Iowa Department of Transportation

MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

September 12, 2013

Members Present:	Darwin Bishop	District 3 - Construction
	Mark Brandl	District 6 - Davenport RCE
	Donna Buchwald	Office of Local Systems
	Eric Johnsen, Secretary	Specifications Section
	Wes Musgrove	Office of Contracts
	Gary Novey	Office of Bridges & Structures
	Dan Redmond	District 4 - Materials
	Tom Reis, Chair	Specifications Section
	Brian Smith	Office of Design
Members Not Present:	Greg Mulder	Office of Construction & Materials
	Willy Sorensen	Office of Traffic & Safety
Advisory Members Present:	Lisa McDaniel	FHWA
	Paul Wiegand	SUDAS
Others Present:	Daniel Harness	Office of Design
	Michael Heller	Office of Design
	Mahbub Khoda	Office of Construction & Materials
	Melissa Serio	Office of Construction & Materials
	Wayne Sunday	Office of Construction & Materials
	Matthew Trainum	Office of Design

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated September 6, 2013:

1. Article 2407.02, A, 1, Aggregates (Precast and Prestressed Concrete Bridge Units).

The Office of Construction and Materials requested to allow quartzite and granite to be used for high performance concrete for prestressed concrete beams.

2. Article 2419.03, B, 2, Concrete (Precast Concrete Units).

The Office of Construction and Materials requested to increase the upper limit on air content for precast concrete units.

3. Article 2602.01, D, Water Pollution Control (Soil Erosion).

The Office of Construction and Materials requested to add requirements for an Erosion Control Technician.

4. Section 4105, Liquid Curing Compounds.

The Office of Construction and Materials requested to replace a discontinued AASHTO reference.

5. DS-12XXX, Contractor Furnished Borrow.

The Office of Design requested approval of Developmental Specifications for Contractor Furnished Borrow.

6. DS-12XXX, Seed Mixing by Seed Conditioner.

The Office of Construction and Materials requested approval of Developmental Specifications for Seed Mixing by Seed Conditioner.

7. DS-12012, Backfilling and Compaction of Culverts by Flooding.

The Office of Design requested revisions to the Developmental Specifications for Backfilling and Compaction of Culverts by Flooding.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction & Materials	**Item 1**
Submittal Date: 2013.08.23	**Proposed Effective Date:** April 2014	
Article No.: 2407.02, A, 1 **Title:** Aggregates (Precast and Prestressed Concrete Bridge Units)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 9/12/13	**Effective Date:** 4/15/14

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Bridges and Structures asked if coloration of the finished beams was a concern due to use of quartzite. The Office of Construction and Materials was not concerned.

Specification Section Recommended Text:

2407.02, A, 1.

Replace the second sentence:

If high performance concrete (HPC) is being used for prestressed concrete beams, use a coarse aggregate consisting of crushed limestone, quartzite, or granite meeting class 3 durability or better.

Comments:

Member's Requested Change (Redline/Strikeout):

A. Aggregates.
1. Apply Sections 4110, 4111, and 4115, except the gradation requirements of Articles 4110.02, 4111.02, and 4115.03. If high performance concrete (HPC) is being used for prestressed concrete beams, use a coarse aggregate consisting of crushed limestone, quartzite, or granite meeting class 3 durability or better.

Reason for Revision: Approved during DME meeting

County or City Input Needed (X one)	**Yes**	**No** X
Comments:		

Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No** X

Comments: Limestone was only a requirement in Des Moines to prevent gravel sources with higher potential for iron staining from the area. Quartzite or granite will not cause iron staining.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction & Materials	**Item 2**
Submittal Date: 2013.08.23	**Proposed Effective Date:** April 2014	
Article No.: 2419.03, B, 2 **Title:** Concrete (Precast Concrete Units)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 9/12/13	**Effective Date:** 4/15/14

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Bridges and Structures asked if there would be any issues with the higher air content on HPC. The Office of Construction and Materials did not see any issues.

Specification Section Recommended Text:

2419.03, B, 2.

Replace the second sentence:

To allow for loss during placement, use a target value of 6.5% for air content of fresh unvibrated concrete, with a maximum variation of ~~±~~ plus 1.5% and minus 1.0%.

Comments:

Member's Requested Change (Redline/Strikeout):

2. Intended air entrainment of finished wet cast concrete is 6%. To allow for loss during placement, use a target value of 6.5% for air content of fresh unvibrated concrete, with a maximum variation of plus 1.5% and minus 1.0% ~~± 1.0%~~.

Reason for Revision: Many producers use high range water reducers (HRWR) which makes control of air content more challenging. Increase the upper limit on air content, similar to structural concrete, to provide a better working window for air content during production. Requested by the DMEs.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No** X
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Melissa Serio	**Office:** Construction & Materials	**Item 3**
Submittal Date: 2013.08.31	**Proposed Effective Date:** April 15, 2014	
Article No.: 2602.01, D **Title:** Water Pollution Control (Soil Erosion)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 9/12/13	**Effective Date:** 4/15/14

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: SUDAS asked if Contractors would know what projects are regulated by a NPDES storm water permit. If there is a pollution prevention plan, there is a NPDES storm water permit.

The District 6 Office asked if this might be applied to small business development projects, such as clearing or grubbing or tree removal. The Department will need to be sure that projects that disturb more than 1/2 acre, requiring a PPP, are not small business development projects.

The Office of Contracts confirmed that the ECT must be on the prime contractors payroll, not a subcontractor.

The District 6 Office asked about a price adjustment in the Construction Manual for enforcing this requirement. The Office of Construction and Materials will review the price adjustment for Traffic Control Technician, which should be similar, and submit something for the Construction Manual.

Specification Section Recommended Text:

2602.01, D, Water Pollution Control Quality Control.

Add the Article:

3. For projects regulated by a NPDES storm water permit, maintain an Erosion Control Technician (ECT) on staff, even though the erosion and sediment control portion of the contract may be subcontracted. This individual shall be responsible for overall management of Contractor's quality control program for erosion and sediment control. The ECT is required to obtain certification through the Technical Training and Certification Program (TTCP) of the Department.

Comments:

Member's Requested Change: **(Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)**

Add the following article to 2602.01, D:

3. For projects regulated by a NPDES storm water permit, maintain an Erosion Control Technician (ECT) on staff, even though the erosion and sediment control portion of the contract may be subcontracted. This individual will be responsible for overall management of the Contractor's quality control program for erosion and sediment control. The ECT is required to obtain certification through the Technical Training and Certification Program (TTCP) of the Department.

Reason for Revision: An erosion control training/certification program has been in development since Spring/Summer 2011.

First level became effective with October 2013 GS and required taking the online web-based training course. This spec revision adds second level by requiring Erosion Control Technician (ECT) certification.

ECT class was first offered through TTCP, beginning with 2012-2013 training season.

Duties of ECT will be included in Materials IM 213, Appendix D, which contains lists of responsibilities

for various certified technicians.					
County or City Input Needed (X one)			**Yes** x	**No**	
Comments: Anticipated implementation plan for two level training/certification program has been on Office of Construction website since Oct. 2012. Local Systems sent memo to local agencies on 11/20/12 for their comments.					
Industry Input Needed (X one)			**Yes** X	**No**	
Industry Notified:	**Yes** X	**No**	**Industry Concurrence:**	**Yes** X	**No**
Comments: Anticipated implementation plan for two level training/certification program has been on Office of Construction website since Oct. 2012. IaAGC has been involved since Spring/Summer 2011. Discussed most recently with IaAGC and asphalt and concrete paving associations at a 12/4/12 meeting. Also discussed at erosion control contractor meeting in August 2013.					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 4**
Submittal Date: August 20, 2013	**Proposed Effective Date:** April 2014	
Section No.: 4105 **Title:** Liquid Curing Compounds.	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 9/12/13	**Effective Date:** 4/15/14

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

4105.01, General Requirements.

Replace the Article:

Comply with ~~AASHTO M148~~ ASTM C 309 and the following requirements.

4105.07, A.

Replace the first sentence:

Use clear liquid membrane curing compounds complying with the requirements of ~~AASHTO M 148~~ ASTM C 309, Type 1-D, Class A.

Comments:

Member's Requested Change: (Do not use '**Track Changes**', or '**Mark-Up**'. Use ~~**Strikeout**~~ and Highlight.)

Section 4105. Liquid Curing Compounds.

4105 .01 General Requirements.

Comply with ~~AASHTO M148~~ ASTM C309 and the following requirements.

4105.07 Clear Compounds.

A. Use clear liquid membrane curing compounds complying with the requirements of ~~AASHTO M 148, Type 1-D, Class~~ ASTM C309, Type1-D, Class A.

Reason for Revision: AASHTO Specification has been discontinued.

County or City Input Needed (X one)	**Yes**	**No** X
Comments:		
Industry Input Needed (X one)	**Yes**	**No** X

Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Brian Smith	**Office:** Design	**Item 5**
Submittal Date: 9/3/2013	**Proposed Effective Date:** 1/22/2014	
Article No.: **Title:**	**Other:** Developmental Specifications for Contractor Furnished Borrow	

Specification Committee Action: Deferred until the October meeting so the AGC can have more time for review.

