

SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS

**SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS
MEMMELAAR WEST 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 intended only to supplement, amplify, or clarify said Standard Construction Specifications.
- E. The following set of standard specifications **(2025 edition, unless noted otherwise)** is used for this project:
- 02010 FIELD ENGINEERING
 - 02100 MOBILIZATION, CLEARING AND SITE PREPARATION
 - 02110 IMPOUNDMENTS
 - 02120 SEDIMENT AND EROSION CONTROL
 - 02200 EARTHWORK, ROUGH GRADING **(updated May 2026)**
 - 02300 DRAINAGE SYSTEMS, GENERAL
 - 02400 SUBGRADE PREPARATION
 - 02500 FENCING
 - 02700 PERMANENT SEEDING
- F. **Engineer:** *(per General Conditions 1-04)* Wallace J. Greenlees, P.E., Division of Soil Conservation and Water Quality, 1305 E. Walnut Street, Des Moines, Iowa 50319. Tel: 515-669-9177

SECTION 02010 – FIELD ENGINEERING

1.2 QUALITY ASSURANCE

- E. *(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 State Plane Coordinate system, South Zone.
- 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 Mahaska County, Iowa, which is publicly available through Iowa Geodata at <https://geodata.iowa.gov/>. Lidar data was collected in 2020 and published in 2021. It was made possible through a program of the Iowa Department of Natural Resources.

- E. *(new paragraph)* Additional topographical information was collected by conventional surveying methods and was incorporated into the Lidar dataset.

3.3 POSITION, GRADIENT, AND ALIGNMENT

- F. *(new paragraph)* Four (4) durable local control points were established for this project. If any additional control points are required, the Contractor shall direct his Surveyor to establish any additional control points as necessary to facilitate proper construction staking.
- G. *(new paragraph)* If significant differences exist between the Lidar elevations shown on the drawings and those reported by the surveying equipment, the Contractor shall direct his surveyor to calibrate the survey instruments to the Lidar elevations shown on the drawings.

3.6 STAKE OUTS

- C. *(new paragraph)* The construction staking requirements stipulated in Paragraph "A" is further clarified as follows; required construction staking shall include the following with applicable elevation information for proper construction:
1. Project Boundary, Grading limits, and Access Route
 2. Locations of pipe outlets, risers, and intake structures
 3. Wetland Pools
 4. Terrace Channels
 5. Terrace Ridges
 6. Fence

If GPS guided Machine Control is used, Items 2, 3, 4 & 5, may be waived

SECTION 02100 - MOBILIZATION, CLEARING AND SITE PREPARATION

1.3 JOB CONDITIONS

- J. *(added language)* The access route should be clearly staked per requirements stated in SECTION 02010, 3.6, A. Once construction is complete, the access route must be restored to its original or better condition.
- K. *(added paragraph)* During the pre-construction conference, the anticipated project limits will be discussed. Engineer, Project Coordinator, and Contractor may walk the project limits with the landowner to identify any trees to remain undisturbed. If any trees are identified, they will be marked at that time.

3.4 OFFICE AND LAYDOWN AREA

- B. A Contractor's 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. Amenities required with the offices outlined in this section are not required except sanitary facilities shall be provided.

3.6 EXISTING FENCES

- A. *(added language)* See plans for locations of fence to be replaced. Fences outside of the project boundary should be tied off at the nearest stable post and be preserved unless otherwise indicated on the plans or unless separate arrangements with the Landowner provide for their removal. Where the fence is cut, sufficient wire shall be preserved for connection to the new fence. Any costs for fence removal outside the project boundary, not specified on the plans, shall not be paid by the Division. Any gates or wire panels encountered during fence removal shall be salvaged to Landowner in good, serviceable condition.

