SUPPLEMENTAL
CONSTRUCTION SPECIFICATIONS

SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS
B. CAVES (IA-255, FRA 23-041) AND
R. CAVES (IA-256, FRA 23-042)
AML RECLAMATION PROJECT

SC-01 – SPECIAL CONDITIONS

A. The purpose of this Section of the Specifications is to provide supplementary information that is required to clarify the Construction Specifications and to set supplementary requirements, modifications and/or deletions from the Construction Specifications that are required to adapt said Construction Specifications to this particular project.

B. References to Section, Paragraph, and Subparagraph numbers used in these Supplemental Conditions are intended to coincide with reference numbers for corresponding Sections, Paragraphs, and Subparagraphs in the Construction Specifications.

C. Where there is any variance between the Construction Specifications and these Supplemental Conditions, the Supplemental Conditions shall take precedence.

D. Where any section of the Construction Specifications is modified, or any Paragraph, Subparagraph, or Clause thereof is changed or deleted by these Supplemental Conditions, the unaltered provisions of that Section, Paragraph, Subparagraph, or Clause in the Construction Specifications shall remain in effect. Unless these Supplemental Provisions make specific reference to the modification or deletion of a Paragraph, Subparagraph, or Clause in the Construction Specifications, no changes are intended, and paragraphs contained in these Special Conditions are intended only to supplement, amplify, or clarify said Construction Specifications.

SECTION 1 - DEFINITIONS

1-04 ENGINEER: French-Reneker-Associates, Inc.
1501 South Main Street
Fairfield, IA 52556

1-06 WORK OR PROJECT: Work to be done and equipment, supplies, and materials to be furnished under the Contract, General Conditions, Special Conditions, Construction Specifications, Supplemental Construction Specifications, Plans, Addenda, and Modifications to these Contract Documents issued subsequent to their initial printing unless some other meaning is indicated by the context. The Project is the B. Caves and R. Caves AML Reclamation Project, Van Buren County, Iowa.

1-27 ABBREVIATIONS: Include the following:

AWWA	American Water Works Association
ECCE	Effective Calcium Carbonate Equivalent
Iowa SUDAS	Iowa Statewide Urban Design and Specifications 2025 Edition

SECTION 2 – PLANS, SPECIFICATIONS, AND RELATED DATA

2-01 INTENT OF PLANS AND SPECIFICATIONS:

The intent of the plans and specifications shall be as described in Section 2-01 of the General Conditions and as further described herein.

The Construction Specifications which follow and which govern the materials furnished and work performed under this Contract are divided, classified, designated, and arranged as follows:

SECTION 02000	SUBSURFACE INVESTIGATION
SECTION 02010	FIELD ENGINEERING
SECTION 02100	MOBILIZATION, SITE CLEARING, AND PREPARATION
SECTION 02110	IMPOUNDMENTS
SECTION 02120	SEDIMENT AND EROSION CONTROL
SECTION 02200	EARTHWORK, ROUGH GRADING
SECTION 02220	EARTHWORK, DAMS
SECTION 02230	EARTHWORK SHAFTS
SECTION 02250	EARTHWORK, SELECT BORROW
SECTION 02300	DRAINAGE SYSTEMS, GENERAL
SECTION 02310	DRAINAGE SYSTEMS, DAMS AND STRUCTURES
SECTION 02400	SUBGRADE PREPARATION
SECTION 02500	FENCING
SECTION 02700	PERMANENT SEEDING

No attempt has been made to segregate the work to be performed by any trade, subcontract, or proposal item under any one Section of the Construction Specifications. Any segregation between trade or craft jurisdiction limits and the establishment of subcontract limits shall be solely a matter of agreement between the Contractor and the Contractor's subcontractors. The Construction Specifications govern the construction of the entire work and the provisions thereof govern each item and unit of work to which such provisions apply.