Deferred: X	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments: FHWA asked about NEPA clearances and permits. The Department will not review or verify clearances or permits, only ask the Contractor if they have obtained all necessary clearances or permits.

SUDAS asked about the timeline for project implementation. The Office of Contracts stated that the Department has made a commitment to the AGC to inform contractors of projects requiring large borrows approximately 6 months before letting. The contractors can do some investigation prior to letting and then proceed if they are awarded the project. There will be some delay in beginning construction while the Contractor obtains the property and necessary clearances and permits. Projects requiring large borrows should be let in the fall or early winter to allow for this process.

During a meeting with the AGC, the AGC asked if borrows could be pre-approved before the letting. The Department will not review any proposed borrows until after a contract has been signed.

The Office of Construction and Materials asked what the preliminary costs for investigation will be. AGC indicated that doing some borings will cost in the neighborhood of $2000. Further investigation would go up from there.

The Office of Contracts indicated that the Construction Manual contains contact information for various state agencies that could provide information on potential issues with proposed borrows to the contractors prior to letting.

The District 6 Office asked about historical and archaeological clearances, since the specification only mentions environmental clearances. It is intended that “environmental clearances” covers all site specific clearances and permits. Contractors are not required to obtain the same clearances as the Department is required to obtain. They must review for these issues, but not obtain clearances.

The Office of Design pointed out that they cannot know what select material will be available from the Contractor’s borrow. If select is available from the roadway cut, the designer will assume that select will be available from a nearby borrow and design the plan accordingly. If select is not available from roadway cut, the subgrade treatment will be designed as special backfill.

Brian Smith will be the controller of this DS.

It is intended that this DS be incorporated into the April GS so that it will apply to all projects. Cities and Counties will still have the option to provide borrows as well as on select State projects.

The Office of Design indicated that balances will not be shown on the ‘D’ sheets, as the designer will not know where material is coming from. The ‘T’ sheets will have more totals, at least on every sheet, for the Contractors information.

Embankment-in-Place, Contractor Furnish will be the bid item used for projects with contractor furnished borrow. Do we need to define this bid item in the DS so that it is used properly?

The Office of Design indicated that the future Materials I.M., which is an attachment to the DS, has the Department as the reviewer of all proposed borrows. The language will be revised before the official Materials I.M. is released in April, so that Cities and Counties will be responsible for their own review of proposed borrows.

The District 4 Office asked about the Engineer witnessing samples. There is a difference in the language between projects with greater than 10,000 CY and projects with less than 10,000 CY. The

Engineer will need to witness all samples, so the specification will be revised.

The District 4 Office asked about the Department's frequency of verification samples. This will need to be defined in the Materials I.M. It was suggested that this information be placed in Materials I.M. 204 and the suggested rate is 10%. This frequency will need to go in the DS until the Materials I.M. goes into effect.

The Office of Construction and Materials will make sure that the Materials I.M. is ready to be issued for April.

Specification Section Recommended Text: See attached DS for Contractor Furnished Borrow

Comments: Is it intended that this specification be included in the April GS?

Member's Requested Change: (Do not use **'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.**)

See attached Developmental Specifications for Contractor Furnished Borrow

Reason for Revision: Provide specifications for contractor furnished borrows.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes** X	**No**	
Industry Notified:	**Yes** X	**No**	**Industry Concurrence:**	**Yes**	**No**

Comments: A previous version of these spec. revisions was shared with the industry in May. The current version has been submitted to AGC for review.

DS-120XX
(New)

Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS
FOR
CONTRACTOR FURNISHED BORROW

Effective Date
January 22, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

2102.02, D, Borrow.

Replace the title and article**:**
~~Borrow~~ Material Suitability.

1. **Select Treatment Material.**
   a. **Cohesive Soils.**
      Meet all of the following requirements:
      1) 45% or less silt size fraction.
      2) 110 pcf (1750 kg/m^3) or greater density (AASHTO T 99 Proctor Density or Materials I.M. 309).
      3) Plasticity index greater than 10.
      4) A-6 or A-7-6 soils of glacial origin.
   b. **Granular Soils.**
      Meet all of the following requirements:
      1) 15% or less silt and clay.
      2) 110 pcf (1750 kg/m^3) or greater density (AASHTO T 99 Proctor Density or Materials I.M. 309).
      3) Plasticity index, 3 or less.
      4) A-1, A-2, or A-3 (0).
   c. **Special Backfill Material ~~Material~~.**
      Meet the requirements of Section 4132.
   d. **Modified Subbase Material.**
      Meet requirements of Section 4123.

2. **Suitable Soils.**
   a. Ensure all soils provided for the construction of embankments meet the requirements below. They are suitable when moisture control or moisture and density control is designated.
      1) 95 pounds per cubic foot (1500 kg/m^3) or greater density (AASHTO T 99 Proctor Density or Materials I.M. 309).
      2) AASHTO M 145~~-91~~ index of less than 30.
      3) Liquid Limit (LL) less than 50.

b. Soils not meeting these requirements are considered unsuitable soils, regardless of classification.
c. When placing soil below water, use clean granular material.

3. Unsuitable Soils.
Place in the work only as specified by Standard Road Plan EW-102. Use in the work will be according to the definitions in Table 2102.02-1:

Table 2102.02-1: Uses for Unsuitable Soils

Definition	Use
1. Peat or Muck. **2.** Soils with a plasticity index of 35 or greater. **3.** A-7-5 or A-5 having a density less than 85 pcf (1350 kg/m^3) (AASHTO T 99 Proctor Density or Materials I.M. 309).	Slope Dressing Only.
1. All soils other than A-7-5 or A-5 having a density of 95 pcf (1500 kg/m^3) or less (AASHTO T 99 Proctor Density or Materials I.M. 309). **2.** All soils other than A-7-5 or A-5 containing 3.0% or more carbon.	Type C placement placed 3 feet (1 m) below top of subgrade in fills.
1. A-7-6 (30 or greater). **2.** Residual clays (overlaying bedrock), Paleosols, gumbo, and gumbotils regardless of classification.	Type B placement placed 5 feet (1.5 m) below top of subgrade in fills.
1. Shale. **2.** A-7-5 or A-5 soils having a density greater than 86 pcf (1351 kg/m^3) but less than 95 pcf (1500 kg/m^3) (AASHTO T 99 Proctor Density or Office or Materials I.M. 309).	Type A placement placed in layers 5 feet (1.5 m) below top of subgrade in fills (Alternate layers to consist of suitable soils or Type C placement soils).

2102.03, F, Borrow.

Replace the article:

1. General.
a. Unless provided otherwise in the contract documents, when the quantity of material required for embankments is not available within the limits of the roadway cross sections or specific borrow areas as indicated, make up the deficiency from borrow areas the Contracting Authority provides and defines on the plans or furnish equivalent material from alternate borrow areas (in lieu of plan borrows) or Contractor furnished borrow.
b. The following definitions apply to this specification:
1) Designated Borrow Areas.
A general term for borrow areas the Contracting Authority provides; including mandatory and optional borrow areas.
a) Mandatory Borrow Areas.
An area provided by the Contracting Authority from which the Contractor is expected to obtain borrow material and to operate in the area according to the contract documents. Mandatory borrow areas will be designated in the contract documents.
b) Optional Borrow Area.
An area provided by the Contracting Authority from which the Contractor may obtain borrow material. If so obtained, the Contractor is expected to operate in the area according to the contract documents. Borrow areas are optional borrow areas unless specifically designated as mandatory borrow areas.

2) Alternate Borrow Areas.
An area outside the highway right-of-way provided by the Contractor from which the Contractor may obtain borrow material in lieu of designated borrow areas and to be used according to the contract documents.

3) Contractor Furnished Borrow.
A general term for borrow material provided by the Contractor. ~~The type of material shall be as specified in the contract documents. If the type of material is not specified, provide Suitable Soils. Contractor may elect to provide Select Treatment Material in lieu of Suitable Soils.~~ Unsuitable Type A, B, and C materials, with the exception of shale and residual clays, will be allowed. Place these unsuitable materials as shown on Standard Road Plan EW-102.

c. Upon completion of designated borrows, excavate borrow areas that are sufficiently regular in cross section to permit accurate measurement. Carefully blend to natural land forms and avoid unnecessary damage to the land. Do not turn natural drainage of surface water on to adjoining owners. Use diligence in draining the surface water in its natural course or channel. Complete excavation consistent with the existing natural drainage conditions or as shown in the contract documents.

d. Where a mandatory borrow area is designated in the contract documents, it is mandatory that borrow material be obtained from the borrow location designated and in accordance with the borrow design on the contract documents, unless permission is obtained from the Engineer to obtain borrow from another location.

e. Unless the contract documents designate borrow areas as mandatory borrow areas, borrow areas will be considered optional borrow areas. The Contractor has the option of either using the optional borrow areas or proposing to furnish equivalent material from alternate borrow areas.

f. Do not place the estimated edge of water for a pond borrow closer than 100 feet (30 meters) from public right-of-way. A pond borrow is a borrow that has the intention of excavation below the natural ground and leaving a body of water for a designated purpose.

g. Refer to Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B for separation criteria for hazardous wildlife attractants on or near airports.

