SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS

SUPPLEMENTAL CONSTRUCTION SPECIFICATIONS
PAUL TODD 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 July and August 2025 and June 2026), is used for this project:

02010 FIELD ENGINEERING
02100 MOBILIZATION, SITE CLEARING AND PREPARATION
02110 IMPOUNDMENTS
02120 SEDIMENT AND EROSION CONTROL
02200 EARTHWORK, ROUGH GRADING
02300 DRAINAGE SYSTEMS, GENERAL
02310 DRAINAGE SYSTEMS, DAMS AND STRUCTURES
02400 SUBGRADE PREPARATION
02500 FENCING
02700 PERMANENT SEEDING

F. **Engineer:** (per General Conditions 1-04)

Michael M. Otten, P.E., Shive-Hattery, Inc.
4125 Westown Parkway, West Des Moines, Iowa 50266.
Telephone: (515) 223-8104
Email: motten@shive-hattery.com

SECTION 02010 – FIELD ENGINEERING

1.3 QUALITY ASSURANCE

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

F. (New Paragraph) Existing property corner posts noted in plans shall be surveyed by a licensed surveyor of the State of Iowa in accordance with the standards of practice prior to disturbance of said object. All survey information shall be provided to the engineer.

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 Marion County, Iowa, which is publicly available through the USGS at: https://apps.nationalmap.gov/downloader/#/elevation

SECTION 02100 - MOBILIZATION, SITE CLEARING & PREPARATION

3.1 SITE ACCESS

B.

2. (added sub-paragraph) If existing entrance within the Right-Of-Way must be widened to facilitate access, approval from the Marion County Secondary Roads department must be obtained prior to performing the improvements.

3. (added sub-paragraph) Labor and other work required for the improvement of the entrance, except macadam stone, shall be considered incidental to Mobilization.

3.4 OFFICE AND LAY-DOWN AREA

B. Contractor's Field Office

1. **(Revise)** 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. Provide adequate space for project progress meetings and provide sanitary facilities (toilet).

3.8 DEBRIS REMOVAL AND DISPOSAL

D. Habitat Brush Piles

4. **(New Paragraph)** Contractor shall stockpile a limited number of small logs/trees and woody brush during clearing operations for use in habitat piles on the Bailey property in the locations as indicated on Sheet 24 of the Plans. Contractor to ensure the salvaged materials consists of a mixture of both small logs to be utilized as the base of the brush pile and smaller woody brush to be placed above the larger debris. Habitat piles to be placed loosely and not compacted to allow entrances for small mammals to utilize for shelter. Piles should be approximately 15-30' in diameter. Habitat piles can be placed during clearing and grading efforts. Subgrade and seedbed preparation does not need to occur in the footprint of the habitat piles.

4.1 B. MEASUREMENT AND PAYMENT

4. (New Paragraph) Habitat Brush Piles: The unit price for this work item is to construct each habitat brush pile as shown in the Contractor's Proposal. This shall include full payment to Contractor for all work necessary to salvage existing trees and brush, transport on site, place in piles as detailed in the specifications in the locations identified on the Plans, and any other work incidental thereto as required to complete the project in accordance with the Contract Documents.

SECTION 02110 - IMPOUNDMENTS

3.8 TREATMENT AND DISCHARGE SUMMARY

B. **(Revise)** Contractor shall anticipate providing a minimum of two rounds of composite water samples for all water bodies at the site. Initial samples shall be taken and tested prior to any discharge and second samples shall be taken following any required treatment which is anticipated for all water bodies listed in the table on the Plans. Further rounds of composite samples may be necessary if satisfactory discharge parameters are not achieved after initial treatment and testing or if conditions change during discharge.

SECTION 02120 – SEDIMENT & EROSION CONTROL

2.1 (New Section) STONE FILTER

D. (New Paragraph) Material for stone filter shall meet the requirements of IDOT Section 4122.02-A for Macadam Crushed Stone. Gradation shall be Gradation No. 13 of the Aggregate Gradation Table in Article 4109.02.

2.8 TEMPORARY ROLLED EROSION CONTROL PRODUCTS (RECP)

C. RECP Type 3 (Extended Term)

2. RECP Type 3B:
    a. RECP to be installed longitudinally along the terrace flowline with a single 16' wide roll. Roll shall be centered along the terrace flowline. The uphill end of the RECP matting shall be tucked into the soil to a minimum depth of 12" to prevent water from cutting underneath the matting. Where two rolls of RECP meet, the upstream mat shall overlap the downstream mat by a minimum of 3', and the downstream mat shall be tucked into the soil to a minimum depth of 12".
    b. RECP matting material shall consist of either wood excelsior or coconut fibers with a minimum mass/unit area of 350 g/m^2.

