

Part 505 – Non-NRCS Engineering Services

Subpart B – Use of Non-NRCS Engineering Services

IL505.11 Non-Project Activities

A. Non-NRCS Engineering Services

- (2) Upper Limits in Size and Complexity of Jobs Illinois NRCS Will Regularly Handle
- (i) Engineering assistance beyond normal planning, soils information, etc, will not be offered by NRCS – Illinois when the extent of the proposed practice exceeds the upper limits identified in Figure IL505-B1. For requests where the size or complexity of the proposed practice exceeds these limits, the requester should be referred to a professional consultant licensed in Illinois as a Professional Engineer or Structural Engineer, as applicable.
 - (ii) In addition, the following limitations apply:
 - For dams meeting Illinois Department of Natural Resources (IDNR) class I or II hazard classification, as defined in the IDNR Rules for Construction and Maintenance of Dams, survey and design assistance will not be provided by IL-NRCS personnel.
 - For ponds or grade stabilization structures requiring an IDNR permit, as defined in the IDNR Rules for Construction and Maintenance of Dams, survey and design assistance will not be provided by IL-NRCS personnel.
 - For livestock management facilities where the Illinois Department of Agriculture requires a Professional Engineer or Professional Geologist signature/seal for investigation or design, the requester will be referred to a professional consultant. These activities include but are not limited to:
 - Geologic investigations for determining existence of aquifer materials or karstified carbonate bedrock if a lagoon is proposed;
 - Design and construction inspection of liners for lagoons;
 - Design and construction inspection of liners for non-lagoon waste storage in areas with shallow aquifer material.
 - (iii) The State Conservationist may issue single case variances to the above limits, with significant justification. Request for waiver of the large job policy should be prepared on form IL-ENG-16B (Figure IL505-B2) by Field and Area office staff and submitted to the ASTC-FO for concurrence and forwarding to the State Conservationist.

Figure IL505-B1 Upper Limit Criteria for IL-NRCS Engineering Assistance

Practice		Upper Limit Criteria
410, 378, 350, 356, 587, 646, 656, 658, 657, 659	Dams	IDNR class I or II hazard classification as identified in §IL 505.11(A)(2)(ii)
410, 378, 350	Dams, non-wetland	IDNR Permit Required as identified in §IL 505.11(A)(2)(ii)
580	Streambank Stabilization	Drainage area exceeds 300 square miles
313	Waste Storage Facility	1000 lb Animal Units exceed 1000 or IL Dept. of Agriculture requires PE for investigation or design as identified in §IL 505.11(A)(2)(ii)
359	Waste Treatment Lagoon	1000 lb Animal Units exceed 1000 or IL Dept. of Agriculture requires PE for investigation or design as identified in §IL 505.11(A)(2)(ii)
367	Roofs and Covers	Covered area exceeds 12,000 square feet
634	Waste Transfer	Pipeline length exceeds 10,000 feet
All engineering practices not listed above		Job exceeds Class V

Figure IL505-B2 – IL-ENG-16B

04/12

REQUEST FOR VARIANCE – LARGE JOB

Field Office _____ Date _____

Project Identification (*Landowner or Operator*) _____

Site Location _____ Engineering Job Class _____

Description of Proposed Survey/Design _____

Justification for Variance Request _____

The work proposed above exceeds Job Approval Class V or limits in 210-V-NEM Figure IL505-B1. I am requesting a variance from the State Conservationist, authorizing commitment of NRCS resources to provide technical assistance for this activity.

Signed _____ Title _____

Concurrence _____ Date _____
Assistant State Conservationist – Field Operations

RESPONSE

The following staff person is authorized to provide assistance as per this request.

Name _____ Title _____

Or

The client requesting the above assistance should be referred to a professional consultant.

