SPECIAL PROVISIONS

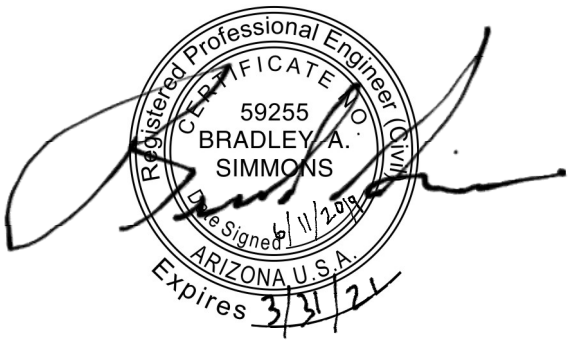
FOR

ROBBS ROAD IMPROVEMENT PROJECT
(KANSAS SETTLEMENT ROAD TO WAYWARD WINDS)

PROJECT # GR005
(IFB) – 20-09-ENG-01

COCHISE COUNTY

COCHISE COUNTY ENGINEERING & NATURAL RESOURCES



104 SCOPE OF WORK

ADD the following:

Intent and Purpose

The work performed and materials used in this project shall be in accordance with Cochise County Road Design & Construction Standards & Specifications For Public Improvements (County Specifications (CCS) Section D Typical Sections & Details, and Section E; Standard Specifications), the Uniform Standard Specifications and Details for Public Works Construction, sponsored and distributed by the Maricopa Association of Governments (MAG). The intent and purpose of these Special Provisions is to interpret, correct, modify, and supplement the CCS and MAG Specifications to the extent and in the manner specifically referred to, and to provide additional Specifications. The Standard Specifications, together with these Special Provisions, shall constitute the Contract Specifications for this project.

An electronic copy of the CCS can be found at the following link:
https://www.cochise.az.gov/sites/default/files/highway_and_floodplain/CochiseCountyRoadDesignConstructionStandardsSpecificationsforPublicImprovements2017.pdf

Project Description and Location

The proposed work for this project is to improve Robbs Road, a rural minor, from Kansas Settlement Road east to Wayward Winds Road for a total distance of 3 miles. The intersection of Robbs Road and Kansas Settlement Road is approximately 12 miles south of the City of Willcox, AZ.

Robbs Road is a 20 foot dirt road. The work will consist of constructing a 28 foot double bituminous surface treated (DBST) road surface, the installation of drainage improvements, the installation of driveways, all associated surveying and grading, traffic control, signing and striping, and other associated work as specified on the plans.

It shall be the Contractor's responsibility to complete the work specified here within and supply any incidental services or accessories necessary to make the work complete and perfect in all respects and ready for operation. Any apparatus, appliance, material, or work not mentioned in the Specifications, or vice versa, or any incidental appurtenances necessary for the system to operate as to the intent of these Specifications, even if not particularly specified, shall be included in the bid price and furnished, delivered, and installed by the Contractor without additional expense to Cochise County.

105 CONTROL OF WORK

Cochise County Road Design & Construction Standards & Specifications for Public Improvements (2017)

Section 105.4 Coordination of Plans and Specifications

ADD the following:

105.4.1 Applicable Standards

Throughout the contract documents, reference is made to codes and standards, which establish quality, type of workmanship, materials, and establish methods for testing and reporting of pertinent characteristics. Where materials or workmanship are required by the contract documents to meet or exceed the specific code or standard, it is the Contractor's responsibility to provide materials and workmanship complying with the contract documents. Specific naming of the codes or standards occurs on the working drawings and sections of the Specifications. It is the Contractor's responsibility to verify the requirements of the specific codes and standards and to produce items which meet or exceed the specified requirements.

The Project Engineer reserves the right to reject any Contractor installed items which fail to meet the specified minimum requirements, or to accept non-complying items, subject to an adjustment of the contract sum.

The work shall also conform to such drawings, including explanation of details or minor modifications, as may be furnished from time to time during construction, including such minor modifications as the Project Engineer may consider necessary on account of conditions found during the prosecution of the work. Scaled dimensions shall not be used in the construction of the work.

105.4.4 Proposal Quantities

It is expressly understood and agreed by the parties hereto that the quantities of the various classes of work to be done and material to be furnished under this Contract, which have been estimated as stated in the Bid Schedule, are only approximate and are to be used SOLELY for the purpose of comparing, on a consistent basis, the bids offered for the work under this Contract. The Contractor further agrees that the County shall not be held responsible if any of the quantities are found incorrect; and the Contractor will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission, or misstatement is found to occur in the estimated quantities, the

same shall not invalidate this Contract or release the Contractor from the execution and completion of the whole or any part of the work in accordance with the Project Specifications and Contract Documents and the Construction Plans herein mentioned, or for the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation except as may be provided for in this Contract.