3.8 DEBRIS REMOVAL AND DISPOSAL

- A. *(added language)* 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. **Division requested Landowner remove all scrap metal or other items he wishes to keep before the project was let. Unless other arrangements are made, privately, with Landowner, all scrap metal, harvestable trees, and waste encountered within the project boundary becomes property of Contractor.**

3.10 CLEANUP AND REPAIRS

- C. *(revised and added language)* All disturbed areas outside the Grading Limits, such as access routes and lay down areas, shall be returned to their original condition by the Contractor at no additional cost to the Division. Restoration of these areas are subject to the approval of the Engineer and/or Division. *Rock surfacing for the access route, approved by Division, in addition to that specified on the plans shall be considered permanent; its removal is not required.*

4.1 UNIT PRICES

- B., 1., e. *(new language)* The remaining portion of mobilization greater than 5% of the total bid will be paid upon completion of all work.

- B., 3. *Off-site Waste Disposal (added language)* For special items like tires, the contractor shall collect and sort tires into a pile at a convenient, approved location onsite. The work of collecting, sorting, and stacking the tires shall be incidental to "Clearing and Site Preparation". The cost for the actual removal, transport, and disposal of the tires at an approved facility shall be negotiated with the contractor. The agreed cost for tire disposal may include reasonable handling and freight costs. The agreed cost of tire disposal must be identified on an invoice from the contractor, and it must be supported by tickets or invoices from the disposal facility. Payment for disposal of other special items, if encountered, will be handled in a similar fashion.

SECTION 02110 - IMPOUNDMENTS

No supplemental specifications are provided for this SECTION.

SECTION 02120 – SEDIMENT AND EROSION CONTROL

3.3 INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES

- N. Stabilized Construction Entrance
1. *(additional language)* Construct Stabilized Entrance according to the instructions and detail(s) included with the plans.
 2. Excavation is only required to the extent necessary to smooth the soil surface prior to installation of the crushed stone.
 3. **Consult Engineer about use of filter fabric under macadam stone.** If specified on the plans or if directed by Engineer, place macadam stone over filter fabric. Cost of filter fabric is incidental bid unit price for macadam stone.
 4. Unless otherwise directed by Division, quantities of Crushed stone in gross excess, greater than fifteen percent (15%), of that specified for construction of the stabilized entrance shall be considered incidental to Mobilization.

SECTION 02200 - EARTHWORK, ROUGH GRADING

1.3 JOB CONDITIONS

- C. Earthwork Balance
1. *(added language)* The shrinkage factor is assumed to be 5% for the mass balance. Mass balance adjustment areas, if required, will be determined in the field with consultation of Engineer. The overall mass balance for the project includes the fill volume for the construction of all terrace ridges and channels.

3.9 FILL PLACEMENT AND COMPACTION

- H. Deep fill zones: *(added paragraph)* 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 than 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 survey measurement shall be subject to Engineer's approval.

SECTION 02300 – DRAINAGE SYSTEMS, GENERAL

2.3 OUTLETS FOR TILING OR PIPE

- D. *(revised language)* Non-perforated DWPE shall not be substituted for PVC Schedule 40 outlets on this project. However, Dual-wall PPHP is considered an acceptable alternative for PVC for 12" and larger diameters. **When connecting the PVC or PPHP outlet to DWPE, a mar mac or approved equal flexible coupler shall be used.**

2.5 TERRACE RISERS AND OPEN SIDED AREA INTAKES

A. TERRACE RISERS

3. *(revised and added language)* Perforated mid-section below ground is recommended. Tape over all prefabricated holes with tile tape except top twelve inches (12") immediately below finished grade. If a non-perforated mid-section was procured, field drill sixteen (16) equally spaced, 5/16" dia. holes, in four (4) equally spaced rows with four (4) holes per row in the top twelve inches (12") below finished grade.

2.6 GEOSYNTHETIC (GEOTEXTILE) FABRICS *(re-named part)*

- A. *(revised language)* Filter fabric: Filter fabric shall be understood to mean non-woven fabric comprised of randomly placed needle-punched, resin bonded, or heat bonded synthetic fibers. Filter fabric shall meet the requirements of IDOT 4196.01-B 3, Embankment Erosion Control.

