SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS

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FEAGINS AML RECLAMATION PROJECT

EXPLANATION

A. The purpose of this Section of the Specifications is to provide supplemental information which is required to complete the Standard Construction Specifications and to set forth supplementary requirements, modifications and/or deletions which are required to make the whole of the Construction Specifications project specific.

B. References to Section, Paragraph and Sub-paragraph numbers used in these Supplemental Construction Specifications are intended to coincide with reference numbers for corresponding Sections, Paragraphs and Sub-paragraphs in the Standard Construction Specifications.

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

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

E. The following set of standard specifications, updated May and July of 2025, has been used for this project:

02010 FIELD ENGINEERING
02100 MOBILIZATION
02110 IMPOUNDMENTS
02120 EROSION CONTROL
02200 EARTHWORK ROUGH GRADING
02300 DRAINAGE GENERAL
02400 SUBGRADE PREPARATION WITHOUT COVER
02700 SEEDING

DOCUMENT N - GENERAL CONDITIONS

1-04 ENGINEER

Wes Ferrand, P.E., Snyder & Associates, Inc., 2727 SW Snyder Blvd, PO Box 1159, Ankeny, IA 50023. Tel: 515-964-2020 is the official engineer of record. Mr. Schultz's duties are as described.

SECTION 02010 – FIELD ENGINEERING

1.3 QUALITY ASSURANCE

E. (New Paragraph) Surveys at the project site used by the Engineer in preparing the Plans and Specifications are available for review through the Engineer.

F. (New Paragraph) GPS machine control is highly recommended for this project but not expressly required.

3.2 DIMENSIONS AND ELEVATIONS

B. (New Paragraph) Horizontal measurements are in U.S. Survey feet and are based upon the NAD 83 Iowa Regional Coordinate System, Zone 9.

C. (New Paragraph) Elevation measurements are based upon the NAVD 1988 and are in U.S. Survey feet.

D. (New paragraph) Existing topography shown on this drawing was developed from Lidar information for Marion County, Iowa, which is publicly available through Iowa Geodata at https://geodata.iowa.gov/ .

E. (New paragraph) Additional topographical information was collected by conventional surveying methods and was incorporated into the Lidar.

3.3 POSITION, GRADIENT, AND ALIGNMENT

F. (New Paragraph) In the event of significant discrepancies between the LiDAR-derived elevations shown on the project drawings and those obtained through field surveying equipment, the Contractor shall promptly notify the Engineer or the Division's designated representative. Upon notification, both parties shall jointly investigate and reconcile the differences. The agreed-upon elevation data—determined to be the most accurate and beneficial for the project—shall be documented and incorporated into the as-built records. This documentation must be included as part of the project closeout process.

3.6 STAKE OUTS

C. (New Paragraph) The staking requirements outlined in Paragraph "A" shall be further clarified during the Pre-Construction Meeting. At that time, the Contractor shall identify and confirm the specific project features to be staked. At a minimum, the following features shall be staked:

1. Project boundaries, grading limits, and site access points
2. Terraces, risers, intake structures, emergency spillways, pipe outlet locations, and wetland pools
3. Main ridges

If GPS-guided machine control technology is utilized, staking of certain features may be deemed unnecessary at the Contractor's discretion. Any deviations from the minimum staking requirements must be discussed and agreed upon during the Pre-Construction Meeting and documented accordingly.

SECTION 02100 MOBILIZATION, CLEARING AND SITE PREPARATION

1.1 DESCRIPTION

A. Work included
(Revise) This project does not require work regarding any of the following:

- 6-removal and salvage of existing fencing,
- 7-installation and removal of temporary fencing.

(Revise) Add: 12-Install Access Road.

The installation of the access road shall be paid as a lump sum item and constructed in accordance with the project plans. This includes the installation of either two (2) 30-inch culverts or one (1) 36-inch culvert to accommodate flow from the unnamed tributary stream. The Contractor may use on-site materials or import suitable materials, at their discretion, to construct a safe, durable, and all-weather access road that supports their equipment and operational needs. The Contractor shall install and maintain appropriate erosion control measures—such as silt fence or wattles—along the temporary access road to prevent sediment from entering the unnamed tributary stream. These erosion control measures are considered incidental to the lump sum bid item and will not be paid for separately. Refer to Item 1 – Bid Quantity Notes on Sheet 2 for additional information.

(Revise) Add: 13-Remove Access Road.