105.5 Cooperation of Contractor

ADD the following:

The Contractor is required to meet all current, and applicable regulations of the Occupational Safety and Health Administration. The Contractor shall bear full responsibility for compliance with all applicable Federal, State, and local laws and regulations.

105.6 Cooperation with Utilities

ADD the following:

Whenever any work is scheduled which may affect a utility, the Contractor will be required to give the respective utility Owner sufficient advance notice so that the Owner may provide a representative to prevent damage to the utility. The following utilities are known to have facilities in the area of the construction:

Sulphur Springs Valley Electric Cooperative, Inc. (Electric)
CenturyLink (Telephone)
Southwest Gas Corporation (Gas)

Utility locations shown on the plans are approximate, and all utilities are not necessarily shown. The possibility of conflicts with existing utilities in service exists, although they are not anticipated to be in conflict. All work at or in close proximity to said lines shall be performed in accordance with all Federal, State, and local laws and regulations, including but not limited to:

(1) Arizona law regarding "High Voltage Power Lines and Safety Restrictions" (A.R.S. 40-360.41-.45).
(2) The Occupational Safety and Health Administration.
(3) The National Electric Safety Code.

It is noted, that there are overhead power and communication lines within the project area. The Contractor shall contact Blue Stake and provide written notice to the utility owner a minimum of 14 calendar days in advance of any need for overhead protection. The contractor will be responsible for protection of utilities facilities.

Section 105.8 Construction Stakes, Lines and Grades

REMOVE in its entirety and REPLACE with the following:

The County will set or provide the information for the vertical and horizontal control used for the design of County projects. The Contractor shall be responsible for all construction staking. Blue top control shall be set to assure conformance to grade longitudinally and transversely.

The minimum construction staking shall consist of the following:

(A) Right-of-Way lines at 250 ft. intervals for clearing, fencing, and control of Contractor's operations.
(B) Slope stakes, or rough grade staking shall be offset from the edge of the embankment at 100 ft. intervals.
(C) Blue tops in subgrade at centerline and edge of pavement at 100 ft. intervals except on curves with all horizontal and vertical curves staked at 50 ft. intervals.
(D) Blue tops on aggregate base course at centerline, edge of pavement, and ¼ points, when necessary, at 50 ft. intervals with all horizontal and vertical curves staked at 25 ft. intervals.
(E) Catch basin stakes shall be set at an appropriate offset to the center of the structure with cuts or fills shown to the top of grate.
(F) Grade and line stakes for all structures, pipe lines, culverts, and ditches.
(G) Straddle points for permanent monuments at all PLSS corners landing the in the right-of-way and at Points of Curvature (PC) and Points of Tangency (PT) of curves.

Payment for survey shall be made at the lump sum bid price and shall include all materials, labor, equipment, maintenance, and any incidentals thereto, in order to complete the work in accordance with the Construction Drawings and Specifications for this project.

106 CONTROL OF MATERIALS

Section 106.1 Source of Materials and Quality

ADD the following:

On all questions concerning the acceptability of materials, machinery, and classification of material, execution of the work, conflicting interest of Contractors performing related work, and the determination of costs, the decision of the County Purchasing Manager shall be final and binding upon all parties, based upon review of justification and recommendation of the Project Engineer and/or the Project Inspector.

Materials used on this project shall meet all quality requirements of the Contract. In order to expedite the inspection and testing of materials, the Contractor shall notify the Project Engineer of the proposed source(s) of supply before delivery is started. If it is found after trial that sources of supply for previously approved materials do not provide specified products, the Contractor shall furnish materials from another approved source, pay for any failed tests on previous material, and pay any additional costs for testing to approve another source all at no additional cost to the County.

All materials to be incorporated into the work shall be subject to sampling, testing, and approval by the County. The Project Engineer, or his designated agent, shall select samples of materials proposed by the Contractor to be used for the project. It is understood that the County reserves the right to retest all materials, prior to their use in the project, upon delivery. All materials and/or equipment shall be handled in such a manner as to preserve their quality and fitness for the work.

Additional tests required due to failure of the initial or normal test(s) or any tests that the Contractor feels are necessary for the proper completion of their work, shall be paid for by the Contractor. Any testing not directly requested and location specified by the County shall also be paid by the Contractor. The Project Engineer, or his designated representative, shall indicate when and where all tests shall be taken. The Project Engineer shall approve the laboratory which will accomplish all materials testing. The Contractor shall be responsible for any standby time once the testing technician has been scheduled and is on the job site.

The procedures and methods used to sample the test materials shall be determined by the Project Engineer. Unless otherwise specified, samples and tests shall be performed in accordance with either the standard methods of AASHTO, ASTM, or ADOT, which were in effect and published at the time of advertising for bids.