2. Contactor's Plan for Alternate Borrow or Revisions to Designated Borrow.

a. Submit a plan to the Engineer for use of proposed alternate or designated borrow intended to be used in a manner different from that shown in the contract documents. Also, sample the proposed alternate borrow areas by core drilling or test pits. When the Contracting Authority determines it is necessary, sample in the presence of the Engineer. Test samples and provide results and verification samples to the Contracting Authority

b. The submission for use of alternate borrow areas shall include all such areas necessary or contemplated for completion of the planned work.

c. Approval of materials and their use will be based on AASHTO M 145~~-91~~ and includes the following:

1) Select Treatment Materials.

a) The Engineer's approval is required for all soils required for select subgrade treatments. The Contractor may elect to substitute with special backfill material or modified subbase material at one-half the required rate at no additional cost to the Contracting Authority. If special backfill material or modified subbase material is used in lieu of select material, the Contractor shall provide for suitable surface and subsurface drainage of this material and provide suitable soils in lower portion of original subgrade treatment layer at no additional cost to the Contracting Authority.

(1) Cohesive Soils.
Meet the requirements of Article 2102.02, D, 1, a.

(2) Granular Soils.
Meet the requirements of Article 2102.02, D, 1, b.

(3) Special Backfill Material.

Meet the requirements of Section 4132.

(4) Modified Subbase Material.
Meet the requirements of Section 4123.

b) Use select treatment sources with sufficient uniformity and size to assure that complete individual treatment areas will be constructed with similar material. Substitution of treatment types (cohesive, granular, special backfill, or modified subbase material) will be allowed only with the Engineer's permission.

2) Suitable Soils.
Meet the requirements of Article 2102.02, D, 2.

3) Unsuitable Soils.
Meet the requirements of Article 2102.02, D, 3.

4) Other Materials.
Place materials not covered above as required by Standard Specifications.

d. The Engineer may decline approval of an alternate borrow area when:

1) Necessary clearances cannot be obtained prior to the time scheduled for commencement of work.

2) Restrictions attached to clearances will delay or interfere with scheduled completion of work or may result in less than necessary quantities of required borrow materials.

3) Contractor's plan for use of borrow areas, including Contractor's verification of quantity and quality of required material, is not sufficient to assure availability of required material.

4) Contractor's proposed plans fail to meet requirements of the contract documents.

e. The Engineer will be allowed time to evaluate each alternate borrow area. If the clearance is not obtained within 30 calendar days, the proposed use of that borrow area may be rejected. During this evaluation period, the Contractor will not be charged for working days the Contractor does not work because the Contractor cannot use the borrow area.

f. The maximum allowance for each contract is not to exceed 30 working days. This allowance will not apply to work for which an intermediate completion time is specified. It will be given only when the delay will not interfere with others authorized to work on the project. It does not increase the Engineer's responsibility to provide coordination.

g. The Contracting Authority will not be responsible for damages due to a delay in approval of an alternate borrow area or when approval of an alternate borrow area is declined.

3. Contractor's Plan for Contractor Furnished Borrow

a. General.

1) Approval of materials and their use as Select Treatment Materials will be based on Article 2102.03, F, 2, c.

2) The Engineer may decline approval of a Contractor furnished borrow(s) when:

a) Contractor's proposed plan fails to meet Proposed Borrow Report requirements.

b) Contractor's plan for use of borrow areas, including quantity and quality of required material, is not sufficient to assure availability of required material.

b. Total Project Quantity of Contractor Furnished Borrow Greater than or Equal to 10,000 Cubic Yards (7650 m^3).
Sample and test proposed Contractor borrow areas and submit Proposed Borrow Report as specified in Appendix A of this specification. When Contracting Authority determines it is necessary, sample in presence of the Engineer. Provide verification samples to Contracting Authority. Submit report electronically to Engineer. Include Iowa DOT Proposed Contractor Borrow Identification Form, sampling/field logs, and test reports. A minimum of 21 calendar days is required for review and approval by Contracting Authority. Contracting Authority will not be responsible for damages or delays due to incomplete submittals or when approval of a borrow is declined.

c. Total Project Quantity of Contractor Furnished Borrow Less than 10,000 Cubic Yards (7650 m^3).
Sample proposed contractor borrow areas. When Contracting Authority determines it is necessary, sample in presence of the Engineer. Provide verification samples to the Contracting Authority.

~~3~~ 4. Contractor Obtained Clearances and Permits.
Obtain necessary environmental clearances and permits, and comply with all restrictions attached to these clearances and permits for alternate borrow areas and sites where Contractor furnished borrow is obtained.

~~4~~ 5. Restoration.
a. Optional borrow areas shown on the Contractor's plan shall be left in at least as good a condition as that required by the contract documents for designated borrow areas. This applies whether all or only a part of the site or the material is used for borrow.
b. Use and rehabilitate optional borrow areas and alternate borrow areas (unless Contractor and landowner have agreed to the final design of the alternate borrow area) so that:
1) The sites can continue to be used for the purpose for which they were used prior to removal of borrow.
2) The sites may still be used for those higher and more profitable or better potential uses to which the site might have been put to prior to removal of borrow material.
c. The Engineer will require restoration according to 314.12, Code of Iowa, to meet the above requirement. The overall Contractor's plan shall neither detract from nor interfere with the air, light, and view of motorists nor of adjacent landowners.

~~5~~ 6. Obligations and Payment.
Use of an alternate borrow area shall not increase future obligations or total cost to the Contracting Authority. Complete all excavation from the roadway and the mandatory borrow areas.

~~6~~ 7. Starting Work.
Except for exploratory purposes, do not start work and take material from an alternate borrow or a Contractor furnished borrow area until after:
- The Engineer approves the borrow proposal in writing, and
- Providing the Engineer with a written release executed by the property owner and the Contractor relieving the Contracting Authority of any and all obligations to the property owner and saving the Contracting Authority harmless from all claims for injury to persons or damage to property resulting from the Contractor's operations.

~~7~~ 8. Material Verification.
Material supplied from alternate borrow areas or Contractor furnished borrow may be verified by the Contracting Authority for compliance with these requirements. When testing by the Contracting Authority is required, a minimum of ~~10 working~~ 14 calendar days is necessary for testing. When the Engineer orders, remove and replace material verified not in close compliance with these requirements, at no additional cost to the Contracting Authority.

2105.02, Materials.

Replace the article:
For topsoil furnished by the Contractor, provide material meeting the requirements of Articles 4170.09, A, 1 and 4170.09, A, 3, or strip existing topsoil from beneath template fill sections within project limits if stripping of that topsoil is not already included as part of the project. Replace topsoil stripped from beneath template fill with an equivalent quantity of Class 10 or Embankment-in-Place material at no additional cost to the Contracting Authority.

2108.05, Basis of Payment.

Add the article:

C. Overhaul will not be paid for Contractor furnished material (such as borrow or topsoil) and waste material.

APPENDIX A

CONTRACTOR FURNISHED BORROW

GENERAL

This procedure describes requirements on sampling, testing, submittal, and approval of contractor furnished borrow sites/sources where project quantity of contractor furnished borrow is greater than 10,000 cubic yards (7650 m^3).

Types of borrows covered in this Materials I.M. are:

1. Excavated, which includes:

   Drainable Borrow: A drainable borrow is one that has the intention of returning the site, as close as possible, to the previous activity/use, and

   Pond Borrow: A pond borrow is one that has the intention of excavation below the natural ground and leaving a body of water for a designated purpose.

2. Non-excavated, such as stockpiled material, which includes:

   Closed/Existing: A stockpile that will not have material added during the course of the project, and

   Open/Active: A stockpile that will have material added during the course of the project.

PROPOSED BORROW REPORT SUBMITTAL REQUIREMENTS

A complete investigation of each proposed borrow shall include an adequate boring layout, a field log of each boring, appropriate sampling, and complete test results. Test pits instead of borings are allowed; however, this applies only for soil layer descriptions and sampling above the water table.

Only those sites that the Contractor intends to utilize for project construction shall be submitted as proposed borrows. Proposed borrows shall collectively satisfy the borrow need for project construction.

The Engineer will inform the Contractor of acceptance or non-acceptance of Proposed Borrow Reports.

If the volume of available suitable soil is insufficient due to the disapproval of a borrow or borrows, the Contractor shall make a new submittal. Any new submittal shall follow the same procedure as previous submittals.

An open/active stockpile submittal will require information on stockpile material currently in place (see submittal requirements for non-excavated borrows) and information on material that will be excavated and added to stockpile during course of the project (see submittal requirements for excavated borrows).

A complete Proposed Borrow Report for each proposed borrow shall include:

1. Completed Iowa DOT Proposed Contractor Borrow Identification Form (provided at the end of this document).

2. Aerial photo showing proposed borrow layout/design or location of proposed stockpile. A recent Google Earth photo should be sufficient.

   For excavated borrows: in addition to borrow layout, aerial photo shall show location of each boring along with its identification number.

