

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 101

PORTLAND CEMENT CONCRETE

1. In the Subsection **101.15 QUALITY ASSURANCE SAMPLING AND TESTING**, paragraph **101.15.2.2**, delete the first sentence and replace with the following:

At least one sample from each of the first three concrete loads delivered to the site shall be tested for slump, air content, and unit weight. One set of compressive strength test cylinders shall be obtained from one of these three loads at the direction of the Engineer. Beginning with the fourth load of concrete delivered to the project, one load from each sub-lot of ten (10) loads will be randomly selected for testing to include slump, air content, unit weight, cement content per cubic yard, and one set of compressive strength test cylinders. Sample requirements are subject to change at the discretion of the Engineer.

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 201

CLEARING AND GRUBBING

1. In the Subsection **201.1 GENERAL**, delete the second sentence and replace with the following:

Clearing and grubbing shall be performed in advance of the grading operations.

2. In the Subsection **201.4.1 CONSTRUCTION METHODS**, add the following:

Clearing and grubbing operations shall include stripping of the existing ground surface. Stripping shall be achieved only by cutting, i.e., ground depressions or narrow sections of tributary arroyos should not be inadvertently filled during the foundation preparation. The resulting area shall be cut to provide a uniform, relatively level surface.

3. In Subsection **201.5 LIMIT LINES**, add the following:

Unless otherwise approved by the Engineer, limits of clearing & grubbing shall not exceed slope limits as shown with finished grade contours on plans.

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 204

FILL CONSTRUCTION

1. Delete this section in its entirety and replace with Supplemental Technical Specification **Section 203, EXCAVATION, BORROW AND FILL.**

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 203

EXCAVATION, BORROW, AND FILL

203.1 GENERAL

Excavation, borrow, and fill shall consist of all earthwork operations involved in grading and construction in accordance with the plans and specifications, except for excavation and backfill for structures; excavation and backfill for trenching; and any other earthwork operations separately designated.

203.2 REFERENCES

203.2.1 This section incorporates the following publications by reference:

ASTM D-1557
ASTM D-422
ASTM D-4318
ASTM D-6938

This publication: Section 201
Section 203
Section 204
Section 1506

203.3 MATERIAL CLASSIFICATIONS

203.3.1 UNSUITABLE MATERIAL

Unsuitable materials shall include all material that contains debris, roots, organic matter, stones or boulders too large to be used in the intended construction, or other materials that are determined by the Engineer to be unsuitable. Otherwise suitable materials which are unsuitable due to excess moisture content will not be classified as unsuitable material unless it cannot be dried by manipulation, aeration or blending with other materials satisfactorily as determined by the Engineer.

Material that is unsuitable for the intended use shall be excavated and removed from the site or otherwise disposed of as approved by the Engineer. Unsuitable material shall be disposed in accordance with environmental requirements and as approved by the Project Manager.

The removal and disposal of such unsuitable material will be paid for as excavation, removal and disposal for the quantities involved.

203.3.2 FILL MATERIAL

All fill material shall be free of vegetation and debris. Clods or hard lumps of earth of 6 inches in greatest dimension shall be broken up. Fill materials shall be free of vegetation and debris and contain no rocks larger than 3 inches. All fill and backfill material, including selection and blending of material, shall be subject to approval by the Geotechnical Engineer. All fill material shall conform to the requirements for Structural Fill as outlined below.

203.3.3 STRUCTURAL FILL AND BACKFILL

Structural fill and backfill shall consist of material excavated from on-site or Borrow Material that meets the requirements described in this section. The blended excavated site soils from within the area will be generally suitable for use as structural fill. Blending of soils shall be considered incidental to the Work and no separate payment will be made for this effort. Gradation of the fill material, as determined in accordance with ASTM D-422, shall be as follows:

Sieve Size (Square Openings)	Percent Passing (by Weight)
3 Inch	100
No. 4	60-100
No. 200	5-40

All structural fill shall be blended as necessary to produce a homogeneous material. The plasticity index of the structural fill shall be no greater than 15 when tested in accordance with ASTM D-4318.