107.2.1.2 NOI SUBMITTAL

REPLACE ADEQ's Website with the following:

https://is.azdeq.gov/authenticationendpoint/login.do?sessionDataKey=842ec5f7-a43a-4803-bfff-9f7253f70b36&relyingParty=mydeq&type=samlsso&sp=mydeq&isSaaSApp=false&authenticators=BasicAuthenticator:LOCAL

ADD the following:

Section 107.6.5 Seeding:

The work under this item shall consist of furnishing all materials, preparing the soil, applying seed, and establishing the seeded areas.

Areas to be seeded are those disturbed or unvegetated areas listed herein, shown on the plans, called for in the contractor's erosion control plan, or designated by the Project Engineer.

Seeding shall be accomplished in two stages. The first stage shall consist of tillage; furnishing and applying compost, chemical fertilizer, and sulfur; furnishing and planting the contract-specified seed mix; and furnishing, applying and affixing final mulch cover. The second stage, beginning after the first stage has been accepted by the Project Engineer, shall be a 60 calendar-day period during which time the contractor shall be responsible for maintaining and stabilizing the seeded and mulched areas, and restoring damaged or eroded areas.

Seeding used as part of a SWPPP shall be completed before the end of the contract time, or sooner as required in the SWPPP. The 60 calendar day maintenance period is not included in the 125 calendar day construction time.

Appropriate documentation, as specified below, shall be submitted to the Project Engineer a minimum of 30 calendar days before the start of a scheduled seeding activity. No materials shall be delivered to the site until the documentation has been approved by the Project Engineer.

Unless otherwise specified, Certificates of Compliance shall be provided for all materials.

The contractor shall also provide test from accredited laboratories for all materials, as specified herein. Should the contractor perform its own testing, such test results shall also be provided to the Project Engineer.

(a) General Requirements:

The species, variety, and strain of seed (designated elsewhere herein as contract-specified seed) shall be as shown on the plans or as specified herein. The contract-specified seed shall be obtained from seed suppliers through harvesting of wildland collections, or field-grown seeds grown prior to or during the contract period.

Within 30 calendar days after the award of contract, the contractor shall submit the name of the seeding subcontractor to be used, along with written confirmation from seed suppliers and collectors, on their letterhead, that the

source(s) for the contract-specified seed has been secured. If any of the contract-specified seed is expected to be unavailable prior to the time specified for seeding the contractor shall notify the Project Engineer at this same time.

The seed shall be delivered to the project site unmixed in standard, sealed, undamaged containers for each seed species. Each container shall be labeled in accordance with the appropriate provisions of the Arizona Revised Statutes and the U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Labels shall indicate the variety or strain of seed, the percentage of germination, purity and weed content, the date of analysis which shall not be more than nine months prior to the delivery date, and testing information. A Certificate of Analysis from an accredited seed-testing laboratory shall accompany each container of seed.

Unless otherwise approved by the Project Engineer, weed content of the contract-specified seed mix shall not exceed 0.5 percent.

The contractor shall provide all seed tag labels to the Project Engineer. No payment will be made for seed unless tag labels from all seed to be used on the project have been submitted as specified.

The contractor shall store seed under dry conditions, at temperatures of between 35 °F and 120 °F, and out of direct sunlight. Prior to using the seed, the contractor shall provide a certification letter to the Project Engineer that the seed was stored as specified herein.

Legume seed shall be inoculated with appropriate bacteria cultures approved by the Project Engineer, in accordance with the culture manufacturer's instructions.

Tetrazolium staining shall be acceptable to test for germination and hard seed. Cut or fill testing will not be allowed. As directed by the Project Engineer, seeds with an expiration date past the acceptable test date or not meeting the specified conditions for storage shall be retested by the contractor. The Project Engineer may perform random sampling of seeds throughout the project. Mixing of the specified seed at the project site shall be under the supervision of the Project Engineer.

Use the following SEED LIST & MIX:

SEED LIST & MIX		
COMMON NAME	BOTANICAL NAME	PERCENTAGE
Sand Dropseed	Sporobo/us cryptandrus	30
Green Sprangletop	Leptochloa Dubia	20
3-Awn	Aristida Purpurea	15
AZ Cottontop	Digitaria Californica	10
Plains Bristlegrass	Setaria Macrostachya	10
Desert Marigold	BaHeya Multiradiata	5
Globe Mallow	Sphaeraiceae Ambiqua	5
4-Wing Saltbush	Atriplex canescens	5
	Total	100
	Application Rate	21 lbs/acre

Seed Substitution:

No substitution of the contract-specified seed will be allowed unless evidence is submitted documenting that the contractor has made a diligent effort to obtain the contract-specified seed from either seed suppliers or collectors, and that the contract-specified seed will not become available prior to the time specified for seeding in the contractor's approved construction schedule.