The Plans, upon which the bids and the Contract are based, are listed for information and reference as follows:

Sheet Title	Sheet Number
Title Sheet	1
Project Notes, Quantities, and Legend	2
Situation Plan - Burn Radii & Survey Control	3
Situation Plan – Clearing & Site Preparation B. Caves (IA-255)	4
Post-Reclamation Grading Plan B. Caves (IA-255)	5
Cut & Fill B. Caves (IA-255)	6
Drainage & Terrace Plan B. Caves (IA-255)	7
Drainageway Plan and Profile B. Caves (IA-255)	8
Situation Plan – Clearing & Site Preparation R. Caves (IA-256)	9
Post-Reclamation Grading Plans R. Caves (IA-256)	10
Cut & Fill R. Caves (IA-256)	11
Typical Details – Project Signage	12
Typical Details	13 – 15
Cross Sections B. Caves (IA-255)	16 – 18
Cross Sections R. Caves (IA-256)	19 - 20
SWPPP Summary B. Caves (IA-255)	21
B. Caves (IA-255) SWPPP BMP Map	22
SWPPP Summary R. Caves (IA-256)	23
R. Caves (IA-256) SWPPP BMP Map	24

2-05 PLANS AND SPECIFICATIONS AT JOB SITE: After subparagraph C, "Record Survey Note," add the following new subparagraph:

D. RECORD SURVEYS

Throughout the Contract, the Division may direct changes in the work as approved by Change Orders and/or Contract Amendments. In the event Division believes such a change is significant enough to

warrant the preparation of a record survey, the Contractor shall provide a field survey and record drawing and shall be entitled to compensation thereof. If a record survey is requested, it shall be so indicated in the Change Order or Contract Amendment, and the requirements for the field survey and record drawing shall be provided to the Contractor. The Contractor shall include the cost for the survey and record drawing either in the lump sum price for the change work or as an additional item in the event the change in work is covered by bid unit prices.

2-09 SCHEDULE OF ALTERNATES:

This project does not include any alternate bids.

SECTION 3 – ENGINEER – DIVISION – CONTRACTOR RELATIONS

None

SECTION 4 – SCOPE OF WORK

None

SECTION 5 – MATERIALS AND WORKMANSHIP

None

SECTION 6—LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

6-10 TRAFFIC CONTROL WITHIN AND ABUTTING THE PROJECT. The Contractor shall provide traffic control signage as shown on the Plans, in accordance with the Iowa DOT Standard Road Plans in Appendix A, and in accordance with Iowa DOT Specifications Section 2528. The cost for furnishing, installing, maintaining, and removing the traffic control shall be included with the price for traffic control. Compensation for traffic control shall be at the Contract lump sum price with partial payment made in relation to the percent of the project completed.

SECTION 7 – MEASUREMENT AND PAYMENT

7-01 MEASUREMENT: The Contractor shall provide a final pay quantity survey, which will include a determination of the actual quantities of all bid items except lump sum items. All bid items measured by weight must be substantiated by weight tickets furnished to the Engineer. All bid items measured by length shall be taped in the field jointly by the Contractor and the Engineer. All bid items measured by the number of each unit installed shall be counted in the field by the Contractor, accompanied by the Engineer. All bid items measured by area, except those measured in acres, shall be measured in the field jointly by the Contractor and the Engineer. All bid items measured by the cubic yard or acre shall be surveyed by the Contractor-retained personnel. In lieu of a survey of cubic yard or acre items, the Contractor may request that the Division accepts plan (bid) quantities for those items.

In the event surveying is performed for an item to be measured by the cubic yard or acre, it shall be performed in the presence of the Engineer after said item is completely in place. Surveying shall be performed by a licensed surveyor or a licensed engineer retained by the Contractor. Final quantities used for payment purposes that rely on surveying shall be certified by the licensed surveyor or licensed Engineer. For cubic yard items, submit the survey data as required in the Construction Specifications. For items measured by the acre, submit to the Engineer a scaled drawing showing the limits of the measured item, with area calculations performed and certified by the licensed surveyor or licensed Engineer.