Signed _____ Date _____
State Conservationist

- (3) Utilization and Acceptance of Non-NRCS Engineering Services
- (i) Non-NRCS engineering services may be used to provide planning, design and construction inspection for NRCS projects. Non-NRCS engineering services are defined as those services provided by individuals who do not have delegated engineering job approval authority in accordance with Section IL501.4 of this manual.
 - (ii) For NRCS projects that utilize a Technical Service Provider (TSP), applicable policy can be found in the Title 440, Conservation Program Manual, Part 504, Technical Service Provider Assistance. The TSP takes full responsibility for the work product being provided: planning, design and/or construction inspection implemented through the TSP program. When TSP dollars are obligated into a contract for a practice, the District Conservationist or representative shall provide a letter to the contract participant describing the roles of all parties, including NRCS. A sample letter is provided in Subpart E, Section IL505.40, of this manual. The letter shall include as attachments a copy of the Statement of Work for each applicable practice.
 - (iii) For work on NRCS projects utilizing non-NRCS engineering services not associated with the TSP program, including those services provided by individuals who are certified as a TSP for the work product but not acting through the TSP program for a particular project, the following policy applies. The client in this case may be a contract participant, an agricultural producer or landowner, or other entity for whom NRCS is providing technical assistance.
 - Non-NRCS engineering services shall be provided by a professional consultant licensed in Illinois as a Professional Engineer or Structural Engineer, as applicable. State of Illinois regulations 225ILCS325 and 225ILCS340 define the scope of the practice of Professional Engineering and Structural Engineering, respectively. The professional consultant is responsible for determining the allowable scope of his or her activities and for engaging an additional consultant as needed to accomplish the project.
 - When non-NRCS engineering services are utilized for a roofed structure, the professional consultant will be responsible for the entire associated structure as well as the roof. This policy applies even when the roof is not directly connected to parts of the structure.
 - The NRCS District Conservationist or representative shall provide a letter to the client describing the roles of all parties, including NRCS. A sample letter is provided in Subpart E, Section IL505.41, of this manual. The letter shall include the following as attachments:
 - A copy of each applicable practice standard;
 - A copy of the Statement of Work for each applicable practice;
 - A copy of the applicable Design Requirements Document(s) – Section IL505.42 (for practices without roofs) and/or Section IL505.43 (for roofed structures) of this manual.
 - A pre-design conference with NRCS staff, the professional consultant, and the contract participant or representative is recommended on all projects to facilitate communication early in the design process. Other meetings during the design may be necessary for more complex projects.

- The contract participant is responsible for submitting the design and construction package (as described in the appropriate Design Requirements Document) to NRCS. The construction drawings and specifications shall contain the licensed engineer's seal and signature, and shall include the certification statement as stated in the appropriate Design Requirements Document.
 - For design approval, NRCS will perform a functional review of the design and construction package as described in Section 505.3B.(1)(iii), of this manual. This review shall be completed by an NRCS employee with the appropriate design engineering job approval authority and shall be documented in writing.
 - When the design and construction package is approved by NRCS, NRCS will inform the landowner in writing that construction may begin when the appropriate permits are obtained and after the preconstruction conference is held in accordance with Section IL 512.13(d), of this manual. The professional consultant is responsible for providing leadership at the preconstruction conference.
 - When the construction is complete, as-built drawings and supporting documentation shall be provided to NRCS, along with the certification statement as stated in the Design Requirements Document.
 - For construction approval, NRCS will perform a functional review of the constructed practice as described in Section 505.3C., of this manual. This review shall be completed by an NRCS employee with the appropriate construction engineering job approval authority, and shall be documented in writing. When complete, the written documentation shall state that the constructed practice meets NRCS standards and specifications, based on the certification of the professional consultant.
- (iv) For NRCS-designed projects that utilize commercially manufactured trusses, NRCS shall be provided with design certification from the truss design consultant or company and the installer using the Roof Structure Certification forms located in Subpart E, Section IL505.44, of this manual. The truss certification shall be completed as follows:
- The Truss Design form shall be completed, certified and sealed by a Structural Engineer licensed in Illinois.
 - A sealed and signed set of drawings for the trusses shall be included with the Truss Design Form.
 - The Truss Installation form shall be completed by the installer after construction, to document that the as-built structure meets the design plan.

Part 505 – Non-NRCS Engineering Services

Subpart E – Exhibits

IL505.40– Letter to client using Technical Service Provider (TSP)

<Date>

<Client Name>

<Address>

<Town, State> <ZIP>

Dear <Client Name>:

You have requested cost sharing from the Natural Resources Conservation Service (NRCS) for the following practice(s): <applicable practices>

You have indicated that these practices will be designed by a Technical Service Provider (TSP) certified for the practice(s) on the NRCS TechReg registry at <https://techreg.nrcs.usda.gov>. The NRCS welcomes the involvement of your TSP. However, you need to be aware that the NRCS will require that the TSP 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

- Select a TSP to provide assistance for the above described practice(s). **The TSP must have current TechReg certification for the work product(s).** I can provide you with a list of TSPs, upon request.
- Submit the required design information as described in Design section of the enclosed Statement(s) of Work from the consultant to NRCS.
- Obtain all permits as needed for implementation of these practices.
- Hire a contractor.
- Ensure that all utility companies with facilities in the work area have been notified prior to construction and that any affected utilities have been located and clearly marked.

During Construction

1. You are responsible for ensuring that the inspection plan is carried out and that the structure is completed according to the approved plans and specifications.
2. Changes during construction must be approved by the TSP.