Should a substitution of the contract-specified seed be requested and the contractor's documentation is approved by the Project Engineer, Cochise County's Engineering & Natural Resources Department will specify an alternate seed within five working days of the Project Engineer's approval of the contractor's documentation. The alternate seed will only be allowed when there is an insufficient quantity of the contract-specified seed, as determined in the previous two paragraphs, for the areas to be seeded as called for herein or as required for erosion control. The contractor shall obtain and apply the alternate seed, as required, to all such remaining areas. Unless otherwise approved by the Project Engineer, the approved alternate seed will only be allowed until such time that contract-specified seed meeting the availability and price requirements specified herein can be provided.

No payment will be made for areas seeded with unapproved seed.

Tacking Agent:

Tacking agent shall be a naturally occurring organic compound, and shall be non-toxic. The tacking agent shall be a product typically used for binding soil and mulch in seeding or erosion control operations. Approved types shall consist of

mucilage or gum by dry weight as active ingredient obtained from guar or plantago. The tacking agent shall be labeled indicating the type and mucilage purity.

The contractor shall have the tacking agent swell volume tested by an approved testing laboratory using the USP method. The standard swell volume shall be considered as 30 milliliters per gram. Material shall have a swell volume of at least 24 milliliters per gram. Certified laboratory test results for homogenous consistency shall be furnished to the Project Engineer for each shipment of tacking agent to be used on project areas. Tacking agent rates shall be adjusted to compensate for swell volume variation. Material tested with lesser swell volume shall have the tacking agent rate increased by the same percentage of decrease in swell volume from the standard 30 milliliters per gram. Material tested with greater volume may reduce tacking agent rates by the same percentage of increase in swell volume from the standard 30 milliliters per gram. Tacking agent shall be pure material without starches, bentonite, or other compounds that would alter the swell volume test results of mucilage, or the effectiveness of the tacking.

Straw Mulch:

General:

Straw mulch shall be from the current season's crop. A letter of certification from the supplier shall be required stating that the straw was baled less than 12 months from the delivery date.

All straw, including hydraulically applied straw, shall be free from noxious weeds in compliance with the standards and procedures of the North American Weed Management Association (NAWMA) or the Arizona Crop Improvement Association (ACIA). The contractor shall provide documentation, including a transit certificate, and appropriate labels and/or marking twine, from the ACIA or NAWMA that straw materials to be used for mulch are free of noxious weeds. The straw shall be accompanied by the certification, labels and/or marking twine at the time of delivery to the project site. Straw delivered to the project without such information will be rejected, and promptly removed from the project.

Rye straw and oat straw will not be acceptable.

Straw Mulch for Hydraulic Application:

Hydraulically applied straw mulch shall be wheat or rice straw processed to various particle sizes, mixed with water and tacking material, and applied as a non-clogging slurry using a hydroseeder. A minimum of 70 percent of the wheat or rice straw in the mix shall be not less than 1/2 inch ± 1/4 inch in length. Straw particles may be longer provided that the particles can be used with the selected

hydroseeder without clogging. Hydraulically applied straw mulch, as furnished by the manufacturer, may contain up to 10 percent paper or cotton materials in dry weight, as well as 5 to 20 percent of wood fiber in dry weight. The combined dry weight percentage of paper, cotton, and wood fiber materials together shall be not less than 15 percent nor more than 30 percent of the hydraulically applied straw mulch.

Hydraulically applied straw mulch material from the following sources shall be acceptable:

Hydra Matrick
North American Green
5401 St Wendel-Cynthia Road
Poseyville, IN 47633
Phone: 1-800-772-4297

Hydro Straw
Hydrostraw LLC
3676 W 9000 N Road
Manteno, IL 60950
Phone: 1-800-545-1755

Shot Straw
Rio Ranches LLC
PO Box 156
Palo Verde, AZ 85343
Phone: 602-680-8320

DuraBlend 361
PrimeOne Products LLC
PO Box 30816
Spokane, WA 99223
Phone: 509-981-8555

Chemical Fertilizer and Sulfur:

Fertilizer shall be composed of a mixture of one part sulfur-coated urea 25-4-8, one part monammonium phosphate 11-52-0, and one part methylene urea 38-0-0. The sulfur-coated urea, a blended fertilizer 25-4-8, shall have approximately 80 percent of the nitrogen defined as slow release, and contain 5 percent Iron, 10 percent sulfur and trace amounts of zinc and manganese. The result shall be a 24-18-2 chemical blended fertilizer, as specified herein.

Chemical fertilizer and sulfur shall be applied at the rate of 200 pounds each per acre. Compost shall be applied at the rate of 15 cubic yards per acre.

Water:

Water shall be free of oil, acid, salts or other substances which are harmful to plants. The source shall be as approved by the Project Engineer prior to use.

Compost:

Compost shall consist of composted organic vegetative materials. Prior to being furnished on the project, compost mulch samples shall be tested for the specified microbiological and nutrient conditions, including maturity and stability, by a testing laboratory approved for testing of organic materials. Such testing shall

have been performed within six months of time the compost is to be furnished to the project. Written test results shall be submitted to the Project Engineer for approval.

