



Natural Resources Conservation Service
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March 31, 2006

NATIONAL ENGINEERING MANUAL (2nd Edition)
210-V
Amendment MA-29

SUBJECT: ENG – USE OF NON-NRCS ENGINEERING SERVICES

Purpose: To transmit Massachusetts policy and procedures when non-NRCS engineering services are to be used to design and install conservation practices.

Effective Date: This amendment is effective when received.

This amendment includes the following:

- Process flow-chart that helps explain the policy and procedures to follow when non-NRCS engineering services will be used to design and/or install conservation practices.
- Three design requirements documents for: practices requiring PE licensure, practices not requiring PE licensure, and for roofs over a facility.
- Sample letters to help ensure effective communication between NRCS, the landowner, and the consultant or contractor.

Filing Instructions: File the process flow-chart and design requirements documents immediately following page 505-4. File the example letters following page 505-27. Make a notation on the tabulation sheet and file this notice immediately following the tabulation sheet.

/s/

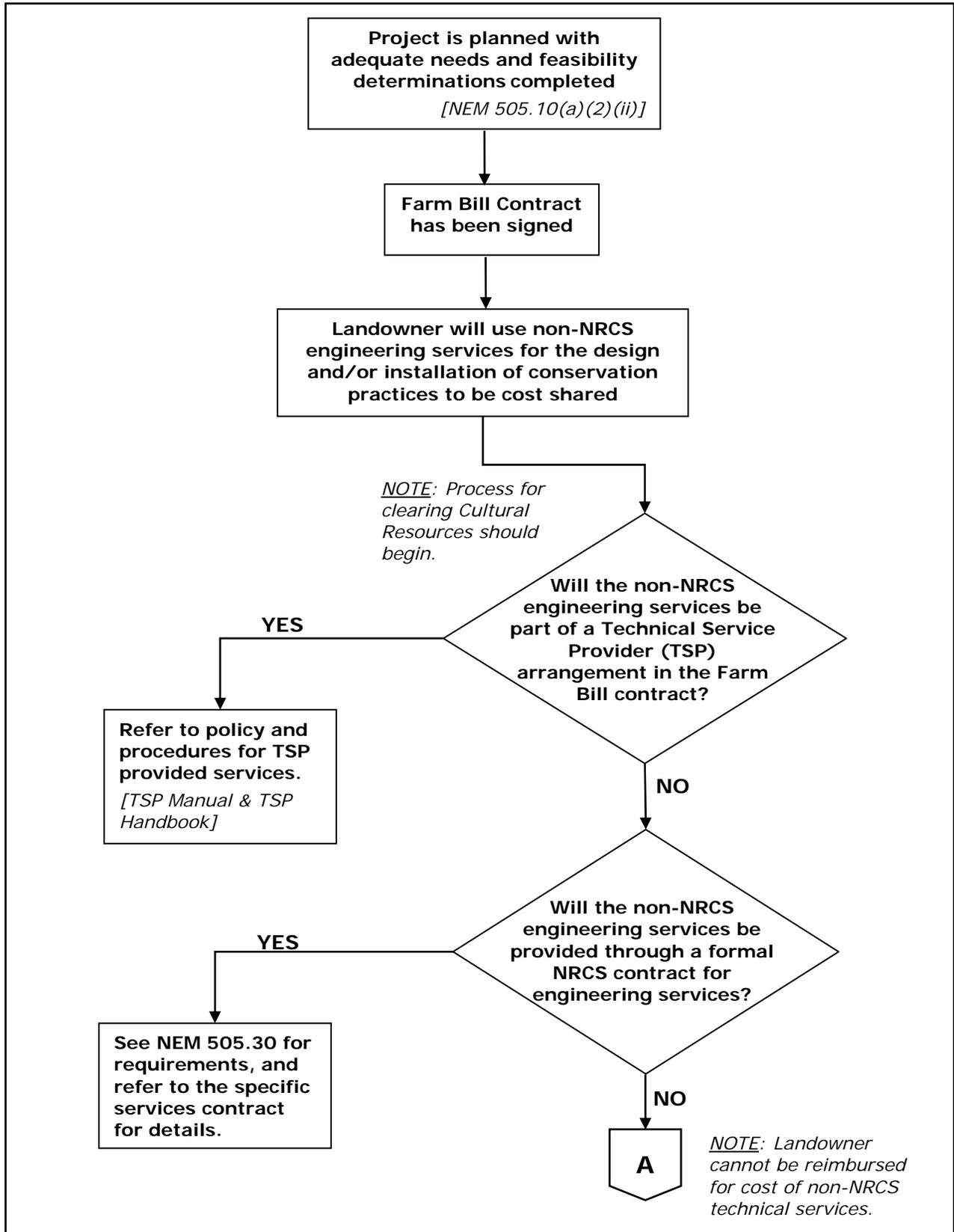
CECIL B. CURRIN
State Conservationist

Attachments

Dist: NEM

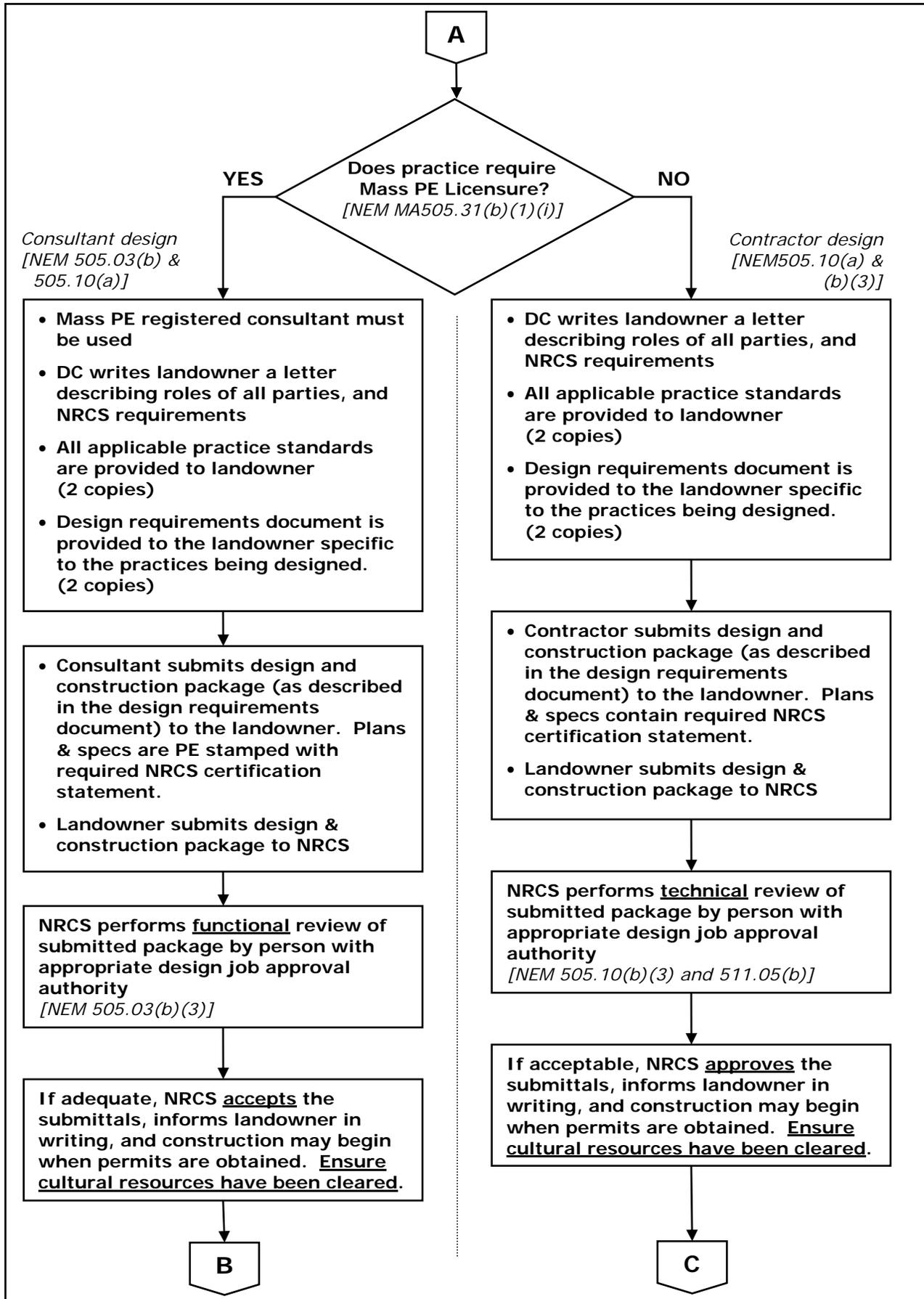
PART 505 – NON-NRCS ENGINEERING SERVICES
SUBPART A – INTRODUCTION

§MA505.04 Process flow chart for use of non-NRCS engineering services



PART 505 – NON-NRCS ENGINEERING SERVICES
SUBPART A – INTRODUCTION

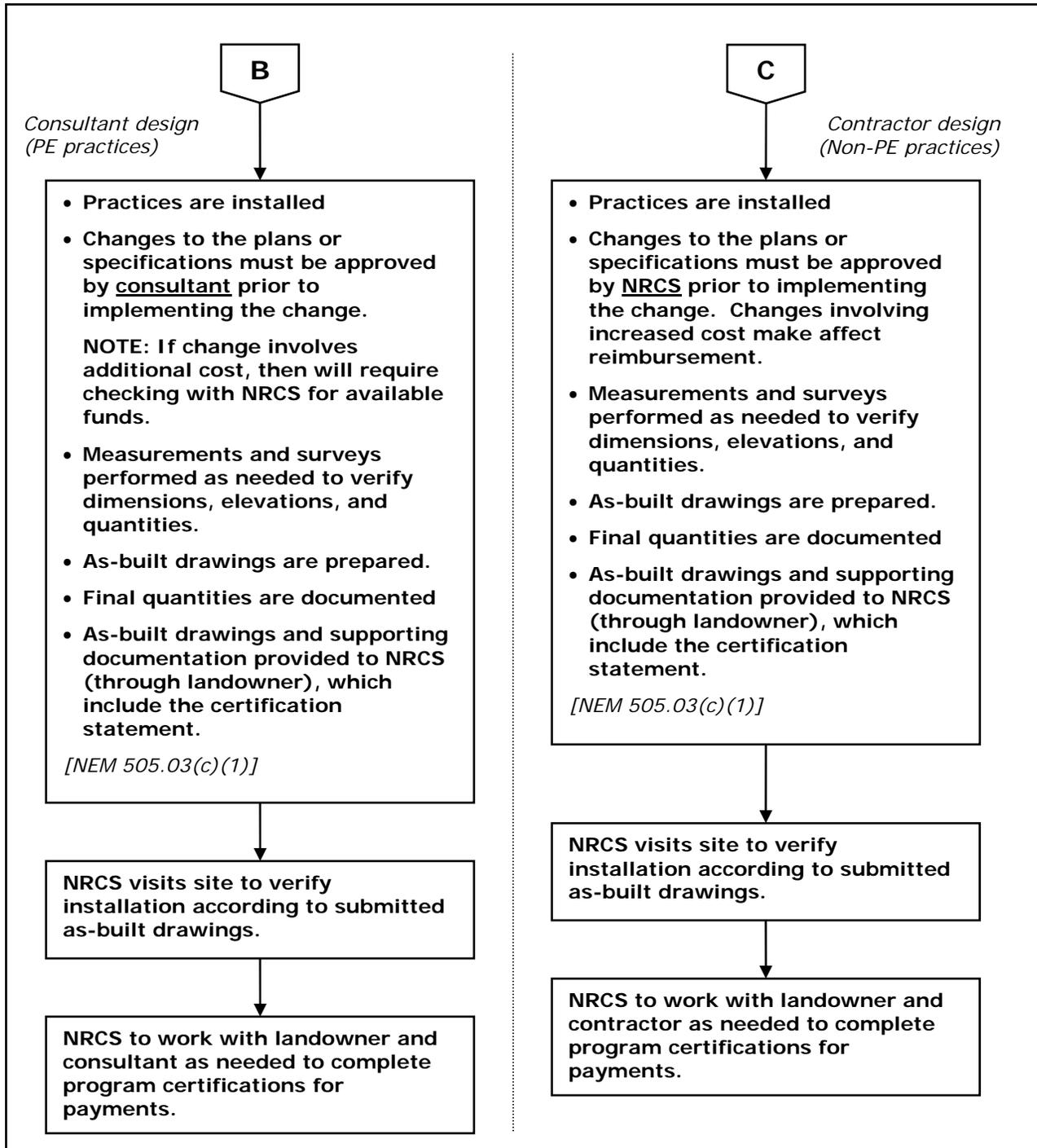
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SUBPART A – INTRODUCTION