For non-excavated borrows: aerial photo shall show sampling locations along with their identification number.

a. Sample/Boring Layouts:
    i. For excavated borrows, a boring layout pattern shall spatially cover a potential borrow site to adequately identify the soil layers encountered throughout the site, and provide for sufficient profile representation. Borings shall be spaced to maximize the coverage and at intervals no greater than 400 feet (120 m) (subject to borrow shape and general outline). An example of a boring layout is provided at the end of this document.

    As an example: a 40 acre (16.2 ha) (square) borrow site will typically require a minimum of nine borings.

    Boring depths shall extend to a reasonable depth below the anticipated maximum excavation for both drainable and pond borrows (such as 10 feet (3 m)) to help accommodate potential material shortfalls. If additional excavation during construction is required to meet the borrow need, additional borings (with sampling and testing) are required.

    ii. For non-excavated borrows, a sampling layout pattern shall spatially cover a potential borrow site to adequately represent the site and define the composition of soil material to be encountered. Sampling shall be spaced to maximize coverage and represent the entire site. Spacing shall be no greater than 400 feet (120 m) (subject to borrow shape and general outline).

b. Samples:
    i. Loose/bulk samples of sufficient size (30 – 40 pounds (14 - 18 kg)) shall be taken, multiple times throughout the borrow site, for each soil layer encountered for excavated borrows or for each soil type for non-excavated borrows. For excavated borrows, a sample may only represent a similar layer in an adjacent boring no more than 400 feet (120 m) distant. Each sample shall be labeled with the boring ID and depth of sample, and shall be tested for mechanical analysis, determination of Atterberg limits, Munsell color comparison, percent of grain sizes, USDA textural and AASHTO classification, etc. (see Section “Laboratory test results” below). At least two samples for each predominant soil layer encountered shall be tested for Proctor density and optimum moisture.

    ii. Samples obtained prior to execution of contract shall be preserved by the Contractor. Samples obtained after execution of contract, the Engineer shall collect verification samples (split samples) from boring or test pits sampled by the Contractor. At the discretion of the Engineer, random verification samples (split samples) shall be submitted to the Central Materials Lab for verification testing.

3. Sampling/field logs:
    a. For excavated borrows, a descriptive field log of each borrow boring shall be submitted. An example is provided below. The following is expected information for each boring in a borrow boring field log.
        - Boring ID number and GPS location
        - A field description of each soil layer (color, soil type, consistency, and geologic origin if possible)
        - Depth to bottom of each soil layer
        - A notation indicating if a layer was sampled
        - In-place moisture conditions of the soil layers
        - Measured water table depth and amount of time between drilling and reading

b. For non-excavated borrows, a descriptive log of each sampling site shall be submitted. An example is provided at the end of this document. The following is expected information for a sampling log.
    - Sample ID number and GPS location
    - A field description of each sample (color, soil type, and consistency) and depth

4. Laboratory test results:

   Testing of borrow samples shall be performed by an accredited lab in accordance with Materials I.M. 208. (see: http://www.amrl.net/amrlsitefinity/default/aap/r18labs.aspx)

   Test results shall be submitted in report or tabulated form. An example of a tabulated form is provided at the end of this document.

   Each test report shall contain:
   - Boring/Sample ID number, and GPS Location
   - For excavated borrows only, depth of sample (from – to) and in units of feet (meters).
   - Atterberg Limits (AASHTO T 89 and T 90, or ASTM D 4318)
   - Percent Gravel, Sand, Silt, and Clay (AASHTO T 88 or ASTM D 422)
   - Textural classification (USDA)
   - AASHTO classification (AASHTO M 145)
   - Proctor density and optimum moisture, when tested (see Section "Samples" above) (AASHTO T 99, ASTM D 698, or Materials I.M. 309)
   - Percent Carbon Content, where applicable (Office of Materials Test Method No. Iowa 111)
   - Sieve analysis (Percent Passing) (AASHTO T 88 or ASTM D 422)
   - Munsell Color comparison

5. For excavated borrows only, provide a minimum of two profile views through proposed borrow. Profiles shall be prepared so they include location of each boring, soil layers through proposed borrow, and extent and depth of the anticipated excavation.

PROCESSING CONTRACTOR BORROW SUBMITTALS, APPROVAL, AND ACTIVITY

This section outlines the procedures that the Engineer, Office of Construction and Materials, and Soils Design Section of the Office of Design will follow for excavated and non-excavated contractor furnished borrow.

A. Verification Sampling

1. The Engineer will be responsible for monitoring boring/sampling activity that occurs after execution of contract. At the discretion of the Engineer, random verification samples (split samples) will be obtained from those collected by the Contractor (minimum frequency: 1 for every 10 contractor samples).

2. If taken, the Engineer will submit verification samples to the Central Material Laboratory of the Office of Construction and Materials, for verification testing.

3. The Central Material Laboratory will send verification test results to the Engineer, the Office of Construction and Materials, and Soils Design Section.

B. Proposed Borrow Report

1. The Engineer will forward reports to the Office of Construction and Materials, and Soils Design Section.

2. The Office of Construction and Materials, and Soils Design Section will evaluate the quality (soil suitability) and quantity (soil type availability) of proposed borrows.

3. The Office of Construction and Materials, and Soils Design Section will coordinate a reply to the Engineer. The coordinated reply will include approval or disapproval of proposed borrows, and any applicable comments.

4. The Engineer will convey approvals or disapprovals and applicable review comments or requirements to the Contractor.

C. Borrow Excavation/Use

The Engineer will monitor use of the borrow material. If there are questions concerning quality of borrow material, the Engineer will request verification samples to determine material suitability and acceptable use.

IOWA DOT PROPOSED BORROW IDENTIFCATION FORM

Date _____

Project Number _____ County_____

Project Description_____

_____

Contractor_____ Phone_____

1. Borrow ID#:_____
2. Location (Legal Description):_____

   _____
3. Size (acres (hectares)):_____
4. Type:
   - ☐ Drainable borrow
   - ☐ Pond Borrow
   - ☐ Other _____
   - ☐ Stockpiled Borrow – Closed/Existing
   - ☐ Stockpiled Borrow – Open/Active
5. Estimated quantities (in cubic yards (cubic meters)):
   Class 10 (suitable)_____

   Select _____

   Unsuitable _____
6. Name, address, phone number, and email of contact person from Contractor if additional information is required:_____