In the event the Contractor wishes to accept the plan (bid) quantities for any items measured by the square yard, cubic yard, or acre, the Contractor shall submit a request to the Engineer and the Division. If the Division does not agree to plan quantities, the Contractor shall be required to furnish a survey as above for

any item not approved. In evaluating the Contractor's request to accept plan quantities, the Division will consider whether or not the Contractor has performed the work to the full intent of the Contract and has completed grading in conformance to the grades shown on the Plans. Bid items measured by the square yard, square, cubic yard, or acre, which can be considered for the request to accept plan (bid) quantity, include:

Bid Item 3	Site Clearing and Preparation (Acre)
Bid Item 8	Excavation (C.Y.)
Bid Item 9	Undercut Excavation (C.Y.)
Bid Item 24	Subgrade Preparation (Acre)
Bid Item 26	Mulch, Subgrade (Acre)
Bid Item 28	Wetland Undercut and Replacement (Acre)
Bid Item 29	Wetland Mulch (Acre)
Bid Item 32	Seedbed Preparation (Acre)
Bid Item 36	Upland Seeding (Acre)
Bid Item 37	Wetland Fringe Seeding (Acre)
Bid Item 38	Pasture Seeding (Acre)
Bid Item 39	Mulch, Seeding (Acre)

SECTION 8—DAVIS-BACON AND RELATED ACT PROVISIONS

None

SECTION 02000 – SUBSURFACE INVESTIGATION

None

SECTION 02010 - FIELD ENGINEERING

None

SECTION 02100 - MOBILIZATION, SITE CLEARING & PREPARATION

1.3 QUALITY ASSURANCE –

D. Delete: "or in the Appendix"

3.1 SITE ACCESS—*Add the following paragraphs after Paragraph D:*

E. The Contractor shall comply with the following additional site access requirements:
   1. B. Caves.
      a. Emerald Avenue is a Level B Service dirt road. The bridge on Emerald Avenue south of the site has a 14-ton load limit; therefore, there is no access to the site from the south.
      b. Use of Emerald Avenue shall be restricted to times when conditions are suitable and will not damage the roadway. If, in the opinion of the Van Buren County Engineer, Emerald Avenue has been damaged by the Contractor's actions, Emerald Avenue shall be restored to its original or better condition at no additional cost to the Division.
   2. R. Caves. Two site access routes are shown in the Plans for this site.
      a. V64 (Libertyville Road). This entrance is limited for use by pickup trucks or similar-sized vehicles. The intent is this entrance will be for "everyday" use.
      b. Iowa Highway 16. This entrance is limited for use by large equipment for mobilizing or delivering materials. The use of this entrance shall be limited to the minimum number of uses possible (likely 2-3 times).

3. The site accesses to both sites may be widened at the intersection with the county road at the Contractor's option. If the Contractor elects to widen the accesses, the cost for excavation, pipe, and surfacing shall be included with the price for Mobilization. Site access modifications will require a Van Buren County Driveway Permit prior to commencing work.

3.4 OFFICE AND LAY-DOWN AREA – *Replace Paragraphs B and C with the following paragraphs:*

B. A Contractor's office is not required for this project. The Contractor is responsible for establishing sanitary facilities during construction as described in Section 6-13 of Document N.

3.9 PROJECT SIGN AND JOB POSTER DISPLAY—*Clarification:*

This project requires two project signs (one for each site) as shown in Sheets 3 and 12 of the Plans.

3.10 CLEANUP AND DEBRIS—*Add the following to the end of Paragraph C.*

At the end of the project, the B. Caves construction access route across the existing farm field shall be de-compacted. This shall be achieved with a ripper on the back of a bulldozer to an approximate depth of 24 inches.