§MA505.05 Design requirements document for practices requiring PE Licensure

DESIGN, INSTALLATION, AND CERTIFICATION REQUIREMENTS

Conservation Practices Requiring Massachusetts PE Licensure

Scope

This document describes the requirements for consultants to design and certify the installation of engineering conservation practices, so that the client may receive partial reimbursement from Natural Resources Conservation Service (NRCS) for the cost of installing those practices. The consultant must be a registered Professional Engineer (PE) in the State of Massachusetts.

Prior to construction, the consultant must submit the following items to the client, who will forward a copy to NRCS. NRCS must review and accept the submittals prior to construction.

1. A copy of the signed engineering plans/drawings and construction specifications that reflect a site specific design of the conservation practices, and meet the requirements of the applicable NRCS practice standards.
 - a. The consultant is responsible for verifying foundation conditions at the site and identifying affected utilities.
 - b. Provide the data necessary for the client to obtain necessary permits, and to secure any land rights for properties affected by the installation of the practices.
 - c. In addition to the PE's stamp and signature, the consultant shall include the following statement on the drawings: "To the best of my professional knowledge, judgment, and belief, these construction drawings and specifications meet applicable NRCS standards and specifications."
 - d. Specifications shall be included indicating minimum material requirements and specific requirements to install the practices.
2. A copy of the design documentation for the practices showing that the design meets NRCS standards.
3. A copy of the engineer's cost estimate that includes the table of construction work items and the consultant's estimate of work quantity for each item.
4. A copy of the construction inspection plan that describes inspection items and qualifications of those doing the inspection.
5. A copy of the operation and maintenance (O&M) plan as applicable for the practices designed.
6. Cultural resources clearance must be received from NRCS prior to construction.

During construction, the consultant may be hired to provide assistance with the construction layout and installation. All special conditions specified in permits and cultural resource investigations must be followed.

Changes during construction must be approved by the consultant prior to the implementation of the change. NRCS must be informed of changes involving increased costs as this may affect reimbursement for the practice. All approved changes are to be noted on the "as-built" drawings.

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Upon completion of construction, the following shall be done and submitted to NRCS for verification and payment:

1. The practices shall be surveyed and measured to verify that they meet the requirements as shown on the drawings.
2. The consultant shall develop a list of final quantities for use in the Farm Bill contract payment and also submit the calculations and documentation that support these quantities. The final quantities as well as the constructed dimensions shall be placed on the “as-built” drawings.
3. Submit a copy of the “as-built” drawings, including supporting authorizations for changes made to the original plans and specifications.
4. The as-built drawings shall include the following certification statement: “To the best of my professional knowledge, judgment, and belief, the installed practices meets NRCS standards.” and be signed by the consultant who designed them.
5. Submit a copy of the construction documentation required in the inspection plan.

Additional technical information and practice documentation requirements are available at <http://www.ma.nrcs.usda.gov>.

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§MA505.06 Design requirements document for practices not requiring PE Licensure

DESIGN, INSTALLATION, AND CERTIFICATION REQUIREMENTS

Conservation Practices (not requiring Massachusetts PE licensure)

Scope

This document describes the requirements for contractors to design and certify the installation of conservation practices, so that the client may receive partial reimbursement from Natural Resources Conservation Service (NRCS) for the cost of installing those practices.

Prior to construction, the contractor must submit the following items to the client, who will forward a copy to NRCS. NRCS must review and approve the submittals prior to construction.