Removal of the access road shall be paid as a lump sum item. This work includes full obliteration of the temporary access road and restoration of the area to its original condition and/or grading to match proposed contours. Restoration activities shall include seeding, mulching, and application of fertilizer. This item also includes the removal of all culverts installed for the access road, as well as any erosion control measures such as silt fences or wattles. These components are considered incidental to the lump sum bid item and will not be paid for separately. Note: If the landowner elects to remove the access road independently, this lump sum item will not be paid to the Contractor.

1.3 QUALITY ASSURANCE

D. (Revise) Add: Tree removal and/or activities related to the felling of trees must occur after September 30 and before April 1. Additional guidelines and information regarding the endangered Indiana Bat can be found at the following link:

http://www.fws.gov/midwest/endangered/mammals/inba/

1.4 JOB CONDITIONS

J. (Revise) Add: During the Pre-Construction conference, the anticipated project limits will be discussed. Engineer, Project Coordinator, and the Contractor may walk the site with the landowner to identify any trees that may need to remain undisturbed and also review and any other special circumstances.

3.1 SITE ACCESS

A. (Revise) Add:

1. Designated access roads shown on the Plans and used by the Contractor shall be maintained to allow reasonable access for four-wheel drive vehicles. Secondary access or haul roads not indicated on the Plans shall be approved by the Engineer and reclaimed after use in accordance with Section 02400 and 02700. Contractor shall repair any damage to access or haul roads at no cost to the Division. Access road and haul road construction and maintenance shall be considered subsidiary to Mobilization/Demobilization.

E. (Revise) Add: On 202nd Place, located approximately 0.37 miles east of the project site, a one-lane bridge exists. This bridge is not posted for reduced loads. Legally loaded trucks and trailers may cross this bridge without an overweight permit. Hauling larger construction equipment may require an overweight permit. Dozers, loaders, backhoes, and other heavy construction that normally must be trailered for transport may not cross this bridge without being trailered.

Contact Brian Hatch at the Marion County Road Department to confirm the need for an overweight permit: (email) bhatch@marioncountyiowa.gov OR (phone) 641-828-2225.

Other restrictions may apply.

3.4 OFFICE AND LAY-DOWN AREA

A. (Revise) Add: No preferred construction staging, equipment storage, and materials lay down area has been identified other than the requirement to stay within the property and off of public roads. This will be discussed further during the Pre-Construction conference. Any changes to the Staging areas after the Pre-Construction conference must be submitted by the Contractor and approved by the Landowner, and acceptable to the Division and the Engineer.

B. Contractor's Field Office

1. (Revised) Contractor's Field Office is not required except that sanitary facilities shall be provided.

2. (Added Language) The Contractor shall make certain that his representative on site has an operating cellular phone that can be used for communication with Engineer and Division.

C. (Revised) Amenities required with the offices outlined in this section are not required except that sanitary facilities shall be provided.

3.8 DEBRIS REMOVAL AND DISPOSAL

A. (Revision) Add: Metal refuse shall not be buried on the site. To the extent practicable, Contractor is encouraged to salvage scrap metal at a metal recycling facility.

4.1 MEASUREMENT AND PAYMENT

B.3 (Added Language) For special items such as tires, the Contractor shall collect and sort them into a designated pile at a convenient, pre-approved location on-site. The labor associated with collecting, sorting, and stacking the tires shall be considered incidental to the "Clearing and Site Preparation" bid item and will not be paid for separately.

The cost for removal, transportation, and disposal of the tires at an approved facility shall be negotiated separately with the Contractor. This negotiated cost may include reasonable handling and freight charges. The agreed-upon cost must be clearly itemized on an invoice submitted by the Contractor and supported by disposal tickets or invoices from the receiving facility.

If other special items are encountered during the course of work, their removal and disposal will be handled in a similar manner.

SECTION 02110 – IMPOUNDMENTS

2.1 NEUTRALIZING MATERIALS

B. (new material) Liquid Caustic Soda (NaOH) CAS-No. 1310-73-2, shall be a technical, or better, grade solution containing no less than 20% and no greater than 25% sodium hydroxide by volume. Maximum iron content shall be no greater than ten (10) ppm. Maximum Chloride content shall be no greater than two hundred (200) ppm. Maximum sodium carbonate content shall be no greater than two-tenths of one percent (0.2%) by weight.

2.2 DELIVERY STORAGE AND HANDLING

A. (Added/modified) Deliver liming agents to the site in their original container with all labels or certificates intact and legible for Engineer's inspection.