203.3.4 BORROW MATERIAL

Borrow material is defined as material obtained from an approved borrow source to be used as structural fill material for construction. If borrow material is required, the Contractor shall identify a borrow site and tests will be performed to verify compliance of the material with structural fill requirements per this specification. The Contractor shall not import any borrow material prior to verification that material meets the requirements contained herein and he has received approval to import the material by the Owner.

203.3.5 SURPLUS MATERIAL

The Contractor shall make all arrangements for disposal of surplus material in accordance with environmental requirements and as approved by the Project Manager. If the material is disposed of on-site, the Contractor shall place material in locations as designated by the Owner. Do not remove materials from the project limits without the approval of the Owner. The Contractor shall satisfy himself that there is sufficient material available for the completion all items requiring fill material before disposing of any indicated surplus material inside or outside of the project area. Any shortage of material caused by premature disposal of surplus material by the Contractor shall be replaced by the Contractor and no payment will be made for such replacement.

203.4 CONSTRUCTION REQUIREMENTS

203.4.1 GENERAL

Contractor shall perform necessary clearing, grubbing and stripping in accordance with Section 201 of the Specifications, "Clearing and Grubbing", prior to any excavation, grading, or other earthwork operations. Excavation, fill construction and backfill shall be finished to reasonably smooth and uniform surfaces.

All slopes and cuts should be made in accordance with CFR 29 Part 1926 Subpart P, and all other applicable regulations.

203.4.2 EXCAVATION

Excavation shall consist of the removal of earth involved in grading and construction according to the plans, except other excavations separately designated.

Temporary construction excavations shall be maintained at slopes of 1.5 to 1 (horizontal to vertical) or flatter. Surcharge loads including construction traffic and excavated spoil materials shall be maintained at least 15 feet from the crest of any excavation slope. Surface water shall be routed such that it does not flow down the face of the excavation slopes. Where insufficient space exists for open cut excavations, a shoring system will be required. All required shoring systems shall be considered incidental to the cost of excavation and no additional payment will be made for this item. All excavations shall comply with all applicable safety regulations.

203.4.3 FILL CONSTRUCTION

Fill construction shall consist of constructing embankments, the placing and compacting of approved material within areas where unsuitable material has been removed; and the placing and compacting of suitable materials in holes, pits, and other depressions.

203.4.4 PLACING AND COMPACTING

Fill or backfill, consisting of soil approved by the geotechnical engineer, should be placed in controlled compacted layers not exceeding 8 inches (compacted) with approved compaction equipment. All fill material should be blended as necessary to produce a homogeneous fill. The fill should be raised uniformly and should be benched into the native soils. All compaction should be accomplished to a minimum of 95 percent of maximum dry density as determined in accordance with ASTM D-1557. No lifts of high permeability material or material differing substantially from the lift below shall be permitted.

At locations where it would be impractical to use mobile power compacting equipment, fill layers shall be compacted to the specified requirements by any approved method that will obtain the specified compaction.

203.5 TESTING

Tests for degree of compaction should be determined in accordance with ASTM D-1556 or ASTM D-6938.

Continuous, full time observation and field tests should be conducted during fill and backfill placement by a representative of the Engineer to assist the contractor in evaluating the required degree of compaction. If less than the required compaction is required, additional compaction effort should be made with adjustment of the moisture content as necessary until 95 percent compaction is obtained.

203.6 MEASUREMENT AND PAYMENT

203.6.1 EXCAVATION

Payment will be made on the unit price per cubic yard for unclassified excavation as provided in the Unit Price Bid Proposal. Payment will include the cost for all excavation, removal, storage and disposal of unsuitable material, hauling of surplus material to the designated location(s), and hauling of select material within the construction site. No payment will be made for excavation of stock piled materials, structural excavation of previously placed materials and over depth cuts. No payment will be made for shrink or swell. Excavation beyond the authorized cross section will not be included in measurement or payment.