3.6 TILING AND PIPE

6. *(revised language)* Granular backfill around pipe: where specified on the plans, construct a backfill envelope around the pipe using 1" clean angular crushed stone (Class 1 granular backfill). The envelope shall conform to the minimum trench width specified in the plans. The length of the granular backfill zone shown on the plans shall be considered the minimum length. The granular backfill shall be consolidated under the pipe haunches, and it shall be compacted with suitable tamping or vibratory equipment. The entire pipe envelope with the granular backfill shall be encased within filter fabric. Details on the plans shall be followed. The cost of the granular backfill and filter fabric is incidental to the cost of the pipe. See the plans for additional details.

4.1 UNIT PRICES

- B., 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.

SECTION 02400 – SUBGRADE PREPARATION, WITHOUT COVER MATERIAL

3.3 WETLAND AREAS

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 the bid unit price for Wetland Undercut & Replacement.

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.

3.4 LIME-MULCH APPLICATION

B. Incorporation

1. *(added language)* to facilitate full-depth incorporation, Engineer may require ripping to loosen areas of hardened soil prior to incorporation of ag lime and mulch. Unless specifically approved by the Engineer for areas not accessible with a disk. Ripping, alone, shall not be the sole substitute for disking to achieve full-depth incorporation.

SECTION 02500 – FENCING

2.2 Posts and Bracing

A. Posts

1. *(added language)* Creosote treated wood posts are acceptable and preferred.

SECTION 02700 – SEEDING

2.4 SEED

C. Seed Mixture:

1. The upland pasture seed mixture for the reclaimed mine area, within the project limits, shall be as shown on **Table 02700-1**.
2. The wetland fringe seed mixture shall be as shown on **Table 02700-2**. This mix shall be applied in the specific area just inside the wetland perimeter at normal pool elevation as shown on the drawings. To the extent practicable, the wetland mix shall be sown so that the specified bandwidth of the seeded area lies immediately inside 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. Seed-to-soil contact must be achieved.
3. Seed the appropriate cover crop species with the seed mixtures dependent upon the season in which the seed mix is sown. Choose one (1) cover crop option from **Table 02700-3** in consultation with Engineer and Division.

4. Species substitution is allowed in consultation with Engineer and with prior Division approval. Substituted species should have similar bloom periods and similar seeds/sq. foot coverage to the species being replaced.

2.5 FERMENTED BIOTIC SOIL ADDITIVE *(new material)*

- A. A granular organic nutrient source derived from fermented plant material along with nutrients such as cottonseed meal, soybean meal, corn or wheat meal and trace elements all under constant sterile conditions with and organic values that meet the following specifications:
 - Organic Matter > 70%
 - Organic Carbon > 40%,
 - Carbon/Nitrogen ratio 5:1
 - Nitrogen (total) 6 - 7%
 - Nitrogen (water soluble) < 0.5%
 - Phosphorus (P₂O₅) 1–4%
 - Potassium (K₂O) 0 – 2 %
 - pH level of 6.5 – 7.5

B. Nutrients shall not contain any urea, animal waste, animal by-products or sewage material.

C. A commercially available product known to satisfy the above requirements is: BioSol Forte *(or an approved equal)*

3.4 LIMING, FERTILIZING AND APPLYING SOIL ADDITIVES *(revised title)*

E. Apply Fermented Biotic Soil Additive by broadcasting over the soil surface. Do so immediately before or immediately after seeding, but before mulching. Incorporate lightly, do not perform tillage deeper than one inch (1").

3.5 SEEDING

D. Seed Placement:

1. *(added language)* The cover or nurse crop seed, ONLY, may be sown using broadcast seeding equipment in a separate pass before the permanent seed is sown, provided methods, like culti-packing, are used to ensure sufficient seed-to-soil contact for the cover crop.