1. (additional language) The liquid caustic soda shall be shipped to the site in 275-gallon corrosive resistant containers enclosed within a metal cage. Containers of this type are typically known as "totes."

2. Containers shall include corrosion resistant valves and/or caps to allow release of the product inside.

3.2 PRECAUTIONS (added/modified)

A. (additional language) insert "and Caustic soda" after "Hydrated lime"
B. Contractor shall provide the proper safety gear for workers handling the caustic soda including, at a minimum, goggles, face shield and long rubber gloves. Wearing a chemical resistant hazmat suit is strongly recommended.
C. To prevent creating hydrogen gas, liquid caustic soda must not be allowed to contact aluminum surfaces.

3.6 WATER TREATMENT (IMPOUNDED WATER BODIES REQUIRING NEUTRALIZATION PRIOR TO DISCHARGE)

H. (additional language) Similar procedures must be followed when using Caustic soda as the neutralizing agent.

3.8 TREATMENT AND DISCHARGE SUMMARY

A. (Revised) The Contractor shall provide a minimum of two rounds of composite water sampling for all water bodies located on-site. The first round of samples shall be collected and tested prior to any discharge activity. A second round shall be conducted following any required treatment, which is anticipated for all water bodies. If initial treatment and testing do not result in discharge parameters that meet regulatory or project requirements, or if site conditions change during discharge operations, additional rounds of composite sampling may be required. The Contractor shall be prepared to perform these additional sampling rounds as necessary to ensure compliance.

4.1 MEASUREMENT AND PAYMENT – Unit Prices

A. (revised and added language) Liquid Caustic Soda, 20%-25%: This unit price shall include all costs for neutralizing agent, freight, and application. The payment quantity for neutralization of acid water shall be the actual number of gallons of Caustic Soda used for treatment of the acid water. The quantity of product used shall be estimated from markings on the container to the nearest ten (10) gallons.

4.2 SUMMARY – UNITS OF MEASURE (revised language)

Proposal Bid Items applicable to work covered by this SECTION are as follows:

Description	Unit
Liquid Caustic Soda, 20-25%	Gallon
Hydrated Lime	Ton
Impoundment Discharge	Lump Sum

SECTION 02200 – EARTHWORK, ROUGH GRADING

1.3 QUALITY ASSURANCE

D. (New Paragraph) GPS Machine Mounted Grade Control Equipment

1. The Contractor's attention is specifically called to the recommendation for the Contractor to provide GPS Machine Mounted Grade Control Equipment for finishing of the final design surface. The reclamation plan incorporates natural landform grading and traditional terrace techniques, which precludes the use of uniform slopes, and is difficult to represent with traditional grade control staking.

2. If GPS Machine Mounted Grade Control Equipment is used, the Contractor should provide competent, task-trained personnel to operate and maintain the GPS equipment. If used, the Contractor shall supply the GPS equipment ready to use including all base stations, radios, repeaters, receivers, and machine mount units necessary to perform the work.

3. If GPS Machine Mounted Grade Control Equipment is used, the Engineer will provide survey control points to the Contractor, and will provide Digital Terrain Model (DTM) files in an electronic format compatible with the Contractor‘s GPS equipment.

1.4 JOB CONDITIONS

C. Earthwork Balance

3. (Added Language) The Shrinkage Factor for the proposed grading is assumed to be 15% for mass balance.

SECTION 02300 – DRAINAGE SYSTEMS, GENERAL

2.15 GRANULAR BEDDING (NEW SECTION)

A. Granular bedding shall consist of well-graded durable aggregate placed in the thicknesses shown on the Plans. See Sheet 13. All material comprising the granular bedding shall be composed of durable particles reasonably free of sharp or angular particles capable of puncturing the filter fabric.

B. The aggregate shall have a gradation that conforms to the Iowa Department of Transportation specifications for pipe bedding material, Gradation No. 3. Refer to IDOT Section 4118.

Sieve Designation	Gradation No. 3 Percent Passing
1 ½"	100%
1"	100%
½"	25-60%
Less than No. 4	0- 10%

3.5 TERRACES

A. (Revised) After placement and approval of controlled general fill areas, terraces shall be installed during and as a part of rough grading. The earthwork volume to construct the terraces is included in the overall excavation earthwork balance for the project. Refer also to Supplemental Specification.

C. (New Paragraph) Terraces shall be maintained according to "Section 02200 – Earthwork, Rough Grading-3.13 Maintenance". Flowlines shall be cleared of accumulated sediment and approved by the Engineer or Construction Observer, prior to application of lime or fertilizer as part of both the subgrade preparation and seeding operations.

