
(4) A minimum of one exit ramp for small animals will be placed once ever fifty (50) of trench.

*****END OF SPECIFICATION 31 20 00*****

31 31 19 - Weed and Disease Prevention

PART 1 - GENERAL

1.1 DESCRIPTION

(A) This work consist of washing and treating construction equipment to remove dirt, mud, seeds, plants, and plant fragments from the equipment before the equipment is used on National Forest lands.

(B) Notify the **Contracting Officer** in writing at least five (5) days before moving any construction equipment onto National Forest System lands. Construction equipment does not include cars, pickup trucks, and other vehicles that regularly travel between the construction site and areas outside of National Forest lands.

1.2 MEASUREMENT AND PAYMENT

No separate payment will be made for work specified in this section. This work will be considered incidental to Section 01 70 00.

PART 2 - PRODUCTS

2.1 HIGH PRESSURE WASHING SYSTEM

The **Contractor** will use a washing system that utilizes high-pressure water to dislodge dirt, debris, and seeds from the equipment.

PART 3 - EXECUTION

3.1 WASHING

(A) Washing will be performed outside of the National Forest at a location pre-approved by the **Contracting Officer** seventy-two (72) hours in advanced that they will be washing the equipment, and provide the opportunity to monitor the washing and inspection. If the **Contracting Officer** is not present at the time the equipment is being washing, the **Contractor** will submit written verification that the work was performed and inspected.

(B) Wash the sides, tops and undercarriages of all construction equipment. Remove all soil, mud, (wet or dried), seeds, plants, plant fragments, dirt and debris that could contain seeds from the construction equipment. Light dust that does not contain sees is not of concern.

(C) Do not mix, soaps, detergents, or other chemicals, with the wash water.

3.2 INSPECTION

Contractor will inspect the washed construction equipment, including the undercarriage, to ensure that the washing removed the dirt, debris and seeds from the construction equipment. Rewash the construction equipment as necessary or as directed by the **Contracting Officer**.

3.1 ACCEPTANCE

Acceptance is based on visual inspection of the work for compliance with the contract and prevailing industry standards.

*****END OF SPECIFICATION 31 31 19*****

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 11 00 - Base Courses

PART 1 - GENERAL

1.1 SUMMARY

Furnish all labor, materials, equipment, facilities, transportation and services to complete all base course preparation, installation and related work as shown on the Drawings and/or specified herein.

Scope of Work: The general extent of the base course work is shown on the Drawings and may include, but is not necessarily limited to, the following:

Grading and compaction of subgrade soil for areas to receive pavement, structures, base material, etc.

Furnishing and placing of aggregate base material.

Related sections can include, but may not be limited to:

Section 31 20 00 – Structural Excavation and Backfill

Section 32 12 16 – Asphalt Concrete Paving and Base Material

1.2 REFERENCES AND REGULATORY REQUIREMENTS

(A) American Society for Testing and Materials (ASTM).

(B) Standard Specifications for Construction of Roads and Bridges on Federal Projects, FP-24.

(C) Drawings.

1.3 SUBMITTALS

(A) Conform to the requirements of Section 01 40 00 and/or applicable Division 1 and Division 2 Specifications, General Conditions, and Special Provisions.

(B) Submit material certificates of compliance and/or sieve analyses for all products and materials proposed to be used in work covered by this Section.

1.4 QUALITY ASSURANCE

Adjust all work performed that does not meet technical or design requirements, but make no deviations from the Contract Documents without specific and written acceptance by the CO.

1.5 PROJECT/SITE CONDITIONS

(A) Wet Conditions: No subgrade preparation or base material placement shall occur when excessively wet conditions exist in the opinion of the CO.

(B) Dry Conditions: Contractor shall provide dust control shall provide water to subgrades and base courses as necessary to achieve compaction goals.

1.6 DELIVERY, STORAGE, AND HANDLING

(A) Materials shall be stockpiled on site in locations that, in the opinion of the contractor, cause least interference with construction operations and as acceptable to the CO.
(B) Protect materials from segregation, contamination and wind and water erosion.

1.7 SEQUENCING AND SCHEDULING

Contractor shall schedule work so that installation of paving/surfacing occurs no later than five (5) working days after placement and proper compaction of base materials. Base materials left un-paved longer than this time period shall be subject to testing and re-compaction at the contractor's expense.

1.8 MEASUREMENT AND PAYMENT

Measurement is Designed Quantity. Payment of the amount bid under Pay Item 32 11 00 in the Schedule of Items will be made for satisfactory completion of all work required in this specification. Such amount will constitute full compensation for all work and incidentals.

Aggregate base placement for asphalt pathways will be considered incidental to Section 32 12 16.

Payment will be made under:

PAY ITEM	DESCRIPTION	METHOD OF MEASUREMENT	PAY UNIT
32 11 01	Aggregate Path	Designed Quantity	Lump Sum

PART 2 - PRODUCTS

2.1 MATERIALS

Where aggregate base is indicated on the Plans, aggregate base shall conform to the following specifications.

Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel. Material shall be free from organic matter and lumps or balls of clay. Do not furnish material that contains asbestos fibers. Gradation as follows:

Sieve	1"	¾"	4	30	200
Percent Passing	100	94-97	49-52	19-22	5.2-8

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION

Remove unsuitable subgrade material as necessary and replace with suitable material or aggregate base per the discretion of the CO.

3.2 BASE MATERIAL PLACEMENT

(A) Place and compact base material in 6-inch maximum lifts unless otherwise noted.
(B) Base material shall be moisture conditioned to between optimum and 3 percent above optimum prior to placement and compaction.

3.3 CLEAN-UP OF WORK AREA

The contractor shall remove and legally dispose of excess materials/spoils and debris from the job site on a daily basis.