1. A copy of the construction plans/drawings and construction specifications that reflect a site specific design of the conservation practices, and meet the requirements of the applicable NRCS practice standards.
 - a. The contractor is responsible for verifying foundation conditions at the site and identifying affected utilities.
 - b. Provide the data necessary for the client to obtain necessary permits, and to secure any land rights for properties affected by the installation of the practices.
 - c. The contractor shall include the following statement on the drawings: “To the best of my professional knowledge, judgment, and belief, these construction drawings and specifications meet applicable NRCS standards and specifications.”
 - d. Specifications shall be included indicating minimum material requirements and specific requirements to install the practices.
2. A copy of the design documentation for the practices showing that the design meets NRCS standards.
3. A copy of the cost estimate that includes the table of construction work items and the contractor’s estimate of work quantity for each item.
4. A copy of the construction inspection plan that describes inspection items and qualifications of those doing the inspection.
5. A copy of the operation and maintenance (O&M) plan as applicable for the practices designed.
6. Cultural resources clearance must be received from NRCS prior to construction.

During construction, the contractor may be hired to provide assistance with the construction layout and installation. All special conditions specified in permits and cultural resource investigations must be followed.

Changes during construction must be approved by NRCS prior to the implementation of the change. Changes involving increased costs may affect reimbursement for the practice. All approved changes are to be noted on the “as-built” drawings.

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Upon completion of construction, the following shall be done and submitted to NRCS for verification and payment:

1. The practices shall be surveyed and measured to verify that they meet the requirements as shown on the drawings.
2. The contractor shall develop a list of final quantities for use in the Farm Bill contract payment and also submit the calculations and documentation that support these quantities. The final quantities as well as the constructed dimensions shall be placed on the “as-built” drawings.
3. Submit a copy of the “as-built” drawings, including supporting authorizations for changes made to the original plans and specifications.
4. The as-built drawings shall include the following certification statement: “To the best of my professional knowledge, judgment, and belief, the installed practices meets NRCS standards.” and be signed by the contractor who designed them.
5. Submit a copy of the construction documentation required in the inspection plan.

Additional technical information and practice documentation requirements are available at <http://www.ma.nrcs.usda.gov>.

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§MA505.07 Design requirements document for roof over facility (PE licensure required)

DESIGN, INSTALLATION, AND CERTIFICATION REQUIREMENTS

Roof over Facility

SCOPE

This document describes the requirements for a consultant to design and certify installation of a roof over a proposed or installed facility (a waste storage facility, composting facility, barnyard area, or agrichemical mixing facility) so that the client may receive partial reimbursement from NRCS for the cost of installing the roof. The purpose of the roof is to exclude direct rainfall from the facility. The consultant must be a registered Professional Engineer (PE) in the State of Massachusetts.

DESIGN DRAWINGS AND SPECIFICATIONS

The consultant shall submit the following to the client, who will forward a copy to NRCS. NRCS must review and accept the submittals prior to construction.

1. Plans and specifications that reflect a site specific roof design, including all structural components, fasteners, and appurtenances necessary to construct the roof to resist the design loads and meet the intended purpose. The design shall conform to the following:
 - a. General requirements
 - The design must meet the requirements in NRCS Practice Standard “Waste Storage Facility”. The standard states that in addition to meeting all Federal and State laws, which includes the current Massachusetts Building Code, the roof must also meet the requirements in the ASAE EP288.5 Standard, *Agricultural Building Snow and Wind Loads (Dec, 2001)*.
 - The designer is responsible for verifying foundation conditions including soil, bedrock and water table at the site, identifying affected utilities, and verifying proximity of the proposed roof in relation to other buildings or structures that may affect the design, for example, due to drifting or sliding snow loads.
 - The plans and specifications shall be provided to the client that adequately describe the requirements to obtain necessary permits and install the practice. They shall show the material requirements for the roof and support structure, including the fastener requirements. Specifications that are not shown on the plans shall be referenced on the plans and provided as an attachment.
 - In addition to the PE’s stamp and signature, the consultant shall include the following statement on the drawings: "To the best of my professional knowledge, judgment and belief, these plans meet applicable NRCS standards and specifications, the ASAE EP288.5 Standard, and the current Massachusetts Building Code."
 - b. Designs using manufactured trusses, where design of the supporting system for the trusses are needed.
 - The consultant shall verify that the manufactured trusses will meet the design snow and wind loads for the project.
 - The design drawing of the trusses from the truss manufacturer shall be submitted with the roof plans. The truss drawing shall clearly show the project name, the truss spacing, the design loads, and any bracing requirements. If the manufacturer also provides the roofing material, those requirements shall be included in the submittal. The truss drawings shall be stamped by a registered PE.