203.6.2 BORROW

Borrow material will be measured by the cubic yard in place after compaction. Field topographic surveys, as described in Supplemental Technical Specification 1506 "Construction Staking", will be used to determine in-place quantities.

Payment will be made on the unit price per cubic yard for Borrow. Payment will include excavation, haul, moisture conditioning, required blending of soils, placement, compaction, and other related work.

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 1012

NATIVE GRASS SEEDING

1. In subsection **1012.4 MATERIALS** delete paragraphs **1012.4.1.1** and **1012.4.1.2** in their entirety and replace with the following:

GrassSeedMix shall include the following species and rates:

Indian Rice Grass:	5 lbs / acre
Galleta:	5 lbs / acre
Sideoats Gramma:	5 lbs / acre
Blue Gramma	5 lbs / acre
Sand Dropseed:	5 lbs / acre

Total grass seed mix application rate at 25.0 lbs / acre

WildflowerSeedMix shall include the following species and rates:

Globemallow	1 lb / acre
Purple Aster	1 lb / acre
Blue Flax	1 lb / acre
Mexican Hat	1 lb / acre
Blanket Flower	1 lb / acre

Total wildflower seed mix application rate at 5.0 lbs / acre

Seed rate is given in pounds of pure live seed (P.L.S.) per acre.

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 1503

MOBILIZATION

621.1 DESCRIPTION

This work shall consist of preparatory and final work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and, for all other work and operations which must be performed or costs incurred prior to beginning work on the project.

621.2 MOBILIZATION ADMINISTRATION REQUIREMENTS

621.2.1 DEFINITIONS

The following definitions shall apply:

- a) Total original contract amount shall mean the total amount bid as compensation for the contract.
- b) Total original contract amount less mobilization and demobilization shall mean the total amount bid as compensation for the contract less the amounts bid for mobilization.

621.2.2 GENERAL

It is the intent of this specification to provide for the Contractor to:

- a) Receive 100% of the amount bid for mobilization by the time the Contractor has performed 10% of the total original contract amount bid less the amount bid for mobilization.

621.2.3 PAYMENT PROCEDURES FOR MOBILIZATION

The following will apply in effecting mobilization payments:

- a) When the Contractor is eligible for payment of less than 5% of the total original contract amount bid less mobilization, the Contractor will be paid 25% of the amount bid for mobilization.
- b) When the Contractor is eligible for payment of from 5% to less than 10% of the total original amount bid less mobilization, the Contractor will be paid 50% of the amount bid for mobilization minus any mobilization amount already paid.
- c) When the Contractor is eligible for payment of 10% or more of the total original contract amount less mobilization, the Contractor will be paid 100% of the amount bid for mobilization minus any mobilization amount already paid.

621.2.4 PAYMENT CALCULATIONS

P_M	=	Mobilization Payment
M	=	Total amount bid for Mobilization
f_M	=	Mobilization payment percentage factor
	=	0.25, or 0.50, or 1.0, as applicable
P_M	=	M x f_M

EXAMPLE 1
MOBILIZATION

Total Original Contract Amount Bid	\$110,000
Amount Bid for Mobilization	\$ 5,000
Total Original Contract Amount Less Mobilization	\$105,000

Percent of Work Completed	f _M	M	P _M
<5% of \$102,000	0.25	x 5,000	= \$1,250
>5% to <10% of \$102,000	0.50	x 5,000	= \$2,500*
≥10% of \$102,000	1.00	x 5,000	= \$5,000*
*minus previously paid amounts			

621.3 METHOD OF MEASUREMENT

Mobilization will be measured by lump sum unit.

621.4 BASIS OF PAYMENT

Mobilization will be paid for at the contract price per Mobilization Bid Item.

No additional payments will be made for demobilization and remobilization due to shutdowns or suspensions of the work or for other mobilization and demobilization activities required to complete the contract.