   _____

Attachment: ☐ Proposed Borrow Report

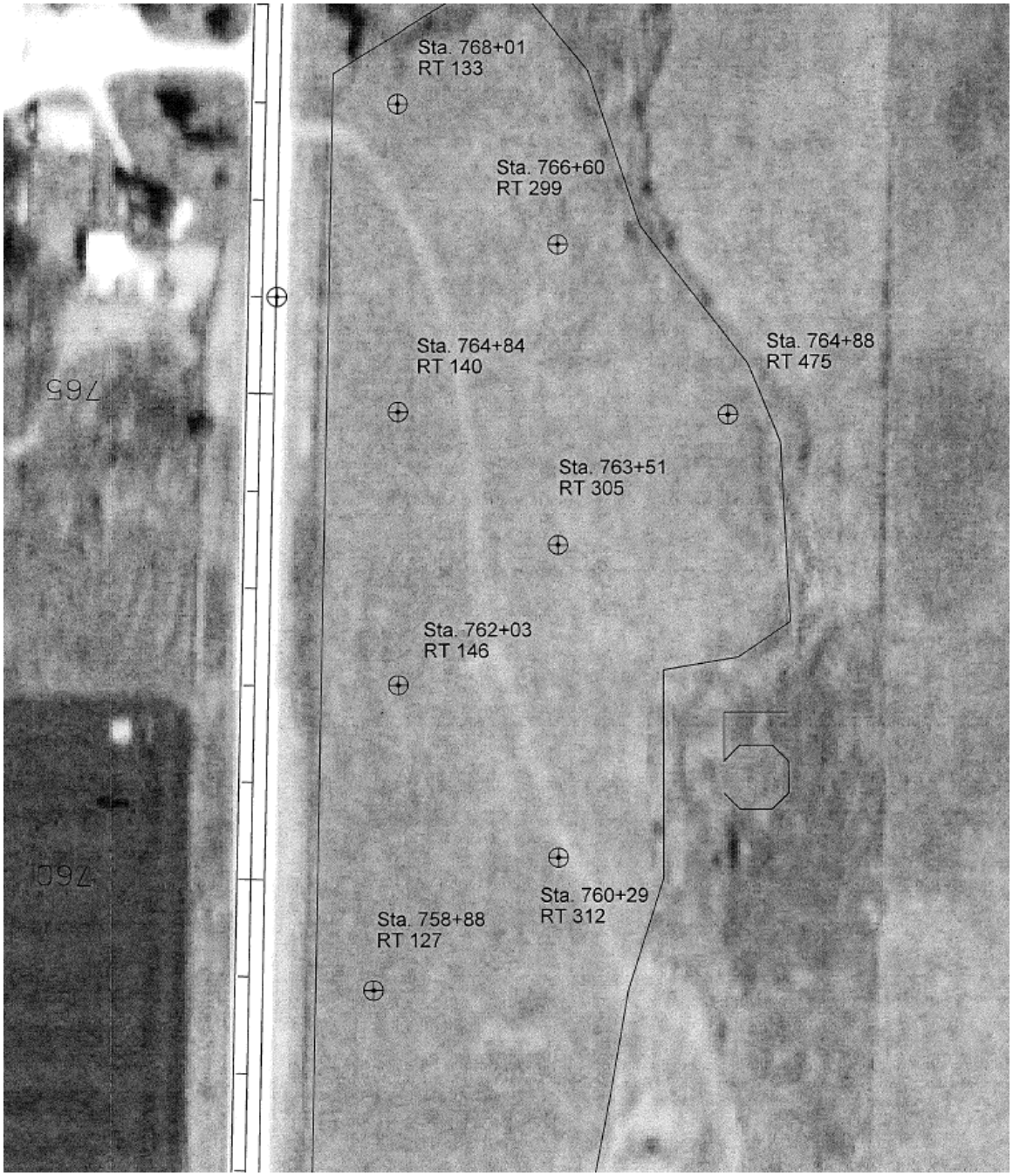
_____

Office of Construction & Materials_____ Date _____

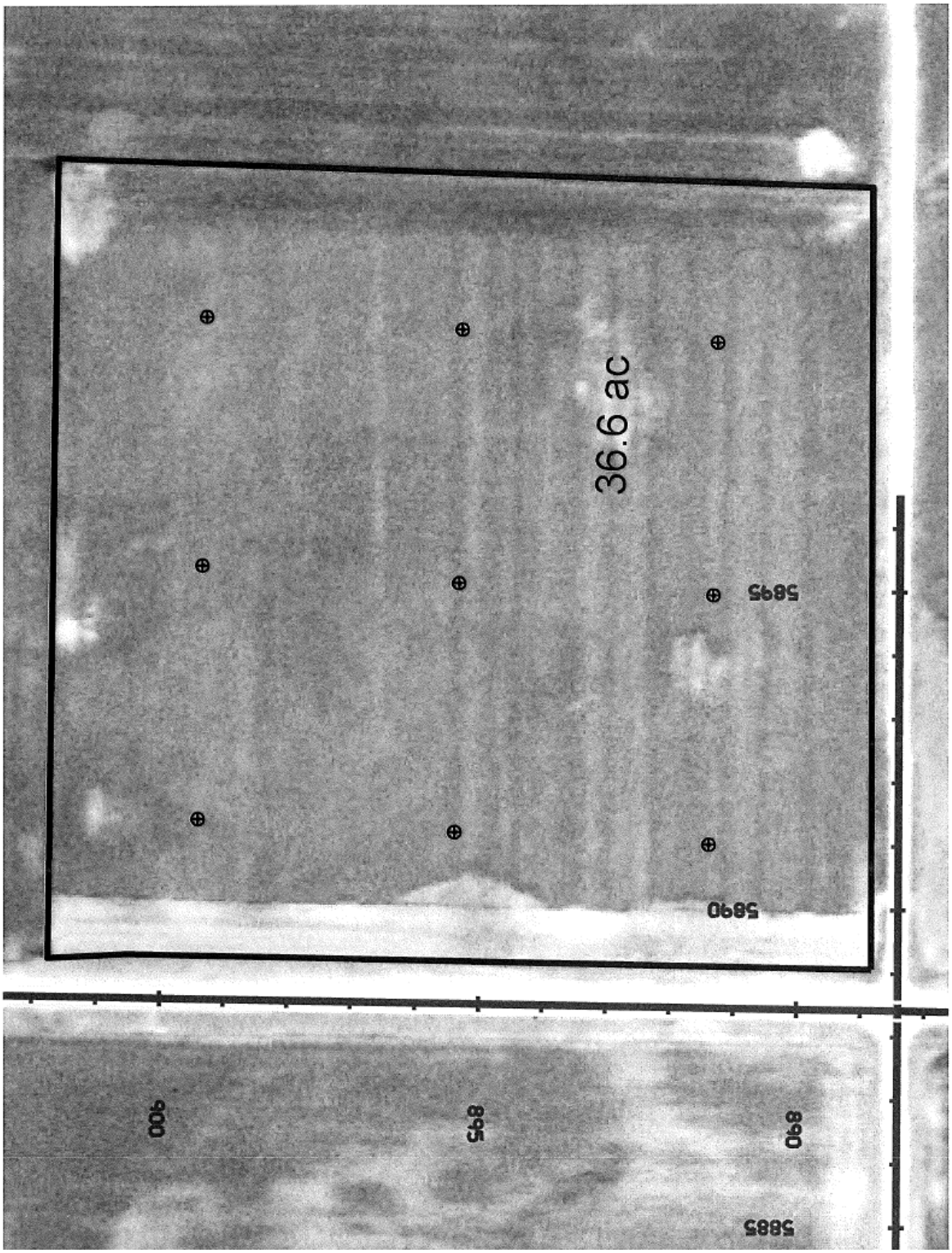
Office of Design, Soils Design _____ Date _____

Resident Construction Engineer _____Date _____

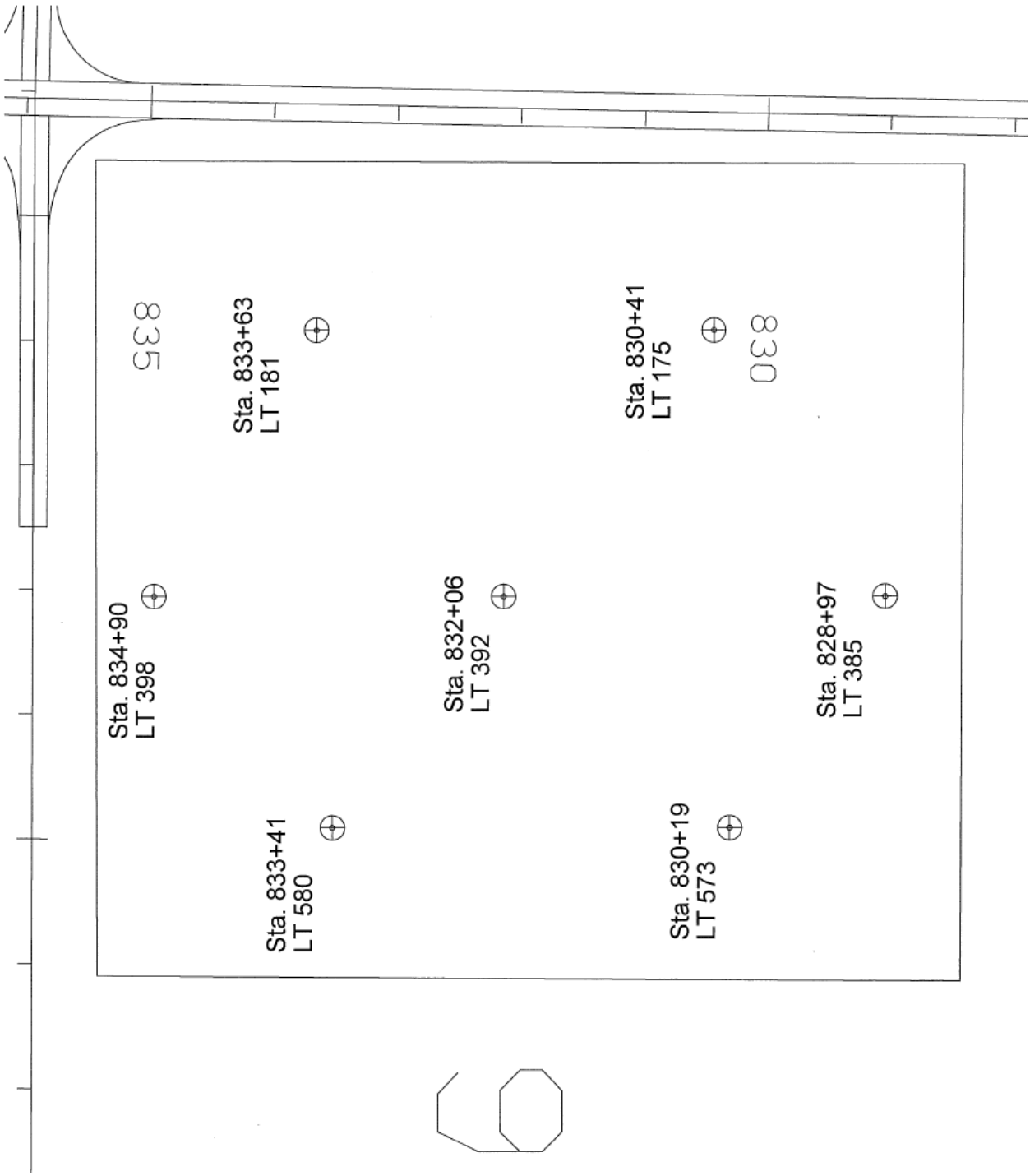
EXAMPLES: BORING LAYOUT, SAMPLING/BORING LOG, AND LABORATORY RESULTS



Example of boring layout



Example of boring layout



Example of boring layout

Project # NHS-141-1(025)--3H-31 Borrow (Stockpile) Date 4/15/2011

Boring ID	GPS(x,y,z)	Sample or Referral	Depth	Layer	Description
M-0022	X: 4270090.23	Sample	0.5	A	Dark Brown Silty Loam
Borrow 1	Y: 3650678.897	Sample	15.4	B	Gray to Brown Sandy Clay
Location 8	Z: 900.5				
M-0023	X: 4269290.588	M-0022-A	0.4	A	Dark Brown Silty Loam
Borrow 1	Y: 3650678.999	Sample	12.9	B	Brown Sandy Clay
Location 9	Z: 902.4				
M-0024	X: 4269690.6	Sample	0.5	A	Dark Brown Silty Loam
Borrow 1	Y: 3650677.004	M-0023-B	14.8	B	Brown Sandy Clay
Location 10	Z: 901.3				