4.1 UNIT PRICES AND PAYMENT CALCULATION—*Add the following to the end of the first paragraph of Paragraph B(1). Mobilization:*

The following additional item is included with the price for Mobilization:

1. Deep ripping in the farm field along the construction access route to the B. Caves site.

SECTION 02110 – IMPOUNDMENTS

None

SECTION 02120 – SEDIMENT AND EROSION CONTROL

1.1 DESCRIPTION – *Add the following paragraph:*

D. The bidding documents include bid items for "approved" temporary sediment control measures. During the shop drawing phase, the Contractor shall submit the sediment control device they plan to use in the areas shown in Sheets 22 and 24 of the Plans. The Contractor may use silt fencing, wattles, or earthen sediment berms.

2.7 WATTLES AND FILTER SOCKS - *Replace Paragraph 1 of A. Wattles with the following paragraph:*

1. Netting for wattles shall be degradable with an open weave having a nominal diameter of twelve (12) inches.

3.3 INSTALLATION OF SEDIMENT AND EROSION CONTROL METHODS – *Replace Paragraph 6 of F. Silt Fences with the following paragraph:*

6. The silt fence shall be removed as described herein. The accumulated sediment shall be removed from the upstream face of the silt fence, spread uphill, and graded to provide positive gravity drainage. The portion of the silt fence fabric above the ground shall be cut off at ground level and removed from the site. The portion of the silt fence fabric below grade shall remain in place. The zip ties or wire ties shall be removed from the fence posts and the posts removed.

3.3 INSTALLATION OF SEDIMENT AND EROSION CONTROL METHODS – *Replace Paragraph 3 of K. Temporary Rolled Erosion Control Products (RECPs) with the following paragraph:*

3. The seedbed shall be prepared, the seed placed, and fertilizer applied in accordance with Section 2700 before installation of the RECP.

Add the following paragraphs 6 and 7 to K. Temporary Rolled Erosion Control Products (RECPs):

6. A minimum quantity of RCEPs is shown on the Plans. It is anticipated additional RCEPs might be necessary on some steep slopes. The final location and quantity of RECP shall be determined by the Engineer during construction.

7. Temporary RECP shall be considered a permanent erosion control practice and shall not be removed after installation.

4.1 UNIT PRICES AND CALCULATION – *Add the following to the end of the respective paragraphs in Section B:*

6. *Silt Fences:* Measurement and payment for installation and removal of silt fence shall be as described in Section 2120(4.1)B(6) of the Construction Specifications, except the fence fabric removal shall be as described in Section 2120(3.3)F of these Supplemental Construction Specifications in lieu of the Construction Specifications.

15. *Stabilized Construction Entrance:* The cost for the stabilized construction entrance shall be included with the price for the Macadam Stone Base.

16. *Approved Temporary Sediment Control Measures:* This item includes furnishing and installing, maintaining, and removing approved sediment control measures (silt fencing, wattles, or temporary earthen sediment berms) as described in Section 2120. Installation, measurement, and payment shall be as described for each respective sediment control measure as described for that measure in Section 2120. If, during construction, temporary sediment control devices are declared permanent by the Engineer or Division, the full amount shall still be paid to the Contractor.

4.2. SUMMARY – *Proposal Bid Items applicable to work covered by this SECTION are as follows:*

Description	Unit
Approved Temporary Sediment Control Measures- Installation	Linear Foot

SECTION 02200 – EARTHWORK, ROUGH GRADING

1.4 JOB CONDITIONS – *Add the following paragraph to 1.4C:*

C. Earthwork Balance
3. The earthwork for this project is summarized below.

EARTHWORK SUMMARY		
SITE	CUT (C.Y.)	FILL (C.Y.)
B. CAVES	30,326	26,738
R. CAVES	3,936	3,385
SHRINK	-	4,139
TOTAL	34,262	34,262

3.9 FILL PLACEMENT AND COMPACTION—*Clarification to paragraph 3.9G:*

There are no fills greater than 15 feet on this project; therefore, no special compaction or waiting period is required.

SECTION 02220 – EARTHWORK, DAMS

1.3 QUALITY ASSURANCE—*Replace Paragraph D with the following:*

e. The services of a Geotechnical Engineer are not anticipated for this Contract.