3.3 O. (New Section) RIPRAP DITCHES AND OTHER RIPRAP WORK

1. (New Paragraph) Riprap or erosion stone shall be placed over a 6" thick filter stone, where required, in areas shown on the Plans and in a manner which shall produce a reasonably well-graded mass of stone with the minimum practical percentage of voids. All riprap material shall be placed and distributed such that there shall be no objectionable accumulations of either the larger or smaller sizes of stone, and such that the entire mass of stone shall be in accordance with the lines, grades and thickness as shown on the Plans.

2. **(New Paragraph)** Contractor shall place the stone filter and riprap so as not to disturb the stone filter. Riprap or stone shall not be dropped more than two (2) feet when being placed on filter stone bedding. Contractor shall shape rock according to the detail and grading plans. Contractor shall mechanically tamp riprap with excavator bucket to lock stone together and reduce roughness of surface.

P. (New Section) BURIED GRADE CONTROL

1. (New Paragraph) Riprap shall be placed over a 6" thick filter stone 10-12" below the proposed grade except directly in the flowline where the riprap should extend to the ground surface in the locations as shown on the Plans. Voids in the riprap are to be choked with onsite soils during placement. Riprap and soils shall be placed in lifts to ensure all voids are filled throughout the entire depth. Riprap shall be covered with 10-12" of soil and have the appropriate subgrade amendments applied to the soil according to soil tests. Caution should be taken during subgrade and seedbed preparation to not disturb the riprap below the surface while providing a suitable finished surface for seeding. These areas should be permanently seeded, and no rock shall be visible above ground at the completion of seeding.

SECTION 02200 – EARTHWORK, ROUGH GRADING

1.4 JOB CONDITIONS

C. Earthwork Balance
1. (added language) The shrinkage factor is assumed to be 12% for the mass balance.

3.9 FILL PLACEMENT AND COMPACTION

H. (New Paragraph) Deep fill zones: zones requiring placement of fill deeper than fifteen feet (15') shall require extra time to allow for settlement of the fill and underlying foundation soils. Once each increment of 15' of fill is placed, 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 the Contractor documents with detailed daily survey measurements that the settlement has ceased or 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.

3.13 MAINTENANCE

G. (New Paragraph) All maintenance, as described in this section, shall be considered incidental to the project and shall be completed at no additional cost to the Division.

SECTION 02300 – DRAINAGE SYSTEMS, GENERAL

2.5 TERRACE RISERS AND OPEN SIDED AREA INTAKES

A. Terrace Risers
1. (REVISE) Risers shall be made from corrugated metal pipe. 18 GA aluminized coating or approved equivalent shall follow ASTM A742 and A929. Sizes shall be as shown on the Plans.
2. (REVISE) The top three (3) feet shall be perforated with at least forty (40), one (1)-inch diameter holes providing a minimum of thirty (30) open square inches per foot of riser. The first foot below grade shall remain perforated. All remaining factory-installed perforations below grade shall be sealed with tile tape or an approved equal. All remaining CMP exposed underground, other than the top 12" section of perforations, shall be wrapped with 8 mil Linear Low-Density Polyethylene black or opaque encasement. Minimum puncture and tear resistance suitable for backfill operations. Overlap seams a minimum of 12 inches and tape securely with tile tape.
3. (REVISE) Below grade, the corrugated metal riser shall extend to the intake tee. If perforations are below grade, other than in specified area, then the openings shall be completely sealed with three (3) wraps of polyethylene tape or suitable tape.
5. (New Paragraph) Contractor shall install Yellow Standard Bar Guard by Agridrain, or approved equal, on top of intake.
6. (New Paragraph) Bar guards shall be fastened to riser using stainless steel zip ties or stainless steel self-tapping screws.

3.5 TERRACES

C. (New Paragraph) Terraces shall be maintained according to "Section 02200 – Earthwork, Rough Grading-3.13 Maintenance". Flowlines that have settled or accumulated sediment shall be corrected by the contractor 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) Tile installation over fills greater than 10' must wait a minimum of 30 days after fill is placed to final grades to limit settlement post installation.

B. Pipes

11. (New Paragraph) Pipe installation over fills greater than 10' must wait a minimum of 30 days after fill is placed to final grades to limit settlement post installation.

3.11 MEANDERED CHANNELS OR WATERWAYS (new subpart)

A. Perform initial construction of meandered channels or waterways during rough grading operations.

B. Construct meandered channels or waterways to the final alignment and grades shown on the plans immediately prior to subgrade preparation. Use care to develop each meander on the landscape.

C. A second final grading must be performed again following subgrade preparation and before seeding operations. Engineer reserves right to require a final staking of the meandered channel or waterway prior to final grading.

D. After achieving the second final grading, provide a light compaction of the soil to consolidate loose fill and to create a firm bottom in each meandered channel or waterway.

SECTION 02310 – DRAINAGE SYSTEMS, DAMS AND STRUCTURES

2.3 ANTI-SEEP COLLARS AND FILTER DIAPHRAGMS

A. Anti-seep Collars

3. **(New Paragraph)** Anti-seep collars shall be Scheib Drainage HDPE collars, or approved equivalent. Collars shall match the dimensions listed on the plans. Collars shall be installed according to the manufacturer's recommendations. The cost of the anti-seep collar and any additional measures required in order to achieve a water-tight seal shall be considered incidental to the cost of the outlet pipe, as discussed in Section 02310-3.10C. Anti-seep collars shall not be installed unless the Engineer or Construction Observer is present.