3.6 TILING AND PIPE

A. Tiling

10. (New Paragraph) Tiles discharging on-site shall have an outlet rip rap apron measuring 5' x 10' and be 2' foot thick pool as referred to on Sheet 7. Requisite fabric considered incidental.

SECTION 02400 – SUBGRADE PREPARATION

3.4 WETLAND AREAS – WITHOUT COVER MATERIAL

G. (New Paragraph) Final Grading of Wetland Bottom

1. Following rough grading and incorporation of agricultural lime and mulch, strike off or blade wetland bottoms with tracked equipment to leave a smooth and firm surface prior to introducing water into the wetland pool.

2. Cost for final grading of wetland bottoms is incidental to this project.

H. (New Paragraph) Removal of Accumulated Water and Sediment in Wetland Bottoms

1. If water and sediment has been allowed to accumulate in the bottoms of wetland areas prior undercut, replacement, and final grading operations, the water and sediment shall be removed to facilitate the required work.

2. Methods used to remove accumulated water include pumping and diversionary channels. Other methods shall be subject to approval by Engineer or Construction Observer.

3. Accumulated sediment shall be removed with appropriate equipment using methods approved by the Engineer or Construction Observer.

4. Costs for the removal of water and sediment shall be considered incidental to the project.

SECTION 02700 – PERMANENT SEEDING

2.4 SEED

D. Seed Mixture (add/modify)

1. The upland seed mixture for the reclaimed mine area, within the project limits, shall be as shown below in Table 02700-1. Seed the appropriate cover crop species with the upland seed mixture dependent upon the season in which the seed mix is sown.

2. Choose one (1) cover crop option from Table 02700-2 in consultation with Engineer and Division.

3. The wetland fringe seed mixture shall be as shown on Table 02700-3. This mix shall be applied in the specific area around the wetlands shown on the Plans. To the extent practicable, the wetland mix shall be sown so that the specified bandwidth of the seeded area straddles the contour at the normal pool elevation. Lower wetland pool elevation if necessary prior to seeding the wetland fringe mix. Seeding the wetland fringe mix may require substantial work with small power equipment and/or hand tools.

Table 02700-1. Upland Seed Mix

Common Name	Scientific Name	Seed Rate (PLS/ac)
Partridge pea	Chamaecrista fasciculata	4.0
Alsike clover	Trifolium 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 wildrye	Elymus virginicus	6.7
Big bluestem	Andropogon gerardii	5.3
Little bluestem	Schizachyrium scoparium	4.0
Indiangrass	Sorghastrum nutans	4.0
		Total 48.1

Table 02700-2. Cover Crop Seed Mix Options
(Select one (1) in consultation with Engineer and Division)

Common Name	Scientific Name	Seed Rate (PLS/ac)
Spring Cover (April 1 – May 30)		
Oats	Avena sativa	32
Dormant Cover (November 15 – Freeze Up)		
Winter wheat	Triticum aestivum	45
Dual-Season		
Oats + Winter Wheat (each of above)		16 (Oats) + 30 (Wheat)

Table 02700-3. Wetland Fringe Seed Mix

Common Name	Scientific Name	Seed Rate (PLS/ac)
Virginia wildrye	Elymus virginicus	10.60
Fowl mannagrass	Glyceria striata	0.70
Bluejoint grass	Calamagrostis canadensis	0.70
Prairie cordgrass	Spartina pectinate	4.00
Fox sedge	Carex vulpinoidea	0.03
Bebb's sedge	Carex bebbii	0.04
Spikerush	Eleocharis palustris	0.05
Rice cutgrass	Leersia oryzoides	0.04
Shortawn foxtail	Alopercurus aequalis	10.60
Cup plant	Silphium prefoliatum	0.70
	Total	27.46

3.4 LIMING AND FERTILIZING

C. For bidding purposes, assume the application rate of "Agricultural Lime, Seeding" is five (5) tons ECCE per acre.

D. For bidding purposes, assume the following application rates:

Fertilizer Rate	(lbs/ac)
Nitrogen (N)	40
Phosphorous (P)	150
Potassium (K)	200

4.0 MEASUREMENT AND PAYMENT

4.1.B.4. (Revised/add) Seeding: The unit prices for Upland and Wetland Fringe Seeding shall also include all costs associated with cover crop seeding.

- ***END OF SUPPLEMENTAL SPECIFICATION*** -