SECTION 02230 – EARTHWORK, SHAFTS

1.1 DESCRIPTION – *Add these paragraphs before Paragraph A:*

According to maps prepared by Joseph M. Smith of Lovilia, IA, dated April 4, 1937, the entire R. Caves site is underlain by the Ratcliff Coal Company underground mine. The 1937 maps show two hoisting shafts and one air shaft, which appear on Sheet 9 of the Plans. Records from the Iowa DNR Coal Mines website indicate these shafts are approximately 90 to 95 feet deep. According to the landowner, Ralph Caves, these shafts were abandoned in the 1950s by the filling of them with rock.

All three shafts shown on Sheet 9 of the Plans are located using the 1937 mapping. No evidence of the shafts was found on the ground surface by the French-Reneker-Associates survey crew during the design process.

During the grading process, the Contractor shall locate the shafts. The Engineer will provide coordinates of the expected shaft locations to the Contractor's surveyor. Once the shafts are located, the Engineer and Division shall be given an opportunity to review the conditions prior to work proceedings. The Contractor's surveyor shall tie-in the location of the shafts and provide coordinates with the record drawings to the Division.

If it is determined the shafts are in need of further stabilization, the stabilization work will be considered Extra Work as described in Section 7-03 of Document N.

SECTION 02250 – EARTHWORK, SELECT BORROW

1.1 DESCRIPTION – *Add these paragraphs before Paragraph A:*

An estimated area of select borrow on the R. Caves site is shown on the plans. This is an area that is expected to have topsoil present. The Contractor shall pothole the general vicinity prior to starting major excavation to determine the estimated topsoil stripping quantity. The contract amount for the Select Borrow (topsoil) is based on a 2,532 square yard stripping area, assuming the topsoil is a uniform 8-inch thickness.

A topsoil spreading plan will be developed after the topsoil stripping quantity is determined. The intent is to spread the topsoil on as much of the R. Caves site as possible at a minimum 6-inch thickness.

The contract quantities for seeding ag lime and fertilizer will be adjusted in accordance with the test results from the topsoil material spread over the site. The Contractor should be aware that the installed quantities for the seeding ag lime and fertilizer items could be significantly less than the contract quantities.

SECTION 02300 – DRAINAGE SYSTEMS, GENERAL

3.9 RIPRAP DITCHES & OTHER RIPRAP WORK - *Replace Paragraph E with the following:*

D. Grout shall not be provided with the riprap.

4.1 UNIT PRICES – *Add the following to the end of the respective paragraphs in Section B:*

1. *Terrace*: A bid item has not been provided for the construction of the terraces. The cost for the terrace earthwork shall be included with the price for the excavation, as described in Section 2200 of the Construction Specifications.

2. *Riser* – Terraces: This item includes furnishing and installing the terrace risers as shown on the plans and as described in Section 2300 of the Construction Specifications. In lieu of providing a silt fence around the terrace risers, straw wattles in accordance with Section 2120(2.1)F of the Construction Specifications, shall be furnished and installed around each riser. The cost for furnishing, installing, and cleaning the sediment from the straw wattles shall be included with the price for the terrace risers.

7. *Filter Fabric:* The cost of filter fabric shall be included with the price of the associated item of construction. Separate payments will not be made for filter fabric.

11. *Macadam Stone Base:* Macadam stone shall be placed under all areas of riprap and erosion stone as shown on the Plans, at the stabilized construction entrances as shown on the Plans, and as described in the Construction Specifications. This item includes excavation, removal, and disposal of excavated material, and furnishing and replacing the stone. The quantities for this item include all macadam required on the project (stone base and stabilized construction entrance). Measurement for payment shall be based on the tonnage of macadam stone actually placed, as determined by scale tickets provided by the Contractor. Only material placed in accordance with the Plans and Specifications shall be measured and paid.