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After Construction

1. Submit the required information as described in the Checkout section of the enclosed Statement(s) of Work from the consultant to NRCS.
2. Pay the TSP and the contractor for services provided.
3. Follow the Operation and Maintenance Plan for the practice(s).

If you have any questions, please call me.

Sincerely,

District Conservationist

Enclosure(s) – Statement(s) of Work for scheduled conservation practices

cc: <Area Engineer>, Agricultural Engineer, <location>
<Name of TSP and address, if known>

IL505.41 – Letter to client using non-NRCS engineering

<Date>

<Client Name>

<Address>

<Town, State> <ZIP>

Dear <Client Name>:

You have requested cost sharing from the Natural Resources Conservation Service (NRCS) for the following practice(s): <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 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. The following items are needed:

Prior to Construction

1. Select a private consultant to provide assistance for the above described practice(s). **The consultant must be licensed in the State of Illinois as a Professional Engineer or as a Structural Engineer, as applicable.**
2. Ensure that the consultant has the necessary information to perform the engineering service to NRCS standards and specifications. Please provide a copy of this letter and its attachments to your consultant.
3. Submit the required design information as described in the enclosed document “Design, Installation, and Certification Requirements” from the consultant to NRCS.
4. NRCS will do a review of the design to confirm it meets NRCS standards and specifications. To continue to be eligible for NRCS Cost Share assistance, the design **MUST** be approved by NRCS prior to construction.
5. Obtain all permits as needed for implementation of these practices.
6. Hire a contractor.
7. Ensure that all utility companies with facilities in the work area have been notified prior to construction and that any affected utilities have been located and clearly marked.
8. Participate in a preconstruction conference, with the consultant, contractor, and a representative of NRCS, after the design has been approved by NRCS, and before any construction begins.

During Construction

1. You are responsible for ensuring that the inspection plan is carried out and that the structure is completed according to the approved plans and specifications.

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2. Changes during construction must be approved by the consultant and NRCS and noted on the as-built drawings.

After Construction

1. Upon completion, you must submit a copy of the as-built drawings and a signed certification statement as described in the enclosed document “Design, Installation, and Certification Requirements” to NRCS.
2. Submit a copy of any construction documentation required in the inspection plan.
3. Submit all necessary documentation of final quantities provided by the consultant described in the enclosed document “Design, Installation, and Certification Requirements” to NRCS.
4. NRCS will make a field visit to the site and will certify the completion based on the consultant’s certification statement.
5. Pay the consultant and the contractor for services provided.
6. Follow the Operation and Maintenance Plan for the practice(s).

If you have any questions, please call me.

Sincerely,

District Conservationist

Enclosures – NRCS Standards for scheduled conservation practice(s)
Design, Installation and Certification Requirements
Statement(s) of Work for scheduled conservation practices

cc: <Area Engineer>, Agricultural Engineer, <location>
<Name of consultant and address, if known>

**DESIGN, INSTALLATION, AND CERTIFICATION REQUIREMENTS
Conservation Practices Designed by Consultant
(Excluding Practices with Roof Structures)**

This document describes the requirements for professional consultants to design and certify the installation of engineering conservation practices, so that the client may receive cost share payment from the Natural Resources Conservation Service (NRCS) for the cost of installing those practices. **The professional consultant must be licensed in the State of Illinois as a Professional Engineer or as a Structural Engineer, as applicable.**

Design and Construction Package

The professional consultant must submit the following items to the client, who will provide a copy to NRCS. **Prior to construction**, for the producer to continue to be eligible for NRCS financial or technical assistance, the design and construction package must be reviewed and accepted by NRCS.

1. A reproducible copy of the sealed and signed construction drawings and specifications that reflect a site specific design of the conservation practice(s) and meets the requirements of the applicable NRCS practice standards. If more than one professional consultant is responsible for parts of the drawings, all sections of the plans must be signed and sealed by the applicable professional consultant. The professional consultant who has contract responsibility shall seal the cover sheet of the technical submissions.
 - a. The consultant is responsible for verifying foundation conditions including soil, bedrock, and water table at the site.
 - b. Provide 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 professional consultant's seal and signature, the consultant shall also certify by signing on the drawings the following statement: *"To the best of my professional knowledge, judgment, and belief, the design, construction drawings and specifications meet applicable NRCS standards."*
2. A copy of the written design documentation for the practices showing that the design meets NRCS standards.
3. A copy of the construction inspection plan that states the items requiring inspection, documentation requirements, and qualifications of those doing the inspection.
4. A copy of the operation and maintenance (O&M) plan for the practices designed.
5. All other items listed in the Design section of the relevant Statement(s) of Work.