Compost material shall be dark brown in color with the parent material composted and no longer visible. The structure shall be a mixture of fine and medium size particles and humus crumbs. The maximum particle size shall be within the capacity of the contractor's equipment for application to the constructed slopes. The odor shall be that of rich humus with no ammonia or anaerobic odors.

Compost shall also meet the requirements of the following Table:

Cation Exchange Capacity (CEC)	Greater than 50 meq/100 g
Carbon:Nitrogen Ratio	Less than 20:1
pH (of extract)	6.0 – 8.5
Organic Matter Content	Greater than 25%
Total Nitrogen (not added)	Greater than 1%
Humic Acid	Greater than 5%
Maturity Index	Greater than 50% on Maturity Index at a 10:1 ratio
Stability	Less than 100 mg O^2/Kg compost dry solids – hour

(b) Construction Requirements:

Seeding Operations:

At least two weeks prior to beginning seeding, the contractor shall complete and submit a batch mix and seed application form to the Project Engineer for approval. The batch mix form will be supplied by the Project Engineer.

The contractor shall notify the Project Engineer at least two days prior to commencing any phase of seeding operations for the remainder of the project.

The equipment and methods used to distribute seeding materials shall provide an even and uniform application of seed, mulch, and other materials at the specified rates.

Unless specified otherwise in the Special Provisions, seeding operations shall not be performed on undisturbed soil outside the clearing and grubbing limits of the project or on steep rock cuts.

The contractor shall coordinate the seeding operations with the grading operations to determine mobilization frequency as embankment and cut slopes are finished throughout the duration of the project. Seeding shall be done during suitable weather and soil conditions for tillage and placement of materials. Seeding operations shall not be performed when wind exceeds 10 miles per hour or, if in the opinion of the Project Engineer, conditions would prevent uniform application of materials or would carry seeding materials into areas not designated for seeding.

The contractor shall not expose an area greater than 750,000 square feet at any one location within the project limits until the seeding proposed for that portion of the project has been installed and accepted by the Project Engineer. Seeding shall be accomplished within 14 days after slopes and disturbed areas have been completed.

Tillage:

Where equipment can operate, the area to be seeded shall be prepared with a ripper bar, chisel plow, or with other devices to provide thorough soil cultivation to the depth specified below.

For areas too steep to be prepared for seeding after the slope has been completed, as determined by the Project Engineer, tillage shall be accomplished with appropriate equipment as the slope is being constructed. On slope areas, all tillage shall be directional along the contours of the areas involved. All areas which are eroded shall be restored to the specified condition, grade, and slope as directed prior to seeding.

Cut slopes shall be prepared with ridges and deep tillage, or shall be mini-benched. On fill slopes, the operations shall be conducted in such a manner as to form minor ridges thereon to assist in retarding erosion and favor germination of the seed.

Cut slopes shall be tilled to a six-inch minimum depth. All slopes steeper than 3:1, and areas which could potentially be affected by underground utilities, shall be tilled to a minimum 6 inches in depth, and left in a roughened condition as they are constructed.

Tillage shall be a minimum of two inches in depth for the first ten feet from the edge of pavement, including shoulder build-up areas.

Care shall be taken during the seeding operations to prevent damage to existing trees and shrubs in the seeding area.

Tillage may require passing the equipment over the area several times to provide thorough soil cultivation. Furrows from tillage shall be no more than 12 inches

apart. No work shall be done when the moisture content of the soil is unfavorable to tillage.

All competitive vegetation shall be uprooted prior to seeding and the soil shall be left in a friable roughened condition free of clods or large stones over four inches in any dimension, and other foreign material that would interfere with the seeding operation. Exposed stones larger than four inches shall be removed and disposed of in an approved manner prior to grading and seeding.

Regardless of the method of seeding application, all areas prepared with tilling shall have chemical fertilizer and soil amendments (sulfur and compost) uniformly applied and incorporated into the soil prior to final tillage and seeding.

Chemical fertilizer and sulfur shall be applied at the rate of 200 pounds each per acre. Compost shall be applied at the rate of 15 cubic yards per acre.

Unless otherwise approved by the Project Engineer, bulk compost shall be applied, using broadcast methods, to all areas where equipment can be operated. For areas where bulk compost cannot be applied by broadcast methods, as determined by the Project Engineer, compost shall be applied hydraulically at the rate of 1,500 pounds per acre. Compost may be combined with seed in the same slurry. Sulfur and fertilizer shall be applied separately.

Slopes 3:1 and flatter shall have fertilizer, sulfur, and compost tilled into a minimum of the top four inches of the surface. Slopes steeper than 3:1 shall have fertilizer, sulfur, and compost uniformly broadcast for incorporation into the soil as directed by the Project Engineer. Fertilizer and sulfur shall not be applied hydraulically to any seeded areas.