4.3 MEANDERED CHANNELS—*Add the following new section:*

A. The Contractor shall perform the initial construction of the meandered channels during the rough grading operations. The meandered channels shall be brought to the final design grades immediately prior to subgrade preparation.

B. After the conclusion of the bake period and immediately prior to the seeding operations, the Contractor shall perform a second grading of the meandered channel to correct any erosion or sedimentation. The Engineer reserves the right to require a second staking of the meandered channel prior to the second grading.

C. After the second grading is completed, the Contractor shall provide light compaction of the soil to consolidate loose fill and create a firm bottom in each meandered stream channel.

D. The cost of construction of the meandered channels shall be included with the price of excavation. There will be no measurement of the quantity of material moved with the second channel grading operation.

SECTION 02310 – DRAINAGE SYSTEMS, DAMS, AND STRUCTURES

2.3 ANTI-SEEP COLLARS

A. *Replace Paragraph A(1) with the following:*

Anti-seep collars shall be as shown on the Plans and as described herein. The collars shall be gum-rubber meeting the requirements of ASTM D2000 and be 1/16-inch thick. The anti-seep collars shall be as manufactured by Agri-Drain Corporation, or equivalent.

2.4 DROP INLETS AND OPEN-SIDED AREA INTAKES – *Replace Paragraph A. Drop Inlets with the following A. Drop Inlets:*

1. Drop inlets shall be constructed of PPHP as described in Section 02310(2.2)H. The inlet structure shall be premanufactured to the dimensions shown on the Plans. All connections between the premanufactured drop inlet and proposed piping shall be made with Chemical Resistant Polyseal Couplers manufactured by Marmac, or equivalent.
2. The concrete anti-floatation base for the drop inlets shall meet the requirements of Section 02310(2.6)B.
3. The granular base and backfill around the drop inlets shall meet the requirements of Class I granular bedding and backfill material in Iowa SUDAS 3010(2.02).

3.8 PIPE – *Add the following paragraphs:*

E. Pipe shall be trenched and backfilled with a Class P-1 or Class F-2 trench, as shown on the Plans. The Contractor shall take care to locate suitable backfill material which is readily friable and does not consist of large clods or chunks of shale. Backfill in contact with the pipe shall be completed carefully to obtain good pipe-to-backfill contact and reduce any potential water seepage along the outside of the pipe.

3.9 STRUCTURES: DROP INLETS AND OPEN SIDED AREA INTAKES—*Replace Paragraphs A(2) and A(3) with the following:*

2. The drop inlet trench shall be excavated, and the subgrade will be prepared by placing 6 inches of Class I granular bedding material. The bedding material shall be compacted with three passes of a walk-behind vibratory plate compactor prior to setting the drop structure and placing the anti-floatation concrete footing.
3. The concrete footing shall be placed to the minimum dimensions shown on the Plans, with the base of the drop inlet cast into the concrete. It is not necessary to form the concrete. The trench walls may serve as the forms. The concrete footing shall be allowed to cure for a minimum of 48 hours prior to backfilling around the structure. The Contractor shall be aware of potential floatation during the cure time and provide trench dewatering or fill the structure with water as necessary.
4. The proposed pipes shall be connected to the drop structure with Marmac couplings in accordance with the recommendations of the pipe and coupling manufacturers.
5. The outside of the drop structure shall be wrapped with an 8-mil polyethylene wrap to prevent any potential trench settlement from compressing the drop structure. The polyethylene wrap shall be attached to the drop structure securely enough to hold the polyethylene wrap in place throughout the backfilling process. This shall be achieved with tile tape, or equivalent.
6. The drop structure shall be backfilled with Class I granular material placed in 12-inch maximum lifts. Each lift shall be compacted with three passes of a walk-behind vibratory plate compactor. The lifts shall be brought up evenly on all sides so the fill is kept at approximately the same elevation at all times.

