SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS

SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS
CROZIER FAMILY 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 supplemental 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 Specification.

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 the paragraphs contained in these Supplemental Construction Specifications intended only to supplement, amplify, or clarify said Standard Construction Specifications.

E. The following set of standard specifications (updated July/August 2025), is used for this project:

02000	SUBSURFACE INVESTIGATION
02010	FIELD ENGINEERING
02100	MOBILIZATION, SITE CLEARING & PREPARATION
02120	SEDIMENT AND EROSION CONTROL
02200	EARTHWORK, ROUGH GRADING
02300	DRAINAGE SYSTEMS, GENERAL
02400	SUBGRADE PREPARATION
02500	FENCING
02700	PERMANENT SEEDING

SECTION 02010 – FIELD ENGINEERING

1.3 QUALITY ASSURANCE

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

3.2 DIMENSIONS AND ELEVATIONS

B. *(New Paragraph)* Horizontal measurements are in U.S. feet and are based upon the NAD83 Iowa State Plane Coordinate System, South Zone.

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

D. *(New Paragraph)* Existing topography shown on this drawing was developed from LiDAR information by engineer and supplemental topographic survey data. LiDAR data was collected on 03-27-2024.

3.3 POSITION, GRADIENT, AND ALIGNMENT

F. *(New Paragraph)* Should there exist significant differences between the LiDAR elevations shown on the drawings and those reported by the surveying equipment, the Contractor shall direct his surveyor to calibrate the GPS instruments to the LiDAR elevations shown.

3.6 STAKE OUTS

C. *(New Paragraph)* The construction staking requirements stipulated in Paragraph "A" is further clarified as follow; required construction staking shall include the following with applicable elevation information for proper construction:

1. Project boundary and access route
2. Wetland Pool
3. All channels
4. Main ridges

If GPS guided Machine Control is used, Items 2, 3, and 4 may be waived.

SECTION 02100 – MOBILIZATION, SITE CLEARING & PREPARATION

1.3 QUALITY ASSURANCE

D. *(Additional Language)* Additional guidelines and information regarding the endangered Indiana Bat and Northern Long Eared Bat can be found at the following links:
http://www.fws.gov/midwest/endangered/mammals/inba/
https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

1.4 JOB CONDITIONS

J. *(New Paragraph)* The access route and staging area shall be clearly staked per requirements stated in SECTION 02010. Once construction is complete, the staging area must be seeded using Pasture Seed Mix as specified in SECTION 02700 of these Supplemental Specifications.

3.3 PROTECTION

E. *(Revised)* Contractor shall maintain access to the site at all times.

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.

2. All traffic control devices and operations dealing with public traffic and roadways shall be in accordance with applicable Iowa laws and the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Traffic control devices shall be installed prior to initiating grading activities.

3. The Contractor shall be responsible for the safe movement of mobile equipment.

4. The Contractor shall be responsible to reimburse the landowner for livestock or other property injured or damaged by Contractor's traffic on access roads.

5. The Contractor shall be responsible for protecting existing underground utilities within project limits and access route.

3.4 OFFICE AND LAYDOWN AREA

B. *(Revised)* Contractor's field office is not required for this project. 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.

3.10 CLEAN-UP AND REPAIRS

C. *(Additional Language)* Removal of granular surfacing and ripping and restoring the surface at the site access shall be incidental to Mobilization. Restoring of the surface at the site access to conditions prior to construction shall include rototilling compacted areas, repairing gravel drive, and application of seed, fertilizer, and mulch.

SECTION 02120 – SEDIMENT AND EROSION CONTROL

1.1 DESCRIPTION

C. (*Additional Language*) The Contractor must comply with the SWPPP and advise the Division and the Engineer if any sediment or erosion control measures will be required to protect the area or work from imminent inclement weather. With approval and direction from the Division and the Engineer, the Contractor shall install additional Best Management Practices (BMPs) where necessary.

3.3 INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES

O. (*New Paragraph*) Tied Concrete Block Mat

1. Prior to placing the tied concrete block mats, prepare the subgrade as outlined in SECTION 02400 and as detailed on the plans. All subgrade surfaces prepared for placement of mats shall be firm, smooth, and free of all rock, stones, sticks, roots, other protrusions, or debris of any kind. Prepared subgrade elevation prior to placing the mat shall be the design elevation shown on the plans.

2. The prepared surface shall provide a firm unyielding foundation for the mats with no sharp or abrupt changes or breaks in the grade.

3. Apply seed and fertilizer directly to the prepared soil beneath the mat location prior to installation of the Tied Concrete Block Mat. Apply seed and fertilizer per project specifications.