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- The consultant shall provide the required site specific support system for the manufactured trusses (posts, girders, foundation embedment, footings, bracing, fasteners, etc.) to resist the snow and wind loads. Any limitations or provisions of the design shall be clearly stated on the drawings.
- c. Designs using manufactured roof structures that include the supporting system for the trusses.
- The consultant shall verify that the manufactured roof structure will meet the design snow and wind loads for the project.
 - If not provided by the manufacturer for the project site, the consultant shall provide a site specific foundation design to meet the design loads.
 - The design drawings of the roof and supporting system from the roof structure manufacturer shall be submitted. The drawings shall clearly show the project name, the design loads, and the requirements to install the building. The building drawings shall be stamped by a registered PE.
2. Inspection Plan which describes inspection items and qualifications of those performing the inspection, and any construction documentation requirements during installation.
- Installation manuals or instructions from manufacturers shall be provided to the landowner and builder.
3. An Operation and Maintenance Plan which describes those items necessary for the landowner to perform after installation to ensure that the roof meets its intended life span.
4. At the request of the client, provide a cost estimate for installation of the roof.

INSTALLATION

1. Pre-installation conference with client and builder, as necessary.
2. Work with the client or builder as needed to ensure proper installation of the roof structure, and that proper inspections and documentation are performed as stated in the inspection plan.
3. Work with client to approve any needed modifications to the submitted plans and specifications. Changes to manufactured products or to the installation requirements of the manufacturer require the written approval from the manufacturer.

AS-BUILT DRAWINGS AND CERTIFICATION

1. As-Built drawings of the installed roof structure shall be submitted to the client. The drawings shall include supporting authorizations for changes made to the original plans and specifications. Any documentation requirements from the inspection plan shall also be included.
2. The as-built drawings shall include a certification statement which states: "To the best of my professional knowledge, judgment and belief, the installed roof meets NRCS standards and specifications, the ASAE EP288.5 Standard, and the current Massachusetts Building Code" and be signed by the consultant who designed it.

REFERENCES

- NRCS Field Office Technical Guide, Section IV, Massachusetts Conservation Practice Standard – Waste Storage Facility (313)
- ASAE EP288.5, Agricultural Building Snow and Wind Loads, Dec, 2001

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(210-V-NEM, Amend. MA29, March 2006)

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SUBPART E – EXHIBITS

§MA505.43A Landowner use of consultant for roof design – Letter to Landowner

<DATE>

<Landowner>

<Address>

<Town, State> <zip>

RE: Use of consultant design for roof over <describe facility>

Dear <Landowner name>,

Choose either of the first 2 paragraphs, whichever applies (delete the other paragraph and this line):

The roof over the proposed <describe facility> requires a site specific design by a private consultant. You need to be aware that the NRCS will require that the consultant be responsible for meeting NRCS standards and specifications and for certifying the work.

You have indicated that the roof over the proposed <describe facility> will be designed by a private consultant. The Natural Resources Conservation Service (NRCS) welcomes the involvement of your consultant. However, you need to be aware that the NRCS will require that the consultant be responsible for meeting NRCS standards and specifications and for certifying the work.

There are certain items which must be submitted to the NRCS to meet this requirement. These items are outlined in this letter. We hope this will provide a clear understanding for all parties involved and prevent any possible misunderstanding. The following items are needed.

Prior to construction

1. Submit the following to NRCS. NRCS must review and accept the plans before construction may begin:
 - a. A copy of the signed engineering plans which meet NRCS standards. The design, plans and specifications must meet the requirements in the enclosed *Design and Installation Requirements – Roof over Facility* document.

The consultant signing the plans must be a registered Professional Engineer (PE) in the State of Massachusetts. In addition to the PE's certification, the plans shall contain the following statement: "To the best of my professional knowledge, judgment and belief, these plans meet applicable NRCS standards and specifications, the ASAE EP288.5 Standard, and the current Massachusetts Building Code."

The applicable standard for the roof is the NRCS Waste Storage Facility (313) Practice Standard. The standard states that, in addition to meeting all Federal and State laws, which includes the current Massachusetts Building Code, the roof must also meet the requirements in the ASAE EP288.5 Standard, *Agricultural Building Snow and Wind Loads*.