Example of stockpile sampling log

Project # NHS-065-12(003)--3H-68 Borrow Date 7/15/2000

Boring ID	GPS(x,y,z)	Soil Moisture	Sample or Referral	Depth	Layer	Description
R-0296	X: 5229277.001	Moist	Sample	1.5	A	Black to Brown Silty Loam (Topsoil)
Borrow 1	Y: 4550344.034	Wet	Sample	8.5	B	Gray to Brown Sandy Glacial Clay
Hole 1	Z: 1000.35	Wet	Sample	16.0	C	Gray Medium Sand
		Wet	Sample	20.0	D	Gray Sandy Glacial Clay
		Wet	Sample	33.0	E	Dark Gray Glacial Clay with Occassional Sand Seams
Comment:				2.5	Wet	24 Hr H2O reading
R-0297	X: 5229680.061	Moist	R-0296-A	2.0	A	Black to Brown Silty Loam (Topsoil)
Borrow 1	Y: 4550344.002	Wet	Sample	4.5	B	Gray to Brown Sandy Glacial Clay
Hole 2	Z: 1001.40	Wet	Sample	11.0	C	Brown to Gray Sand with binder
		Wet	R-0296-C	25.3	D	Gray Medium Sand
		Wet	R-0296-E	35.4	E	Dark Gray Glacial Clay with Occassional Sand Seams
Comment:				2.1	Wet	24 Hr H2O reading
R-0298	X: 5230079.325	Moist	Sample	1.2	A	Black Silty Loam (Topsoil)
Borrow 1	Y: 4550345.005	Moist	Sample	3.5	B	Brown Silty Clay Loam (Loess)
Hole 3	Z: 1000.30	Wet	R-0297-B	12.0	C	Gray to Brown Sandy Glacial Clay
		Wet	Sample	24.6	D	Gray to Brown Medium Sand
		Wet	Sample	30.8	E	Dark Gray Glacial Clay with Occassional Sand Seam
Comment:				3.5	Wet	12 Hr H2O reading

Example of boring log

Soil Survey 'English' Final Report (Both Group Indexes) **8/1/2013**

County- *Project:* *Road:* *Job:* *Page-* **1** *of* **8**

	Location				Sender	Plastic			**********				Proctor		CAR-	Texture	AASHTO		** Sieve Analysis(% Passing) **						
	Station	Dist.	LAYER	Lab No.	No.	LL	PL	PI	GR	SA	SI	CL	Den	M	BON	Class	A (New)<Old>	Color	3/4	3/8	4	10	40	100	200
	Borrow 1	Hole 1	0.0-1.5	10-460	R0948A	45	22	23	0	49	38	13	93	25	3.8	LO	7-6(8) <8>	Black				100	96	67	51
	Borrow 1	Hole 1	1.5-12.0	10-461	R0948B	40	15	25	1	21	50	28	112	16		CL LO	6(18) <14>	Gr Br			100	99	97	82	78
	Borrow 1	Hole 1	12.0-35.0	10-462	R0948C	28	14	14	4	31	46	19	121	12		LO	6(6) <8>	Dark Gr	100	99	98	96	90	74	65
	Borrow 1	Hole 1	35.0-40.0	10-463	R0948D	29	14	15	0	31	50	19				LO	6(8) <9>	Dark Olive				100	96	78	69
	Borrow 1	Hole 1	40.0-50.0	10-464	R0948E	27	13	14	1	35	47	17				LO	6(6) <7>	Dark Gr		100	99	99	95	75	64
	Borrow 1	Hole 3	35.0-50.0	10-465	R0950D	27	15	12	1	33	49	17				LO	6(5) <7>	Dark Gr			100	99	95	76	66
	Borrow 1	Hole 4	20.0-32.0	10-466	R0951C	35	15	20	1	25	56	18				SI LO	6(13) <12>	Lt O Br			100	99	95	82	74
	Borrow 1	Hole 4	32.0-40.0	10-467	R0951D	27	16	11	0	27	55	18				SI LO	6(6) <8>	Olive				100	96	81	73
*	Borrow 1	Hole 5	0.0-1.0	10-468	R0952A	34	17	17	10	33	37	20				LO	6(7) <7>	Olive Br	98	93	91	90	84	68	57 *
	Borrow 1	Hole 5	1.0-20.0	10-469	R0952B	29	14	15	3	29	47	21				LO	6(7) <9>	Lt O Br		100	98	97	94	75	68
*	Borrow 1	Hole 5	20.0-50.0	10-470	R0952C	28	15	13	3	36	44	17				LO	6(5) <6>	Olive Br		100	99	97	90	72	61 *
	Borrow 1	Hole 6	0.5-3.0	10-471	R0953B	43	15	28	0	28	43	29	107	18	1.4	CL LO	7-6(18) <15>	V Dk Gr				100	95	87	72
*	Borrow 1	Hole 6	25.0-35.0	10-472	R0953E	32	15	17	2	36	42	20				LO	6(8) <8>	Olive Br		100	99	98	88	70	62 *
*	Borrow 1	Hole 6	35.0-50.0	10-473	R0953F	27	14	13	22	31	33	14				G LO	6(3) <3>	Dark Gr	94	88	82	78	71	55	47 *
	Borrow 1	Hole 18	0.0-2.5	10-356	A3874A	31	20	11	1	42	41	16	110	16	2.2	LO	6(4) <5>	V Dk Gr			100	99	88	63	57
	Borrow 1	Hole 18	2.5-10.0	10-357	A3874B	31	16	15	2	30	47	21	117	14		LO	6(8) <9>	Lt O Br	100	99	98	98	92	78	68
	Borrow 1	Hole 18	10.0-15.0	10-358	A3874C	35	16	19	4	26	48	22	116	14		SI LO	6(11) <11>	Olive Br	100	98	97	96	92	79	70
	Borrow 1	Hole 18	15.0-21.0	10-359	A3874D	29	15	14	4	33	44	19	120	12		LO	6(6) <7>	Olive Br		100	98	96	92	75	63
	Borrow 1	Hole 18	21.0-39.0	10-360	A3874E	29	15	14	3	35	43	19	121	12		LO	6(6) <7>	Dark Gr		100	99	97	94	75	62
	Borrow 1	Hole 18	39.0-50.0	10-361	A3874F	22	13	9	1	44	41	14	124	11		LO	4(2) <4>	Dk Gr Br		100	99	99	94	65	55
	Borrow 2	Hole 7	0.0-2.0	10-491	L0018A	57	23	34	0	11	59	30	87	29	4.9	SI CL LO	7-6(33) <19>	Black				100	98	93	89
*	Borrow 2	Hole 7	2.0-6.0	10-492	L0018B	50	11	39	1	26	40	33			0.8	CL LO	7-6(26) <18>	Black			100	99	96	80	73 *
	Borrow 2	Hole 7	6.0-12.0	10-493	L0018C	28	17	11	2	35	46	17				LO	6(4) <6>	Dk Gr Br		100	99	98	93	74	63
*	Borrow 2	Hole 7	12.0-40.0	10-494	L0018D	29	15	14	5	32	44	19				LO	6(6) <7>	Dk O Gr	100	98	97	95	89	73	63 *
	Borrow 2	Hole 8	1.5-4.5	10-495	L0019B	28	14	14	4	52	27	17	117	13		SA LO	6(2) <3>	Dk Gr Br	100	98	97	96	87	58	44
	Borrow 2	Hole 8	4.5-21.0	10-496	L0019C	24	16	8	4	47	37	12				LO	4(1) <3>	Dk Gr Br		100	98	96	89	58	49
*	Borrow 2	Hole 9	6.0-24.0	10-497	L0020C	28	14	14	2	34	44	20				LO	6(6) <7>	Olive Br		100	99	98	93	75	64 *
	Borrow 3	Hole 3	0.0-1.5	10-498	L0023A	36	21	15	5	44	41	10	109	17	2.8	LO	6(5) <5>	V Dk Gr	100	97	96	95	89	63	51
	Borrow 3	Hole 3	1.5-23.0	10-499	L0023B	25	19	6	9	32	49	10				SI LO	4(1) <5>	Lt O Br	100	97	93	91	87	71	59
	Borrow 3	Hole 3	23.0-26.0	10-500	L0023C	27	19	8	1	23	63	13				SI LO	4(4) <8>	Dark Gr			100	99	95	84	76
	Borrow 3	Hole 3	26.0-50.0	10-501	L0023D	19	16	3	5	53	34	8				SA LO	4(0) <1>	Dark Gr		100	99	95	80	55	42
	Borrow 8	Hole 1	0.0-1.5	10-569	R0982A	48	23	25	3	35	43	19			3.3	LO	7-6(14) <12>	V Dk Gr	100	99	98	97	90	72	62
	Borrow 8	Hole 1	1.5-16.0	10-570	R0982B	29	14	15	7	33	41	19	121	12		LO	6(6) <7>	Lt O Br	100	96	94	93	85	70	60
	Borrow 8	Hole 1	16.0-19.0	10-571	R0982C	22	13	9	4	54	30	12	124	11		SA LO	4(1) <1>	Lt O Br		100	98	96	85	57	42
*	Borrow 8	Hole 1	19.0-25.0	10-572	R0982D	26	13	13	4	42	37	17				LO	6(4) <5>	Lt O Br		100	98	96	87	65	54 *
*	Borrow 8	Hole 1	25.0-28.0	10-573	R0982E	48	18	30	3	25	34	38				CL LO	7-6(20) <17>	Dark Gr	100	99	98	97	91	79	72 *
	Borrow 8	Hole 1	28.0-30.0	10-574	R0982F	21	12	9	5	52	31	12				SA LO	4(1) <2>	Lt O Br	100	99	97	95	85	59	43
	Borrow 8	Hole 1	30.0-35.0	10-575	R0982G	20	13	7	8	53	28	11				SA LO	4(0) <1>	Dk Gr Br		100	97	92	78	54	39
*	Borrow 8	Hole 1	35.0-50.0	10-576	R0982H	24	12	12	9	37	38	16				LO	6(3) <5>	V Dk Gr Br	100	99	96	91	83	65	54 *
	Borrow 8	Hole 3	0.0-3.0	10-577	R0984A	48	24	24	0	28	53	19			3.6	SI LO	7-6(17) <14>	Black				100	95	79	72
	Station	Dist.	Layer	Lab No.	S No.	LL	PL	PI	GR	SA	SI	CL	Den	M	CRB	Texture	A (New)<Old>	Color	3/4	3/8	4	10	40	100	200