For mini-benched slopes, fertilizer, compost, and sulfur shall be applied ~~to~~ at the specified rates with no tillage or incorporation.

(c) Seeding:

General:

Drill seeding with straw mulch shall be considered as the preferred method of seed application when practicable. Unless otherwise approved by the Project Engineer, drill seeding shall be used for all areas with slopes of 3:1 or less.

Hydroseeding shall be the alternative method for seed distribution for slopes in excess of 3:1, and where drill seeding is not practicable or suitable for soil conditions and seed types, as determined by the Project Engineer.

Seeds not suitable for drill seeding and hydroseeding methods shall be broadcast manually. Areas to be seeded manually shall be completed after the final soil tillage and prior to any drill or hydroseeding.

Straw mulch or hydraulically applied straw mulch shall be applied on all seeded areas within 24 hours of seed application. Seeding application shall be accomplished prior to application of straw mulch or hydraulically applied straw mulch. Combining the seed application process with the mulching process will not be acceptable.

Unless otherwise specified in the Special Provisions, Class II seeding areas shall not be watered after planting.

Drill Method:

After the tillage and incorporation of fertilizer, sulfur, and compost is completed and accepted by the Project Engineer, seed shall be planted with a drill seeder capable of accurately metering the specific seed mix. Use of a drill seeder shall not damage the prepared seedbed, and shall provide a soil cover over the planted seed.

Seed shall be planted approximately 1/4 inch deep, with a maximum depth of 1/2 inch. The distance between the furrows produced using the drill process shall not be more than eight inches. If the furrow openers on the drill exceed eight inches, the area shall be drilled twice. Seeding shall be done with grass seeding equipment with double disc openers, depth bands, packer wheels or drag chains, rate control attachments, seed boxes with agitators and separate boxes for small seed. Seed of different sizes shall be sowed from at least two separate boxes adjusted or set to provide the planting rate as specified.

Hydroseed Method:

Areas and seed types not suitable for drill-seeding, as determined by the Project Engineer, shall be hydroseeded. The contract-specified seed shall be applied in a slurry containing 200 pounds of thermally-refined wood fiber and a minimum of 40 pounds tacking agent per acre. Seed shall not be in the slurry for more than 30 minutes. Hydroseeded areas shall also be mulched within 24 hours of application of the seed.

Manual Application:

Manually applied seeds shall be broadcast evenly to produce uniform distribution over the seeded areas.

Applying Straw Mulch:

General:

Within 24 hours after each area is planted, straw mulch shall be uniformly applied at the minimum rate of 2 1/2 tons per acre for areas to be crimped and tacked, and minimum two tons per acre for tacked-only areas. Except for shoulder build-up areas, and unless otherwise specified by the Project Engineer, straw mulch shall be applied to all seeded areas. Areas to receive hydraulically applied straw mulch, if directed by the Project Engineer, shall be mulched.

During seeding and mulching operations, care shall be exercised to prevent drift and displacement of materials. Mulch material which is placed upon trees and shrubs, roadways, structures, and upon any areas where mulching is not specified, or which is placed in excessive depths on mulching areas, shall be removed as directed. Mulch materials which are deposited in a matted condition shall be loosened and uniformly spread to the specified depth over the mulching areas. Any unevenness in materials shall be immediately corrected by the contractor. In addition, the contractor shall minimize production of dust or other airborne particulate matter during application of straw mulch, either by moistening the straw, modifying equipment with misters, or through other means approved by the Project Engineer.

Except as specified in the next paragraph, straw mulch applied to seeded areas shall be immediately affixed by crimping and tacking after application. No mulch shall be applied to seeding areas which cannot be crimped and/or tacked by the end of each day. Any drifting or displacement of mulch before crimping and/or tacking shall be corrected by the contractor at no additional cost to the Department.

Crimping shall not be required for areas that are steeper than 3:1. Crimping may also be waived, when specifically directed by the Project Engineer, for drill seeded or hydroseeded areas with rocky conditions or other areas deemed unsuitable by the Project Engineer for crimping. Straw mulch applied to such areas shall only be tacked.

Prior to the application of a tacking agent, protective covering shall be placed on all structures and objects where stains would be objectionable. All necessary precautions shall be taken to protect the traveling public and vehicles from damage due to drifting spray.

Anchorage by Crimping:

Crimping shall be required for all straw mulched areas. Straw mulch shall be anchored into the soil with a heavy disc. Discs shall be flat and serrated, with at least 1/4 inch thickness having dull edges, and spaced no more than nine inches apart. Straw mulch shall be anchored to a depth of at least two inches and shall not be covered with an excessive amount of soil. Anchoring operations shall be across the slopes where practical, with no more than two passes of the anchoring equipment. Immediately following the crimping operation, the crimped area shall be tacked as specified below.