Two copies each of the Waste Storage Facility Standard, the ASAE Standard, and the *Design and Installation Requirements – Roof over Facility* document are enclosed. Please provide a copy of each to your consultant. Also provide a copy of this letter to your consultant.

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MA505.43A

- b. Specifications shall be included indicating minimum material requirements and any specific requirements for constructing the roof.
 - c. A copy of the PE stamped truss drawings for your project showing the loads and required bracing.
 - d. A copy of an inspection plan which describes inspection items and qualifications of those doing the inspection.
2. You must ensure that all utility companies with facilities in the work area have been contacted prior to construction, and that any affected utilities have been located and clearly marked by the company.
 3. We suggest that you request a cost estimate from your consultant for installation of the roof.

During Construction

1. You must ensure that the inspection plan is carried out and that the structure is completed according to the consultant's submitted plan and specifications.
2. Changes during construction must be approved by the consultant and noted on "as-built" drawings.

After Construction

1. Upon completion, you must submit to NRCS a copy of the "as-built" drawings, a signed certification statement, and a copy of any construction documentation required in the inspection plan. The certification statement shall read, "To the best of my professional knowledge, judgment and belief, the installed practice meets NRCS standards, the ASAE EP288.5 Standard, and the current Massachusetts Building Code." and be signed by the consultant who designed it.
2. NRCS will make a field visit to the site and will certify completion based on the consultant's certification statement.

I hope this letter fully explains NRCS expectations. If you have any questions, please call me.

Sincerely,

<DC Name>
District Conservationist

Enclosures (2 copies each):
NRCS Practice Standard 313, Waste Storage Facility
ASAE Standard EP288.5
Design and Installation Requirements – Roof over Facility

cc: <Assigned engineer>, Civil Engineer, <location>
Carl J. Gustafson, State Conservation Engineer, Amherst
Consultant for the landowner

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(210-V-NEM, Amend. MA29, March 2006)

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SUBPART E – EXHIBITS

§MA505.43B Landowner use of consultant for practices requiring PE Licensure – Letter to Landowner

<Date>

<Landowner's name>

<Address>

<Town, State> <zip>

Subject: Contract <number>

Dear <Landowner name>:

Your <insert program (EQIP, WHIP, WRP, etc)> contract has you scheduled this year to implement the following practices:

<insert applicable practices>

You have indicated that these practices will be designed by a private consultant. The NRCS welcomes the involvement of your consultant. However, you need to be aware that the NRCS will require that the consultant be responsible for meeting NRCS standards and specifications and for certifying the work. Copies of the applicable NRCS standards are enclosed.

There are certain items which must be submitted to the NRCS to meet this requirement. These items are shown in the "Design, Installation, and Certification Requirements" document enclosed with this letter. NRCS must complete a review of the submitted package and accept them prior to construction.

We hope this will provide a clear understanding for all parties involved and prevent any possible misunderstanding.

You are responsible for the following items:

Prior to Construction

1. Select a private consultant to provide assistance for the above-described practice(s). The consultant must be a registered Professional Engineer (PE) in the State of Massachusetts.
2. Ensure that the consultant has the necessary information to perform the engineering service to NRCS standards and specifications. Please provide the following to your consultant:
 - a. A copy of each of the enclosed NRCS Standard(s).
 - b. A copy of the enclosed "Design, Installation, and Certification Requirements" document.
 - c. A copy of this letter
3. Ensure that all work performed is in accordance with the following laws and regulations:
 - a. National Historic Preservation Act
 - b. National Environmental Policy Act
 - c. Threatened and Endangered Species Act
 - d. All applicable state and local laws

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4. Submit the required documentation as described in the enclosed document “Design, Installation, and Certification Requirements” from the consultant to NRCS.
5. Obtain all permits as needed for implementation of these practices.
6. Ensure that off-site affects are determined, and that land rights for all affected properties are secured.
7. Pay the consultant for their engineering services.
8. You must ensure that all utility companies with facilities in the work area have been contacted prior to construction, and that any affected utilities have been located and clearly marked by the company.

During Construction

1. You must ensure that the inspection plan is carried out and that the structure is completed according to the consultant’s submitted plan and specifications.
2. Changes during construction must be approved by the consultant and noted on the as-built drawings.