3.4 PROTECTION OF FINISHED PRODUCT

The contractor shall provide lighted barricades, signs and other devices as necessary to prevent damage to finished base courses.

*****END OF SPECIFICATION 32 11 00*****

32 12 16 - Asphaltic Concrete Paving and Base Material

PART 1 - GENERAL

1.1 WORK INCLUDED

(A) Prepare sub-grade to receive base course.
(B) Place stabilizing base courses, work and compact.
(C) Prime base course, place asphalt pavement, apply seal coat.

1.2 RELATED WORK

Related sections can include, but may not be limited to:
(A) Section 31 20 00 – Structural Excavation and Backfill
(B) Section 32 11 00 – Base Courses

1.3 REFERENCES

(A) American Society for Testing and Materials (ASTM).
(B) Standard Specifications for Construction of Roads and Bridges on Federal Projects, FP-24.

1.4 SUBMITTALS

(A) The CO shall be provided with electronic copies of material certificates signed by the material producer and the Contractor, certifying that each material item complies with, or exceeds specified requirements.
(B) The Contractor shall furnish the CO a certified weight or load slip for each load of material used in the construction of the asphaltic concrete pavement.

1.5 TESTING AND INSPECTION

If compaction tests indicate that the stabilizing base course or asphalt paving do not meet Specifications, remove defective work, replace and retest at Contractor's expense.

1.6 PROJECT CONDITIONS

Asphaltic Concrete Paving: Asphaltic concrete surfaces shall be constructed only when ambient temperature is above 40 deg and when base is dry.

1.7 MEASUREMENT AND PAYMENT

Measurement is Designed Quantity. Payment of the amount bid under Pay Item 32 12 16 in the Schedule of Items will be made for satisfactory completion of all work required in this specification. Such amount will constitute full compensation for all work and incidentals.

Payment will be made under:

PAY ITEM	DESCRIPTION	METHOD OF MEASUREMENT	PAY UNIT

32 12 16	Asphalt Path	Designed Quantity	Lump Sum

PART 2 - PRODUCTS

2.1 PAVING MATERIALS

(A) Aggregate base shall conform to Section 32 11 00.
(B) Asphaltic Concrete Paving:
(1) Paving asphalt to be mixed with aggregate shall be steam refined asphalt, AR-4000, conforming to Section 92 of the Caltrans Standard Specifications.
(2) Aggregate shall be Type B aggregate as specified in Section 39 of the Caltrans Standard Specifications.
(3) Maximum aggregate size shall be as follows: The aggregate for the surface course shall conform to the grading for 1/2-inch Maximum, Medium;" "Contract Compliance" column as shown in Section 39 of Caltrans Standard Specifications. The structural section AC surface course shall be placed in 1-1/2 inches thick lifts.
(4) Liquid asphalt for prime coat shall be Grade SC-70 in conformance with Section 93 of the Caltrans Standard Specifications.
(5) Asphaltic emulsion for paint binder and fog seal coat shall be emulsified asphalt, Type SS-1h, conforming to Section 94 of the Caltrans Standard Specifications.

PART 3 - EXECUTION

3.1 PREPARATION

(A) The top 12 inches of subgrade shall be scarified and compacted to 95% relative compaction.
(B) A minimum depth of 4" aggregate base shall be placed and compacted to 95 percent as determined by ASTM D1557. Comply with Sections 26-1.04B and 26-1.05 of the Caltrans Standard Specifications. Redwood Header is required wherever asphalt is set adjacent to or through unpaved areas.

3.2 ASPHALTIC CONCRETE PAVING

(A) General:
(1) Asphaltic concrete shall be proportioned, mixed, placed, spread and compacted in conformance with Section 39 of Caltrans Standard Specifications.
(2) Before placing asphaltic concrete on an untreated base, a liquid asphalt prime coat shall be applied to the base course in conformance with Section 39 of Caltrans Standard Specifications. Prime coat shall be applied at the rate of 0.25 gallons per square yard.
(3) Spreading and compacting asphaltic concrete shall be performed in accordance with Section 39 of the Caltrans Standard Specifications.
(4) Compaction equipment shall meet the requirements of FP-03.

3.3 FIELD QUALITY CONTROL

(A) Aggregate Base: The surface of finished aggregate base shall vary by no more than an average of 0.05 feet above or below the grade shown on the drawings.

(B) Asphaltic Concrete Paving:

(1) The finished asphalt pavement, where not controlled by adjacent structures or features, shall not vary more than 0.05 feet above or below the planned grade; it shall be uniform and free of sharp breaks.

(2) The cross section of the finished pavement shall be free of ridges and valleys and shall not vary more than 0.03 feet above or below the theoretical section at any point on the cross section.

(3) The specified thickness of the finished pavement shall be the minimum acceptable.

(4) Conforms shall form a smooth, pond-free transition between existing and new pavement.

(C) Acceptance testing of the compacted bituminous mixture for surface and thickness tolerance will be as follows:

(1) Surface: Acceptance testing will be performed on the top surface. The surface will be tested by the CO with a 10-foot straightedge. The variation of the surface from the testing edge of the straightedge shall not deviate at any point more than 1/8-inch.

(2) Thickness: The total compacted thickness of the mixture shall not vary more than 1/4-inch less than or 1/2-inch greater than the specified thickness. The compacted thickness shall not be consistently below nor consistently above the specified thickness.

(3) The CO reserves the right to test areas that appear defective and require immediate correction.

3.4 CLEANUP

All sealed surfaces shall be left in a clean, neat, and workman like condition, and all construction waste, rubbish, and debris shall be removed from the Work site and disposed of in a lawful manner.

***** END OF SPECIFICATION 32 12 16*****

*****END OF SPECIFICATIONS*****