Anchorage by Tacking:

Straw mulch shall be anchored by tacking, using a slurry consisting of a minimum of 150 pounds of tacking agent, 500 pounds of thermally refined wood fiber mulch, and 300 gallons of water per acre. The contractor may increase the quantities of components to ensure the stability of the straw mulch to provide erosion control during the 45 calendar-day maintenance period at no additional cost to the Department.

Hydraulically Applied Straw Mulch with Tacking Agent:

Areas seeded but not practical for straw mulch, as determined by the Project Engineer, shall have hydraulically applied straw mulch with tacking agent applied at the variable rates shown in the table below.

Slope (H:V)	**Hydraulically Applied Straw Mulch (Pounds per acre)**	**Tacking agent (Pounds pure mucilage per acre)**
Flat to 6:1	2,000	150
From greater than 6:1 to 3:1	2,500	150
Greater than 3:1	3,000	200
Erosive Soil Slopes or Highly Erosive Areas*	3,500	250
*As determined by the Project Engineer		

The contractor shall submit a batch (tank) mix quantity schedule for mulch application to the Project Engineer for approval prior to mixing hydraulically applied straw mulch and tacking agent in a slurry. Batch mixing and coverage will be monitored throughout the seeding operations. The contractor shall coordinate the mixing and application operations with the Project Engineer in advance of all mixing. Fertilizer or seed shall not be mixed into any slurry for temporary erosion control mulch application.

Seeding Acceptance:

After application the Project Engineer will inspect seeded areas or sub-areas for conformance to the contract requirements. The contractor shall correct, to the satisfaction of the Project Engineer, any areas not conforming to the specifications. The 60-day maintenance period will begin upon acceptance of the area by the Project Engineer.

The contractor shall maintain and stabilize each area or sub-area, including shoulder build-up areas, for a minimum period of 60 calendar days after application of the seeding and mulching materials, and acceptance by the Project Engineer. Any areas damaged from erosion, or that have less than 90 percent of applied mulch remaining, shall be re-seeded, re-mulched, and re-tacked at no additional cost to the Department.

Method of Measurement:

Seeding will be measured by the acre, to the nearest one acre of ground surface seeded. Measurements will be along the ground surface for the areas seeded and mulched, as approved by the Project Engineer.

Basis of Payment:

The accepted quantities for Seeding, measured as provided above, will be paid in two phases corresponding to the application stage and the 60 calendar-day maintenance stage.

Upon completion of the application stage and acceptance by the Project Engineer, the contractor will be paid 70 percent of the contract bid price per acre for the completed work. Such price will be considered full compensation for furnishing and applying the contract-specified seed mix, fertilizers, soil amendments, tillage, mulch materials, and tacking agent, all required testing, and all equipment and labor required to complete the work as specified herein.

Upon completion of the 60 calendar-day maintenance stage, and acceptance by the Project Engineer, the contractor will be paid 30 percent of the contract bid price per acre for the completed work. Such price will be considered full compensation for seeding maintenance, including all equipment, labor, and materials required to correct deficiencies in seeded, mulched areas, as specified herein.

No measurement or payment will be made for the mobilizations required to apply and stabilize the seeding for each area or sub-area, as specified herein, the cost being considered as included in the contract price for Seeding.

An adjustment to the contract will be made if a contractor-requested seed substitution is approved.

108 COMMENCEMENT, PROSECUTION AND PROGRESS

Section 108.3 Correspondence to the Contractor

ADD the following:

It is understood and agreed that all work under this Contract shall commence within fourteen (14) calendar days of the Notice to Proceed and shall be entirely completed in one hundred and twenty-five (125) calendar days from issuance of Notice to Proceed.

201 CLEARING AND GRUBBING

Section 201.1 Description

REMOVE in its entirety and REPLACE with the following:

This work shall consist of removing objectionable material from the right-of-way, easements, all areas to be graded, and such other areas as may be specified in the special provisions. Clearing and grubbing shall be performed in advance of grading operations.

Section 201.3 Construction Methods

REMOVE the eighth paragraph in its entirety and REPLACE with the following:

All brush, limbs, roots, vegetation, concrete and other debris removed in clearing and grubbing shall be completely removed from the project and properly disposed of.

The 65 pecan trees, marked for removal on the plan sets, shall be removed from the project and relocated to the property of the adjacent land owner.

220 RIPRAP CONSTRUCTION

Section 220.5

ADD the following:

Section 220.5a Dumped Riprap

Dumped riprap shall be installed in at the locations and in accordance with the details on the plans. Stone shall be sound and durable, free from seams and coatings, and of such characteristic that it will not degrade in water. Waste concrete may not be used. All stones shall be angular, with rough surface

texture. Stone size shall be in accordance with the gradations shown on the plans. Thickness of any dumped riprap layer is to be at least twice the D_{50} as shown on the plans. Stone color shall match color of existing stone or as approved by the Project Engineer.