SECTION 02400 – SUBGRADE PREPARATION (WITHOUT COVER MATERIAL)

1.2 QUALITY ASSURANCE – *Add the following paragraph:*

E. Agricultural Lime, Mulch, and Wetland Fertilizer shall be applied with the Engineer and/or Division present at all times.

3.6 LIME – MULCH APPLICATION, WITHOUT COVER MATERIAL – *Add the following to Paragraph A.1 with the following:*

A. Application Rates

1. The application rate of lime shall be based upon the results of soil tests conducted in accordance with Section 2400, 3.2D, Testing, of the Construction Specifications. For bidding purposes, it is estimated the lime shall be applied at the rate of 40 tons of ECCE per acre.

SECTION 02500 – FENCING

None

SECTION 02700 - SEEDING

1.3 QUALITY ASSURANCE – *Add the following paragraph:*

H. All seeding shall take place with the Engineer and/or Division present.

2.4 SEED – *Add the following to the end of Paragraph D:*

D. Seed Mixture: Seed mixtures shall consist of the varieties, mixtures, and application rates by pound pure live seed (PLS) per acre as stated below. The locations of the various seed mixtures are shown on the Plans.

Upland Seeding:

Common Name	Scientific Name	Rate (Lbs. PLS/ac)
Partridge pea	*cassia fasciculate*	4.0
Alsike clover	t*rifolium hybridum*	4.0
Purple prairie clover	*dalea purpurea*	0.7
Red clover	*trifolium pratense L.*	2.0
Red Fescue	*festuca rubra*	8.0
Redtop	*agrostis gigantea*	2.7
Timothy	*phleum pratense L.*	6.7
Virginia wild rye	*elymus virginicus*	6.7
Little bluestem	*schizachyrium scoparium*	4.0
Indian grass	*sorgastrum nutans*	4.0
Big Bluestream	*Andropogon geradil*	5.3
	TOTAL	48.1

Wetland Fringe Seeding - Above Water Line:

Common Name	Scientific Name	Rate (Lbs. PLS/ac)
Virginia wildrye	*elymus virginicus*	10.60
Fowl manna grass	*glyceria striata*	0.70
Blue joint grass	*calamagrostis canadensis*	0.70
Prairie cordgrass	*spartina pectinata*	4.00
Fox sedge	*carex vulpinoden*	0.03

Bebb's sedge	*carex bebbii*		0.04
Spike rush	*eleocharis palustris*		0.05
Rice cut grass	*leersia oryzoides*		0.04
Shortawn foxtail	*alopercurus acqualis*		10.60
Cup plant	*silphium prefoliatum*		0.70
		TOTAL	27.46

Pasture Seeding:

Common Name	Scientific Name	Rate (Lbs. PLS/ac)
Alfalfa	*medicago sativa*	4.0
Red clover	*trifolium pratense L.*	6.0
Switchgrass	*panicum virgatum*	5.0
Smooth brome	*bromus inermis*	20.0
	TOTAL	35.0

All the seed mixtures shall include a nurse crop in addition to the species listed above. The nurse crop applied shall depend on the seeding period, as described below:

Spring and Fall Cover Crop (April 1-May 30, and August 15-September 15):
Oats, Avena sativa, 32 lb PLS/ac

Dormant Cover Crop (November 15 to freeze up):
Winter Wheat, triticum aestivum, 45 lb PLS/ac

3.4 LIMING AND FERTILIZING – *Replace Paragraphs C and D with the following paragraphs:*

C. The application rate of agricultural limestone shall be based upon the results of soil tests conducted in accordance with Section 2700, 3.2, Testing, of the Construction Specifications. For bidding purposes, it is estimated the lime shall be applied at the rate of 5 tons of ECCE per acre.

D. The application rate of fertilizer shall be based upon the results of soil tests conducted in accordance with Section 2700, 3.2, Testing, of the Construction Specifications. For bidding purposes, it is estimated that the fertilizer shall be applied at a rate of 40 pounds of nitrogen, 100 pounds of phosphorous, and 200 pounds of potassium per acre.