SECTION 02400 – SUBGRADE PREPARATION, WITHOUT COVER MATERIAL

3.6 LIME-MULCH APPLICATION
A. APPLICATION RATES

4. (New Paragraph) For bidding purposes, assume the application rate of "Agricultural Lime" for subgrade preparation is twenty-five (25) tons ECCE/acre.

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 Sheet 24 of the construction 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 a 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 is 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 B. MEASUREMENT AND PAYMENT

6. (New Paragraph) Deep Ripping: Contractor's unit price for Deep Ripping shall constitute full payment for the de-compaction of soils in the areas as shown on the Plans to a minimum depth of 24" prior to subgrade treatment. The Deep Ripping area will be based upon the footprint as shown on Sheet 24 of the Construction Plans, rounded to the nearest one-tenth (1/10) of an acre. This work will be paid at plan quantity.

SECTION 02500 – FENCING

4.1 MEASUREMENT AND PAYMENT

B.

1. (New Paragraph) Field fence noted for removal and replacement as shown in the plans shall be replaced with new field fence. Existing fencing noted for removal should be properly disposed of.

SECTION 02700 – PERMANENT SEEDING

2.4 SEED

D. **(New Paragraph)** The following seed mixes shall be used:

1. Native Seed Mix

Common Name	Scientific Name	Rate (Lb. PLS/ac)
Timothy	*Phleum pretense*	7.00
Orchard grass	*Dactylic glomerata*	5.00
Big Bluestem	*Andropogon gerardii*	3.00
Side Oats Grama	*Bouteloua curtipendula*	3.00
Switchgrass	*Panicum virgatum*	3.00
Indian Grass	*Sorghastrum nutans*	3.00
Rough Dropseed	*Sporobolus compositus*	3.00
Canada Wild Rye	*Elymus canadensis*	3.00
Virginia Wild Rye	*Elymus virginicus*	5.00
Purple Prairie Clover	*Dalea purpurea*	2.00
Showy Tick Trefoil	*Desmodium canadense*	1.00
Golden Alexanders	*Zizia aurea*	0.50
Common Yarrow	*Achillea millefolium*	0.10
Purple Coneflower	*Echinacea purpurea*	1.00
Oxeye Sunflower	*Heliopsis helianthoides*	1.00
Wild Bergamot	*Monarda fistulosa*	1.00
Wild Quinine	*Parthenium integrifolium*	0.50
Yellow Coneflower	*Ratibida pinnata*	1.00
Black Eyed Susan	*Rudbeckia hirta*	0.50
Hoary Vervain	*Verbena stricta*	0.50
Prairie Sage	*Artemisia ludoviciana*	0.05
Saw Tooth Sunflower	*Helianthus grosseserratus*	0.10
Stiff Goldenrod	*Solidago rigida*	0.50
New England Aster	*Symphyotrichum novae-angliae*	0.10
Total		**44.85**

Spring Cover (April 1 – May 30)		
Oats	*Avena sativa L.*	32
Dormant Cover (Soil Temperature <50° F – Freeze Up)		
Winter wheat	*Triticum aestivum L.*	45

2. Wetland Fringe Seed Mix

Common Name	Scientific Name	Rate (Lb. 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**

Spring Cover (April 1 – May 30)		
Oats	*Avena sativa L.*	32
Dormant Cover (Soil Temperature <50° F – Freeze Up)		
Winter wheat	*Triticum aestivum L.*	45

3.4 LIMING AND FERTILIZING

E. (New Paragraph) For bidding purposes, assume the application rate of "Agricultural Lime" for seeding is five (5) tons ECCE/acre.

F. (New Paragraph) For bidding purposes, assume the application rate of Nitrogen is fifty (50) pounds per acre, Phosphorus is one hundred (100) pounds per acre, and Potassium is one hundred (160) pounds per acre.

3.5 SEEDING
D. SEED PLACEMENT

1. (REVISE) Seed all areas to be seeded with the appropriate seed mix as shown on the Plans and in the Supplemental Specifications. Seed species shall be applied at the rates provided in the Supplemental Specifications. Sow seed along the contour using a grassland or rangeland drill. The drill shall be equipped with double coulter furrow openers. The drill shall be subject to acceptance by Engineer. Drill seeding shall be accomplished with rows set no more than eight (8) inches apart. Set drill for half of the specified seeding rate, and drill entire area to be seeded two (2) times. Overlap each successive seeding pass at least one (1) row width and avoid drilling in previously created furrows to ensure complete coverage. Upon a show of green, non-acidic bare areas will be reseeded at no additional cost to Division.

END OF SUPPLEMENTAL SPECIFICATION