Samples bracketed by asterisks (*) meet the 'Select' criteria except for a missing proctor

Example of laboratory test results

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Melissa Serio	**Office:** Construction & Materials	**Item 6**
Submittal Date: 2013.08.31	**Proposed Effective Date:** 12/17/13	
Article No.: **Title:**	**Other:** DS-12XXX Developmental Specifications for Seed Mixing by Seed Conditioner	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 9/12/13	**Effective Date:** 12/17/13

Specification Committee Approved Text: See attached SS for Seed Mixing by Seed Conditioner.

Comments: The Specifications Section asked if this specification should be a Supplemental Specification. That way the Office of Contracts can apply it whenever an applicable seed bid item is used. The committee agreed to make the specification an SS.

The SS will apply to all seed bid items except rural stabilization crop.

The SS will be incorporated into the April GS. The SS attachment will become Materials I.M. 469.02.

Specification Section Recommended Text: See attached DS for Seed Mixing by Seed Conditioner.

Comments: The DS will be incorporated into the April GS. The DS attachment will become Materials I.M. 469.02.

Member's Requested Change: **(Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)**

See attached Developmental Specifications.

Reason for Revision: Remove requirement for engineer to witness seed mixing of native grass, wetland grass, and wildflower seed mixtures. Add requirement for mixing of permanent rural, permanent urban, urban stabilizing, native grass, wetland grass, and wildflower seed to be performed by an approved "seed conditioner" through Iowa Crop Improvement Association certification program or other state program.

County or City Input Needed (X one)			**Yes**	**No X**	
Comments:					
Industry Input Needed (X one)			**Yes** x	**No**	
Industry Notified:	**Yes** x	**No**	**Industry Concurrence:**	**Yes** x	**No**
Comments: Discussed revision with seed suppliers, erosion control contractors, and Iowa Crop Improvement Association.					

SS-12XXX
(New)

Iowa Department of Transportation

SUPPLEMENTAL SPECIFICATIONS
FOR
SEED MIXING BY SEED CONDITIONER

Effective Date
December 17, 2013

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SUPPLEMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

2601.03. B, 4, c, 1.

Replace the Article:

Except when a hydraulic seeder is used, thoroughly mix all seed specified for the contract prior to placing seed in seed hopper. ~~Ensure Engineer witnesses seed mixing for Native Grass, Wildflower, and Wetland Grass seeding mixtures. Provide 48 hour notice to Engineer prior to mixing seed.~~ Seed mixing shall meet requirements of Appendix A of this specification. Permanent rural, permanent urban, urban stabilizing, Native Grass, Wetland Grass, and Wildflower seeding mixtures shall be mixed off-site by a seed conditioner approved by the Iowa Crop Improvement Association or other state's Crop Improvement Association.

APPENDIX A - INSPECTION & ACCEPTANCE OF SEED

GENERAL

The provisions of this Appendix shall apply to seed and seed mixtures defined in the plans and Section 4169 of the Standard Specifications.

ACCEPTANCE

Seed

Seeds shall be furnished and labeled in accordance with laws relating to agriculture seeds and the fuels and regulations of Iowa Department of Agriculture. The exception being the information on the tag or label shall be mechanically printed. Each unit of seed furnished shall have a label or tag containing the name and address of the person or company who labeled said seed, kind and variety, percent purity, percent germination, percent hard seed, if present, and date tested. The test date to determine the percentage of germination shall have been completed within a nine-month period prior to seed application exclusive of the calendar month in which the test was completed (for example, seed tested 8/5/12 shall be applied by 5/31/13. If seed is to be applied after 5/31/13, then seed requires a new test).

Prior to seeding, entire lots of seed to be used should be inspected for damage due to rough handling, exposure to moisture or rodents. Evidence of contamination, or other reasons which would indicate the quality of seed is questionable, should be considered cause for holding until the lots or bags in question have been tested before use. Routine monitoring samples for testing will not be required.

If the seed does not comply with minimum requirements for purity and germination, and such seed cannot be obtained, the Engineer may approve use of the seed on a basis of pure live seed (Germination times Purity equals Pure Live Seed) or may authorize a suitable substitution for the seed specified.

Seed Mixing

- On-site Mixing (rural stabilizing crop seeding only):

  Prior to seeding operations, the Engineer shall be provided opportunity to inspect seed tickets and witness the mixing of seed varieties for compliance with requirements of the contract requirements. Contractor shall provide weighing equipment or evidence of the weights of pre-bagged seed to demonstrate required application rates.

- Off-site Mixing:

  Seed mixtures certified by an approved source may be incorporated into the project. Each shipment to a project shall be accompanied by proper report and certification documents described in this Appendix.

  Each shipment to a project should be inspected for damage, loss or contamination, and sufficiency to demonstrate required application rate. Bags shall arrive onsite from seed conditioner in sealed/unopened bags.

APPROVED SOURCES

Seed mixture from seed conditioners approved by the Iowa Crop Improvement Association may be furnished to Iowa DOT projects on a certification basis.

Seed conditioners approved by other state's Crop Improvement Associations may furnish seed mixtures on a certification basis.

Seed shall be mixed by an approved seed conditioner as described in this Appendix, but the seed is not required to come from an approved seed conditioner.

CERTIFICATION DOCUMENTS

Suppliers of certified seed mixtures shall furnish with each shipment a certified seed mixture report and certification sheet (see attached forms). Each mixture report shall identify the county, project number, contractor or subcontractor, type of seed mixture. Blank forms are available at the Office of Materials website.

Each certification sheet shall be signed by a designated responsible company representative.
One copy of the above described documents shall be forwarded to the project engineer at the time of shipment to the project. In addition, one copy shall be sent to the District Materials Engineer in the district in which the project is being administered.

Certified seed mixture reports and seed lot test information for seeds furnished to Department projects shall be kept by the approved seed conditioner for a minimum of three years.

APPROVED SOURCE MONITORING

The District Materials Engineer shall be responsible for establishing and performing a supplier monitoring program at least once per year.

The following items shall be evaluated during a monitor inspection and documented on a Seed Monitor Report form (see attached form):

- Project number/customer
- Certification date and certifying scale company of all mixing scales
- Intended seed mixture
- Verification of seed varieties, germination percentage, purity percentage, PLS percentage, date tested, and lot number
- Verification of weighed seed increments and bags
- Labeling and certification/documentation

Seed Mixture Report – Native Grass and Wetland Grass

Date: _____

Project No.: _____ Seed Mix Type: _____

County: _____ # of Acres (hectares): _____

Contractor: _____ Lot #: _____

Species (Scientific name)	Origin	Lot #	Test Date	Purity (%)	Germination (%)	PLS %	PLS Factor

Species (Scientific name)	Lbs. PLS /Acre (kg/ha)	# of Acre (ha)	Total Lbs. PLS (kg)	PLS Factor	Total Bulk Lbs. (kg)
				Total:	

Lbs/Bag (kg/bag): _____ **Acres/Bag (ha/bag):** _____ **# of Bags:** _____

Seed Mixture Report – Urban and Rural

Date: _____

Project No.: _____ Seed Mix Type: _____

County: _____ # of Acres (hectares): _____

Contractor: _____ Lot #: _____

Species (Scientific name)	Origin	Lot #	Test Date	Purity (%)	Germination (%)

Species (Scientific name)	Lbs. /Acre (kg/ha)	# of Acre (ha)	Total Bulk Lbs. (kg)
		Total:	

Lbs/Bag (kg/bag): _____ **Acres/Bag (ha/bag):** _____ **# of Bags:** _____

Certification Statement

The materials itemized in this shipment are certified to be in compliance with the applicable requirements of the Iowa DOT.