4.1 UNIT PRICES AND PAYMENT CALCULATION

B., 3. *(added language)* A sample calculation for the payment quantity of N, P, & K is provided as follows:

Assume soil test recommendations require 1000 pounds of di-ammonium phosphate (DAP) and 1000 pounds of potash to be delivered to the site;

- DAP is 18-46-0, that is to say 18% Nitrogen (N), 46% Phosphorous (P), and 36% inert material;
- 1000 pounds of DAP contains 180 pounds (units) of Nitrogen active ingredient and 460 pounds (units) of Phosphorous active ingredient;
- Potash is 0-0-60, that is to say 60% Potassium (K) and 40% inert material; 1000 pounds of potash contains 600 pounds (units) of Potassium active ingredient; and
- Therefore, the quantities payable to Contractor are: 180 Lbs. N, 460 Lbs. P, and 600 pounds K.

B., 6. *(additional paragraph)* Fermented Biotic Soil Additive: Contractor's unit price for fermented biotic soil additive shall represent full payment for the material, freight, and application to the soil, including Contractor's pro-rata share in profit and overhead. Measurement and payment shall by weight in units of pounds as evidenced by delivery tickets and confirmed site inventory.

4.2 *(added item)*

<u>Description</u>	<u>Unit</u>
Fermented Biotic Soil Additive	Lb.

Table 02700-1. Upland Pasture Mix

Memmelaar West AML Custom Upland Seed Mix

Common Name	Scientific Name	Seed Rate (Lb. PLS/ac)
Alfalfa	<i>Medicago sativa</i> L.	10
Smooth Brome	<i>Bromus inermis</i>	10
Alsike clover	<i>Trifolium hybridum</i> L.	4
Red clover	<i>Trifolium pratense</i> L.	3
Orchardgrass	<i>Dactylis glomerata</i>	6
Perennial ryegrass	<i>Lolium perenne</i> L.	6
Timothy	<i>Phleum pratense</i> L.	6
Virginia wildrye	<i>Elymus virginicus</i>	4
Canada wildrye	<i>Elymus canadensis</i> L.	4
TOTAL		53

Table 02700-2. Wetland Fringe Seed Mix

(Substitutions are allowed with prior Division approval – check multiple sources for availability)

Memmelaar West AML Wetland Fringe Seed Mix

Common Name	Scientific Name	Seed Rate (Lb. PLS/ac)
Bebb's sedge	<i>Carex bebbii</i>	0.03
Fox sedge	<i>Carex vulpinoden</i>	0.03
Blue joint grass	<i>Calamagrostis canadensis</i>	0.7
Cup plant	<i>Silphium perfoliatum</i>	0.7
Fowl mannagrass	<i>Glyceria striata</i>	0.7
Swamp Milkweed	<i>Asclepias incarnata</i>	0.3
Yellow Marsh Marigold	<i>Caltha palustris</i> L.	0.05
Prairie cordgrass	<i>Spartina pectinata</i>	4
Rice cut grass	<i>Leersia oryzoides</i>	0.04
American Sloughgrass	<i>Beckmannia syzigachne</i>	5
Spike rush	<i>Eleocharis palustris</i>	0.05
Virginia wildrye	<i>Elymus virginicus</i>	10
TOTAL		21.6

Table 02700-3. Cover Crop Options

Select one (1) in consultation with Engineer or Division

Memmelaar West AML Cover Crop Options

Season	Common Name	Scientific Name	Seed Rate Lb. (PLS/ac)
Spring	Oats	<i>Avena sativa</i>	32
Fall & Dormant	Winter Wheat	<i>Triticum aestivum</i>	45
Modified Dormant	Winter Wheat	<i>Triticum aestivum</i>	22
	Cereal Rye Grain	<i>Secale cereale</i> L.	22

END OF SUPPLEMENTAL SPECIFICATIONS