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 1504

NPDES COMPLIANCE

630.1 SCOPE OF WORK

The work under this section includes compliance with the U.S. Environmental Protection Agency (EPA), National Pollutant Discharge Elimination System (NPDES) Regulations for Storm Water Discharges from construction sites. A Storm Water Pollution Prevention Plan (SWPPP) has been developed for this project by the Owner. This work consists of implementing and maintaining this plan to control erosion, pollution, sediment and runoff during the construction of the project.

630.2 MEASUREMENT AND PAYMENT

630.2.1 UNIT PRICE BID PROPOSALS: For Unit Price Bid Proposals, NPDES compliance shall be paid for as follows:

630.2.1.1 Fifteen (15) percent of the Lump Sum unit price amount shall be paid after the Contractor has completed an EPA Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under a NPDES General Permit, Form 3510-9, or a Low Erosivity Waiver (LEW) form, if applicable. A copy of the NOI or LEW form must be delivered to the Owner and the original filed with the EPA. All required erosion control measures sufficient to begin construction must also be in place. This will be defined in the plan specifications and/or the SWPPP.

630.2.1.2 Payment for an additional sixty (60) percent of the Lump Sum unit price amount shall be prorated based on the Actual Percent Complete on the *Application for Payment* as approved by the Architect, Engineer or Landscape Architect. For example, if the Contractor is 20% complete, the contractor can take the 20% (0.2) and multiply it by half of the Lump Sum unit price amount, and receive that portion.

In order to receive payments, the field inspection forms must be sent in with the *Application for Payment* each month. If there are deficiencies maintaining or implementing the SWPPP and its Best Management Practices (BMPs), the payment will be withheld until the deficiencies are corrected.

630.2.1.3 The remaining twenty-five (25) percent of the Lump Sum unit price amount will be based on the completion of an EPA Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Construction Activity, Form 3510-13 and BMP removal. A copy of the NOT must be delivered to the Owner and the original filed with the EPA. BMPs must be removed as defined in the plan specifications or SWPPP. This is done in case there are some BMPs that must remain until final stabilization is met, and that there are no more NPDES concerns for the Contractor.

END OF SECTION

SUPPLEMENTAL TECHNICAL SPECIFICATION

SECTION 1505

CONTROL OF STORM WATER AND NUISANCE FLOW

1505.1 DESCRIPTION

This work covers the control of storm and nuisance flow water in the vicinity of this project.

1505.2 CONSTRUCTION REQUIREMENTS

All permanent work shall be performed in areas free from water. The CONTRACTOR shall construct and maintain all dikes and drainage ditches necessary for the elimination of water from work areas and shall furnish, install, maintain, and operate all necessary pumping and other dewatering equipment required for dewatering the various work areas. Two (2) types of flow can be expected;

- 1) Continuous or intermittent flow through the main arroyo;
- 2) Local sheet flow from adjacent properties or adjacent streets.

The CONTRACTOR is responsible for adequacy of the scheme or plans, or for furnishing all equipment, labor and materials necessary for dewatering the work areas and breaking up and removing such ice or snow as may have formed or settled in the work area. The CONTRACTOR shall be fully responsible for all dewatering operations, and the cost of all dewatering operations shall be included in the lump sum price for this work. The CONTRACTOR shall also be responsible for removal of any sediment deposited by storm and nuisance water, and the cost of sediment removal work shall be included in the lump sum price for this work.

In the event that storm flow, snowmelt or other water flows overtop the Contractor's diversion method, the Contractor will be responsible for any and all damage, including damage to the existing channel and any damage to new work and is responsible for immediate resolution and repair in a manner acceptable to SSACFCA.

Diversion methods may be by use of sand bag diversion channels, sand bag dams, pumping or piping around or over the work areas, or any method or combination.

1505.3 BASIS OF PAYMENT

The bid item for this effort will be on a Lump Sum (LS) basis. Providing and maintaining the diversion and care of water, regardless of the amount of water actually handled, shall be paid for as follows:

Payment will be made as a percentage of the dollar amount of work completed to date minus the Mobilization bid item.