Project No.	
County	
Seed Mixture Type	
# of Acres (ha)	
Total Bulk Lbs. (kg) of Mixture	
Lbs./Bag (kg/bag)	
Acres/Bag (ha/bag)	
Lot No.	
# of Bags	
Contractor	
Date	

Company: _____

Name: _____

Signature: _____

Date: _____

Seed Monitor Report

Date_____ DOT Monitor_____ District No. _____

Supplier_____

Project Number/Customer Order_____

Scale Calibration

Scale	Date Calibrated	Calibrated By

Seed Mixture Monitored_____

☐ Check if copy of the Batching Proportions is attached

Seed Testing Compliance

Seed Variety	Date Tested	Purity %	Germination%	PLS%	Complies (Yes or No)

Check Weighing

Seed Variety	Batch Weight Lbs. (kg)	Check Weight Lbs. (kg)	Difference Lbs. (kg)

Bag Weight (Check Up to Three Bags)

Labeled Bag Weight Lbs. (kg)	Check Weight Lbs. (kg)	Difference Lbs. (kg)

Labeling and Certifications

Complies _____ (Yes or No)

Comments:_____
_____
_____

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Brian Smith			**Office:** Design		**Item 7**
Submittal Date: 8/30/2013			**Proposed Effective Date:** 11/19/2013		
Article No.: **Title:**			**Other:** Developmental Specifications for Backfilling and Compaction of Culverts by Flooding		
Specification Committee Action: Approved with changes.					
Deferred:	**Not Approved:**	**Approved Date:** 9/12/13		**Effective Date:** 11/19/13	
Specification Committee Approved Text: See attached SS for Backfilling and Compaction of Culverts by Flooding.					
Comments: The Specifications Section asked if this specification should be a Supplemental Specification. That way the Office of Contracts can apply it whenever the bid item, Flooded Backfill, is used. The committee agreed to make the specification an SS. The Road Standard shown will be available as a modified Road Standard to be included in the plans until April 2014 when it will become an official Road Standard.					
Specification Section Recommended Text: See attached DS for Backfilling and Compaction of Culverts by flooding.					
Comments:					
Member's Requested Change: (Do not use **'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.**) See attached Developmental Specifications for Backfilling and Compaction of Culverts by Flooding.					
Reason for Revision: Add in specifications for backfilling and compaction for RCB culverts. A new Standard Road Plan has also been developed.					
County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SS-120XX
(Replaces DS-12012)

Iowa Department of Transportation

SUPPLEMENTAL SPECIFICATIONS
FOR
BACKFILLING AND COMPACTION OF PIPE AND REINFORCED BOX CULVERTS BY FLOODING

Effective Date
November 19, 2013

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SUPPLEMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120XX.01 DESCRIPTION.
This specification describes backfill and compaction requirements for culverts using flooding. Apply Sections 2402, 2415, 2416, and 2417 of the Standard Specifications unless modified by this specification.

120XX.02 MATERIALS.
Use floodable backfill material meeting the requirements of Section 4134 of the Standard Specifications.

When required, use porous backfill material meeting the requirements of Section 4131 of the Standard Specifications.

Use perforated subdrain meeting requirements of Section 4143 of the Standard Specifications.

120XX.03 CONSTRUCTION.
When backfilling and compaction by flooding is required, backfill may be placed in lifts up to 2 feet (0.6 m) thick. Place backfill simultaneously on both sides of culvert. Determine if pipe culverts need to be restrained and take appropriate actions to prevent floating of culverts during backfilling, flooding, and compaction.

Begin surface flooding for each lift at the inlet end of the culvert and progress to the outlet. To ensure uniform surface flooding and adequate compaction, fan-spray water in successive 6 to 8 foot (1.8 to 2.4 m) increments using a 2 inch (50 mm) diameter hose for three minutes within each increment. Run hose fully, but with water pressure low enough to avoid eroding cohesive soil plugs.

After flooding, evaluate effectiveness of compaction with a vibratory pan compactor. If pan compactor produces visible compaction, repeat flooding process until pan compactor produces no visible compaction.

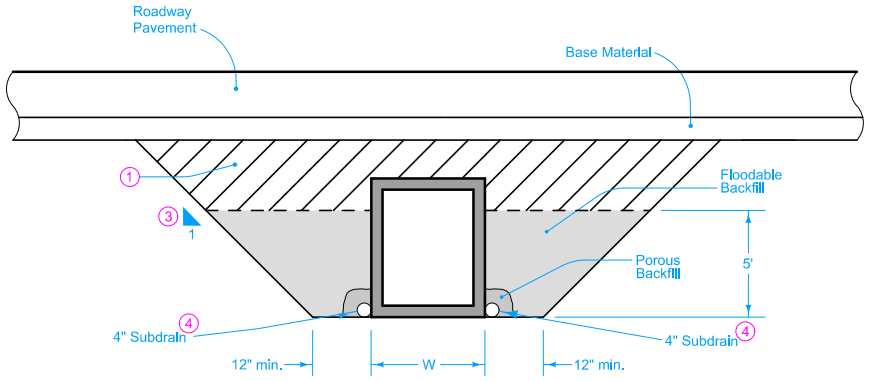
120XX.04 METHOD OF MEASUREMENT.
Quantity of Flooded Backfill, in cubic yards (cubic meters), will be the quantity shown in the contract documents, ~~regardless of the compaction method~~ including pipe culverts installed by fill installation. Quantity measured for payment will not be adjusted unless the quantity of culvert installed is adjusted.

120XX.05 BASIS OF PAYMENT.
Contractor will be paid contract unit price for Flooded Backfill per cubic yard (cubic meters).

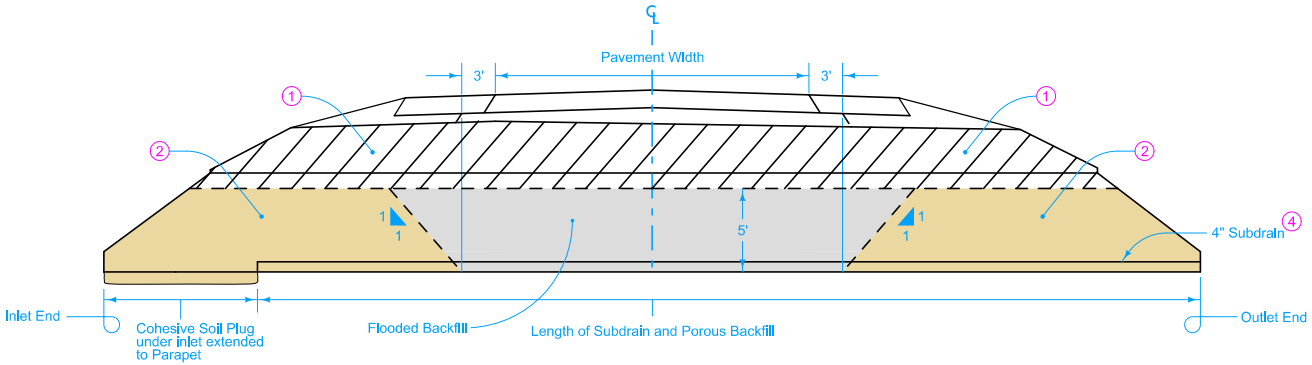
Backfill material, subdrains, restraining culverts against floating, and water required for flooding will not be measured separately for payment, but will be considered incidental to the contract unit price bid for Flooded Backfill.

DRAFT

DESIGNER INFO



RCB INSTALLATION



TYPICAL SECTION - COHESIVE SOIL PLUG

Denotes pay limits for flooded backfill

1. Excavated material meeting the requirements of the Standard Specifications. Compact using moisture control. The Contractor has the option to use Floodable Backfill. No additional compensation will be provided if the Contractor elects to use Floodable Backfill in lieu of suitable soil.
2. Prior to flooding, place a cohesive soil plug to the height of the floodable backfill at the inlet, outlet and, sides of the culvert.
3. Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
4. Place at flowline elevation of culvert starting at parapet for inlet and outletting at end of outlet headwall wings. Cover with a miniumum of 4 inches of Porous Backfill.

Possible Contract Items:
Flooded Backfill
Excavation, Class 20
Compaction with Moisture Control (Structures)

Possible Tabulation:
103-6
104-3
104-4

REVISION	
New	04-15-14

STANDARD ROAD PLAN

RF-30D

SHEET 1 of 1

REVISIONS: New.

APPROVED BY DESIGN METHODS ENGINEER

BOX CULVERT (BACKFILL)