4. Install Tied Concrete Block Mats to the line and grade shown on the plans and according to the manufacturer's installation guidelines. Be certain to provide anchor trenches at the locations and depths specified.

5. When creating longitudinal seams, install each edge of mat in tight contact with the other. Place geogrid extension of the one mat under the other; tie mats together with stainless steel zip ties. Install at least one (1) tie between every two (2) blocks.

6. Fasten the Tied Concrete Block Mat to the soil surface with epoxy coated rebar U-anchors per manufacturer recommendations.

7. Engineer or Construction Observer shall be present when installing the mat. In addition, the manufacturer or his representative shall be available to provide technical assistance during the slope preparation and installation of the tied concrete block mats as needed.

4.1 UNIT PRICES AND PAYMENT CALCULATION

B. Measurement and Payment

8. *Check Dams:* (*Revised Language)* Temporary rock check dams shall be considered incidental to the cost of riprap. Filter fabric used beneath the riprap will not be measured for payment and shall be considered incidental. Excavation costs and distribution of the soil materials are considered incidental and shall not be measured separately for payment.

15. *Sediment Basin Outlet Structures:* (*Revised Language*) Earthwork required for construction of the sediment basin will be incidental to excavation. Earthwork required to restore the basin to final design grade of the permanent wetland, as indicated on the Plans, will be incidental to excavation.

4.2 SUMMARY – UNITS OF MEASUREMENT

Description	Unit
Quarried Stone (Riprap, Erosion Stone, Macadam Stone or similar	Ton
~~Surface Roughing~~	~~Acre~~
~~Erosion Control Mulching~~	~~Acre~~
~~Compost Blankets~~	~~Square Foot~~
~~Temporary Erosion Control Seeding~~	~~Acre~~
Temporary Earth Diversion Structures	Linear Foot
~~Silt Fence – Installation~~	~~Linear Foot~~
~~Check Dams – Temporary~~	~~Linear Foot~~
~~Check Dams – Permanent~~	~~Ton~~
~~Filter Berms~~	~~Linear Foot~~
Filter Sock – Installation	Linear Foot
~~Wattles – Installation~~	~~Linear Foot~~
~~Temporary Rolled Erosion Control Products~~	~~Square Yard~~
~~Turf Reinforcing Mats~~	~~Square Yard~~
Tied Concrete Block Mat	Square Foot
~~Sediment Basin Outlet Structures – Installation~~	~~Lump Sum~~
~~Sediment Basin Outlet Structures – Cleanout~~	~~Lump Sum~~
Stabilized Construction Entrance	Ton

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.

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

1. *(Additional Language)* The shrinkage factor is presumed to be 15% for mass balance. Mass balance adjustment areas, if required, will be determined in the field.

3.9 FILL PLACEMENT AND COMPACTION

G. (Additional Paragraph) Deep Fill Zones

1. Zones requiring placement of fill deeper than fifteen feet (15’) shall require extra time to allow for settlement of the soil. Once each increment of 15’ of fill is achieved at least thirty (30) days shall be allowed to elapse before performing additional fill operations in that zone. The waiting period may be reduced to no less them fifteen (15) days provided Contractor documents with detailed daily survey measurements that the majority of the settlement has occurred within the first 15-day waiting period. Establishment of benchmark locations for the survey measurement shall be subject to Engineer’s approval.

SECTION 02300 – DRAINAGE SYSTEMS, GENERAL

1.1 DESCRIPTION

A.3. *(Revised)* Terraces shall be installed during rough grading. The earthwork volume to construct the terraces is included in the overall excavation balance for the project.

3.5. TERRACES

A. (*Revised Language*) 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.

4.1 UNIT PRICES

A. Measurement and payment

1. Terrace: (*Revised Language*) The cost for rough terrace construction and compaction shall be considered incidental to and included in the unit price for *Excavation* as referenced in SECTION 02200. The unit price for terraces in this SECTION shall include material, equipment, and work required to finish grade the terraces in conformance with details and dimensions shown on the plans. Finish grading the terraces includes overbuilding the terrace where specified. The length shall be measured along the centerline of the terrace. The maximum payable length for installed terraces shall be the bid plan quantity.

7. Filter Fabric: (*Revised Language*): When used as underlayment for macadam, riprap, or erosion stone the cost of the filter fabric shall be considered incidental to and included in the price of said stone.