Contractor is to provide a sample of at least one cubic yard of rip rap on the site for approval by the Project Engineer prior to placing rip rap. The sample shall be representative of the gradation, stone soundness, angularity, etc, of the rock to be supplied for the job. Once the sample is approved by the Project Engineer, all subsequent rock supplied shall be from the same source. Additional samples will be required if the source of the rock changes during construction.

Section 220.6

ADD the following:

Grouted riprap shall be installed at the locations and in accordance with the details on the plans. Stone shall be sound and durable, free from seams and coatings, and of such characteristic that it will not degrade in water.

Contractor is to provide a sample of at least one cubic yard of rip rap on the site for approval by the Project Engineer prior to placing rip rap. The sample shall be representative of the gradation, stone soundness, angularity, etc, of the rock to be supplied for the job. Once the sample is approved, all subsequent rock supplied shall be from the same source. Additional samples will be required if the source of the rock changes during construction.

Section 220.8 Payment

ADD the following:

Payment for Dumped and/or Hand-Placed Grouted Rip Rap shall be made at the unit bid price per square foot and shall include, but not be limited to, surface preparation, grout, filter fabric, and other materials, labor, equipment, maintenance, and any incidentals thereto, in order to complete the work in accordance with the Standard Specifications.

310 PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE

Section 310.2 Placement and Construction

REMOVE the first paragraph and REPLACE with the following

New base course shall be an aggregate base material per MAG Standard Specifications, Section 702, and placed in accordance with MAG Standard Specifications, Sections 310 and 601, in lifts not to exceed six (6) inches, to a

relative density of not less than 100% of the standard proctor value. If base material exceeds the allowable moisture content, it shall be removed, reworked, or replaced with new material at no additional cost to the County.

350 REMOVAL OF EXISTING IMPROVEMENTS

Section 350.2.2 Others

ADD the following:

Any land values damaged or relocated during construction will be the responsibility of the Contractor to replace and/or restore to its original value before completion of the project at no cost to the County. Existing improvements, such as landscaping, irrigation, fences, concrete structures, gravel driveways, mail boxes, or other improvements within the project limits, shall be left, removed, replaced, or relocated, as shown on the plans and/or as determined by the Project Engineer.

All paved areas and concrete shown for removal on the plans, or as designated by the Project Engineer, shall be saw-cut removed in such a manner that the remaining improvements are not damaged. Unsuitable materials, such as broken concrete that is to be removed cannot be used as fill for this project and shall be promptly removed from the project area to the landfill or an approved disposal site. Removal of unsuitable materials is incidental to the lump sum price for removal of existing improvements, and no additional payment will be made.

Burning of combustible material will not be permitted. Trees within the excavation area may be removed for fuel wood purposes; any remaining combustible material shall be removed from the project. The right-of-way shall be left with a neat and finished appearance.

All landscaping and irrigation shown for removal on the plans, or as designated by the Project Engineer, shall be removed in such a manner that the remaining improvements are not damaged. All existing irrigation damaged during the course of work shall be repaired, relocated, and/or capped, per the direction of the Project Engineer. Unsuitable materials shall be promptly removed from the project area to the landfill or an approved disposal site. Removal or relocation of materials is incidental to the lump sum price for removal of existing improvements, and no additional payment will be made.

Existing signs shall be removed or relocated as shown on the plans and/or as determined by the Project Engineer.

All other incidental items not specifically addressed by the plans that are required to be removed for construction shall be disposed of or salvaged at the direction of the Project Engineer.

Restoration: It will be the responsibility of the Contractor to replace and/or restore any land values that are damaged or relocated during construction to their original value before completion of the project at no cost to the County.

Section 350.4 Payment

REMOVE in its entirety and REPLACE with the following

Payment for the removal of existing improvements, including, but not limited to, irrigation and signs, shall be paid at the lump sum bid price and shall include all materials, labor, equipment, maintenance, and any incidentals thereto, in order to complete the work in accordance with the Construction Drawings and Specifications for this project.

401 TRAFFIC CONTROL

Section 401.7

ADD the following:

Flagmen and Pilot Cars with Drivers will be measured and paid for by the hour for each individual, including vehicle and equipment, required to perform traffic control.

405 SURVEY MONUMENTS

Section 405.1 Description

ADD the following:

All efforts shall be made to protect survey monuments from damage. Monuments shall be: 1) re-established by a Registered Land Surveyor at the Contractor's expense if damaged or covered, and 2) located by a Registered Land Surveyor where noted on plans.

Any monuments uncovered or found during the course of construction shall not be disturbed or removed until observed, measured and referenced by the Project Engineer.

Replacement survey monuments shall be installed per MAG Section 405. All survey information necessary for the installation of the survey monuments shall be provided by the Contractor. Removal of existing survey monuments shall be considered incidental, and no additional payment will be made for this item.