After Construction

1. Upon completion, you must submit to NRCS a copy of the "as-built" drawings with a signed certification statement. The certification statement shall read: "To the best of my professional knowledge, judgment and belief, the installed practice meets NRCS standards." and be signed by the consultant who designed it.
2. Submit a copy of any construction documentation required in the inspection plan.
3. Provide the NRCS with all necessary documentation provided by the consultant to certify payment for technical services and any applicable cost-share for practices applied (according to the enclosed “Design, Installation, and Certification Requirements” document).

NRCS will make a field visit to the site and will certify completion based on the consultant’s certification statement.

I hope this letter fully explains NRCS expectations. If you have any questions, please call me.

Sincerely,

District Conservationist

Enclosures (2 copies each):

“Design, Installation, and Certification Requirements” document
NRCS Practice Standards _____, _____

cc: <Assigned engineer>, Civil Engineer, <location>
Carl J. Gustafson, State Conservation Engineer, Amherst
<Name of consultant and address, if known >

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(210-V-NEM, Amend. MA29, March 2006)

PART 505 – NON-NRCS ENGINEERING SERVICES
SUBPART E – EXHIBITS

§MA505.43C Landowner use of consultant for practices not requiring PE Licensure – Letter to Landowner

<Date>

<Landowner's name>

<Address>

<Town, State> <zip>

Subject: Contract <number>

Dear <landowner's name>:

Your <insert program (EQIP, AMA, etc)> contract has you scheduled this year to implement the following practices:

<insert applicable practices>

You have indicated that these practices will be designed by a contractor. The NRCS welcomes the involvement of your contractor. However, you need to be aware that the NRCS will require that the contractor be responsible for meeting NRCS standards and specifications and for certifying the work. Copies of the applicable NRCS standards are enclosed.

There are certain items which must be submitted to the NRCS to meet this requirement. These items are shown in the "Design, Installation, and Certification Requirements" document enclosed with this letter. NRCS must complete a review of the submitted package and approve them prior to construction.

We hope this will provide a clear understanding for all parties involved and prevent any possible misunderstanding.

You are responsible for the following items:

Prior to Construction

1. Ensure that the contractor has the necessary information to perform the engineering service to NRCS standards and specifications. Please provide the following to your contractor:
 - a. A copy of each of the enclosed NRCS Standard(s).
 - b. A copy of the enclosed "Design, Installation, and Certification Requirements" document.
 - c. A copy of this letter
2. Ensure that all work performed is in accordance with the following laws and regulations:
 - a. National Historic Preservation Act
 - b. National Environmental Policy Act
 - c. Threatened and Endangered Species Act
 - d. All applicable state and local laws

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3. Submit the required documentation as described in the enclosed document “Design, Installation, and Certification Requirements” from the contractor to NRCS.
4. Obtain all permits as needed for implementation of these practices.
5. Ensure that off-site affects are determined, and that land rights for all affected properties are secured.
6. Pay the contractor for their design services.
7. You must ensure that all utility companies with facilities in the work area have been contacted prior to construction, and that any affected utilities have been located and clearly marked by the company.

During Construction

1. You must ensure that the inspection plan is carried out and that the structure is completed according to the contractor’s submitted plan and specifications.
2. Changes during construction must be approved by NRCS prior to implementing the change. Approved changes shall be noted on the as-built drawings.

After Construction

1. Upon completion, you must submit to NRCS a copy of the "as-built" drawings with a signed certification statement. The certification statement shall read: "To the best of my professional knowledge, judgment and belief, the installed practice meets NRCS standards." and be signed by the contractor who designed it.
2. Submit a copy of any construction documentation required in the inspection plan.
3. Provide the NRCS with all necessary documentation provided by the contractor to certify payment for technical services and any applicable cost-share for practices applied (according to the enclosed “Design, Installation, and Certification Requirements” document).

NRCS will make a field visit to the site and will certify completion based on the contractor’s certification statement.

I hope this letter fully explains NRCS expectations. If you have any questions, please call me.

Sincerely,

District Conservationist

Enclosures (2 copies each):

“Design, Installation, and Certification Requirements” document
NRCS Practice Standards _____, _____

cc: <Assigned engineer>, Civil Engineer, <location>
Carl J. Gustafson, State Conservation Engineer, Amherst
<Contractor, if known>

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(210-V-NEM, Amend. MA29, March 2006)