<u>Pay Item</u>	<u>Pay Unit</u>
Control of Storm Water and Nuisance Flow	LS

END OF SECTION

SECTION 1506

CONSTRUCTION STAKING

1506.1 DESCRIPTION

This work consists of construction staking lines, grades, and layouts by the Contractor in accordance with the plans and specifications and as directed by the Engineer for the control and completion of the project.

1506.2 MATERIALS

The Contractor shall furnish all stakes, templates, straightedges, surveying equipment and other devices necessary for establishing, checking, marking, and maintaining points, including P.I.'s, P.C.'s, P.T.'s, and lines, grades and layouts. As directed by the Engineer, points shall be referenced so that they may later be re-established.

1506.3 CONSTRUCTION REQUIREMENTS

Local Survey Control has been set for vertical and horizontal control throughout the construction area. The on-site SSCAFCA monument shall constitute the field control by and in accordance with which the Contractor shall establish other necessary controls and perform the work.

The Contractor shall be responsible for all other control, slope stakes, cut stakes, offset stakes, bench marks, blue tops or other staking necessary for proper execution of the work, or as requested by the Project Manager, to assure compliance with the plans.

1506.4 CONSTRUCTION SURVEYS

The contractor shall obtain and pay for the services of a Professional Surveyor registered in the State of New Mexico to perform surveys consisting of the following phases:

- Phase 1: A topographic survey, with a contour resolution of 1-ft or greater, to determine the Borrow Area existing ground elevations prior to construction, after clearing and grubbing and after removal of trash and debris. Data collected shall be of sufficient detail, including all breaks in the terrain, to be able to create an original ground digital terrain model (DTM). The Borrow Area "original ground" DTM shall be submitted to the Engineer for review and acceptance prior to proceeding with excavation and export of material. Survey data must be sufficient to determine earthwork quantities.
- Phase 2: A topographic survey, with a contour resolution of 1-ft or greater, to determine the Borrow Area finished ground elevations post-construction, after all required borrow material is removed. Data collected shall be of sufficient detail, including all breaks in the terrain, to be able to create a finished ground digital terrain model (DTM). The Borrow Area "finished ground" DTM shall be submitted to the Engineer for review and acceptance prior to payment for "Borrow" Bid Item. Survey data must be sufficient to determine earthwork quantities.
- Phase 3: A topographic survey, with a contour resolution of 1-ft or greater, will be completed for the project site (excluding borrow area) after construction to demonstrate compliance with the design grades, structure elevations, inverts, alignments/profiles, etc. shown on the plan set. Phase 3 Survey will also include the update and completion of as-built drawings for the project. It is the responsibility of the contractor to coordinate with the surveyor on a regular basis to provide as-built information to incorporate in the survey.

All surveys must be certified by the Professional Surveyor and include complete documentation. Borrow Area surveys (Phases 1 and 2) must be used by the Professional Surveyor to compute the quantity of excavation, subject to the provisions for measurement in Section 203. Volume shall be based on the "average end area" computation. All computations of excavation must be submitted to the Engineer in sufficient detail. This submittal shall be such that methods and computations can be fully verified and are subject to approval by the Engineer. The Contractor shall also submit the electronic survey point files, including break lines, in a format compatible with AutoCAD Civil3D such that the Engineer can use the data for verification of cut/fill quantities.

At the end of the Project, the Engineer will transcribe the as-built information provided by the Contractor onto the mylar record drawing. The Contractor's Professional Surveyor will be required to stamp, sign and certify the information shown on the mylar As-Built drawings.

1506.5 METHOD OF MEASUREMENT

Submit a construction-staking schedule of values as part of Construction Progress Meetings or monthly progress schedule to the Project Manager for approval.

1506.6 BASIS OF PAYMENT

Pay Item	Pay Unit
Construction Staking	Lump Sum

SSCAFCA will make partial payments in accordance with the approved construction-staking schedule of values.

END OF SECTION