4.2. SUMMARY – UNITS OF MEASUREMENT

Description	Unit
Terraces	Lineal Foot
Riser - Terrace	Each
Open Sided Intakes	Each
~~Tiling (size)~~	~~Lineal Foot~~
Pipes – (size)	Lineal Foot
~~Outlet Pipe – (size)~~	~~Each~~
~~Filter Fabric~~	~~Square Yard~~
~~Grout~~	~~Cubic Yard~~

SECTION 02400 – SUBGRADE PREPARATION, WITHOUT COVER MATERIAL

3.4 WETLAND AREAS – ***WITHOUT*** COVER MATERIAL

G. (*New Paragraph*) Final Grading of Wetland Bottoms

1. Following undercut, replacement, and incorporation of agricultural lime and mulch, strike off or blade wetland bottoms with tracked equipment to leave a smoothed, firm surface prior to introducing water into the wetland area.

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

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 to 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.

3.6 LIME-MULCH APPLICATION – ***WITHOUT*** COVER MATERIAL

A. Application Rates

1. *(Additional Language)* Contractor shall use an "Agricultural Lime" application rate of 40 tons ECCE per acre for bidding purposes.

3.8 (New Section) DEEP RIPPING

A. *(New Paragraph)* Portions of the site are planned for future tree plantings by others. De-compaction of the soils in these areas will improve sapling survival rates and growth potential. These zones are shown on the plans. These zones will require deep ripping to a minimum depth of 24" prior to subgrade lime and mulch application. Deep ripping shall be achieved by use of a ripper implement on bulldozer or by other approved equipment. The shank(s) of the ripper shall

penetrate a minimum of 24" into the soil measured from the soil surface. The maximum spacing of rips created by the shank shall be 24". Ripping will only require one pass in one direction if full depth can be achieved. Multiple passes or cross ripping may be completed to loosen soil so that 24" deep shank penetration can be achieved. Contractor shall demonstrate to Engineer and Division the method and equipment which will be used to achieve a minimum depth of 24" for deep ripping. When an acceptable method is agreed to by the Engineer and Division, that method shall be used in the designated zones throughout the project.

4.1 UNIT PRICES

B. Measurement and payment

6. (New Paragraph) Deep Ripping: Contractor's unit price for deep ripping shall constitute full payment, equipment, and labor to provide deep ripping in the zones identified on the plans. Payment for the deep ripping area will be based upon the areas as shown on the plans rounded to the nearest tenth (0.1) acre. Any approved field adjustments made will be measured jointly by Contractor and Engineer. The total area for payment is only counted once.

4.2. SUMMARY – UNITS OF MEASUREMENT

Description	Unit
Subgrade Preparation	Acre
Agricultural Lime	Ton (ECCE)
Mulch, Subgrade	Acre
Wetland Fertilizer	Pound (active ingredient)
Wetland Undercut and Replacement	Acre
Deep Ripping, Subgrade (New)	Acre

SECTION 02500 – FENCING

2.2 POSTS AND BRACING

A. Posts

1. *(Revised Language)*: All posts shall be creosote treated for ground contact.

SECTION 02700 – PERMANENT SEEDING

2.4 SEED

D. *(Additional Language)* Seed Mixture:

1. The pasture seed mixture shall be as shown on **Table 02700-1**. Seed the appropriate cover crop species with the pasture seed mixture dependent upon the season in which the seed mix is sown. Choose one (1) cover crop option from **Table 02700-2** in consultation with Engineer and Division.
2. 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. Pasture Seeding Mix

Common Name	**Scientific Name**	**Seed Rate (Lb. PLS/ac)**
Alfalfa	*medicago sativa*	4.0
Alsike clover	*trifolium hybridum*	2.5
Big Bluestem	*Andropogon gerardi*	6.5
Birdsfoot Trefoil	*Lotus corniculatus*	5.5
Illinois bundleflower	*Desmonthus illinoienis*	4.0
Indian grass	*Sorghastrum nuntans*	7.0
Little bluestem	*Schizachyrium scoparium*	5.5
Orchard grass	*Dactylis glomerata*	6.5
Red top	*Agrostis gigantea*	4.0
Smooth brome	*Bromus inermis*	5.5
Timothy	*phleum pratense*	2.5
Virginia wild rye	*Elymus virginicus*	5.5
Total		**59.0**

Table 02700-2. Cover Crop Options

Select one (1) in consultation with Engineer or Division

Season	**Common Name**	**Scientific Name**	**Seed Rate Lb. (PLS/ac)**
Spring	Oats	*avena sativa*	32
Dormant	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 Lb. (PLS/ac)
Virginia wild rye	*elymus virginicus*	10.60
Fowl manna grass	*glyceria striata*	0.70
Bluejoint 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**

3.4 LIMING AND FERTILIZING

D. *(Additional Language):* For bidding purposes, assume the application rate of Nitrogen is fifty (50) pounds per acre, Phosphorous is one hundred (100) pounds per acre, and Potassium is one hundred sixty (160) pounds per acre.

END OF SUPPLEMENTAL SPECIFICATION