Preconstruction Conference

The project must have a design plan approved by NRCS prior to the preconstruction conference. **Prior to construction**, a preconstruction conference shall be held to review the approved design plans and construction specifications, the construction inspection plan, and the required documentation and certifications. The professional consultant shall provide leadership at the preconstruction conference.

At a minimum, the preconstruction conference will be attended by:

- The professional consultant;
- The landowner/operator or their authorized representative;
- The person who will be responsible for performing the work (contractor);
- An NRCS representative.

Changes During Construction

Changes made during construction must be approved by the professional consultant and by NRCS prior to the implementation of the change. All approved changes are to be noted on the as-built drawings.

After Completion of Construction

Upon completion of construction, the following shall be completed 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 prepare and submit a copy of the as-built drawings, including supporting authorizations for changes made to the original construction drawings and specifications.
3. In addition, the professional consultant shall certify by signing on the as-built drawings the following statement: *“To the best of my professional knowledge, judgment, and belief, this practice(s) is installed in accordance with the plans and specifications and meets NRCS standards.”*
4. Submit a copy of the construction documentation required by the construction inspection plan, including documentation to demonstrate compliance with the material specifications of the design.
5. All other items listed in the Checkout section of the relevant Statement(s) of Work.

DESIGN, INSTALLATION, AND CERTIFICATION REQUIREMENTS

Roofed Structures Designed by Consultant

This document describes the requirements for professional consultants to design and certify the installation of a roofed structure (such as a waste storage facility or composting facility), so that the client may receive cost share payment from the Natural Resources Conservation Service (NRCS) for the cost of installing the roofed conservation practice. **The professional consultant must be licensed in the State of Illinois as a Professional Engineer or as a Structural Engineer, as applicable.**

Design and Construction Package

The professional consultant must submit the following items to the client, who will provide a copy to NRCS. **Prior to construction**, for the producer to continue to be eligible for NRCS financial or technical assistance, the design and construction package must be reviewed and accepted by NRCS.

1. A full, reproducible set of construction drawings and specifications that reflect a site specific design of the conservation practice(s) and meets the requirements of the applicable NRCS practice standards. The package must include a site specific roof design, including all structural components, fasteners, and appurtenances necessary to construct the roof to resist the required design loads and meet the intended purpose. If more than one professional consultant is responsible for parts of the drawings, all sections of the plans must be signed and sealed by the applicable professional consultant. The professional consultant who has contract responsibility shall seal a cover sheet of the technical submissions. The design shall conform to the following:
 - a. The professional consultant is responsible for verifying foundation conditions including soil, bedrock, and water table at the site, and verifying proximity of the proposed roof in relation to other buildings or structures that may affect the design (for example – drifting and sliding snow loads).
 - b. The roof design must meet the requirements in NRCS Illinois Conservation Practice Standard 313 – Waste Storage Facility. This standard states that in addition to meeting all Federal and State laws (including any applicable building codes), the roof must also meet the requirements for wind and snow loads as specified in ASCE/SEI 7-05 (or latest version) Minimum Design Loads for Buildings and Other Structures, except that minimum loading used for Illinois shall be: Wind Load Basic Velocity Pressure = 15 psf and Ground Snow Load = 20 psf.
 - c. A copy of the written design documentation for the practices showing that the design meets NRCS standards.
 - d. Construction drawings and specifications that are provided to the client shall adequately describe the requirements to obtain necessary permits and to install the practice. They shall contain the material requirements for the roof and support structure, including the fastener requirements. Specifications that are not shown on the drawings shall be referenced on the drawings and provided as an attachment.
 - e. **Additional requirements** for designs using manufactured trusses where design of the supporting system for the trusses is needed:
 - i. The professional consultant shall verify that the manufactured trusses will meet the design loads for the project as specified above in 1.b.
 - ii. 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 sealed and signed by a Structural Engineer licensed in the State of Illinois.**

- iii. The professional consultant shall provide the required site specific support system for the manufactured trusses (post, 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.
 - f. **Additional requirements** for designs using manufactured roof structures that include the supporting system for the trusses:
 - i. The professional consultant shall verify that the manufactured roof structure will meet the design loads for the project as specified above in 1.b.
 - ii. If not provided by the manufacturer for the project site, the professional consultant shall provide a site specific foundation design to meet the design loads.
 - iii. The design drawings of the roof and supporting system by 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 sealed and signed by a Structural Engineer licensed in the State of Illinois.**
 - g. In addition to the professional consultant's seal and signature, the consultant shall also certify by signing on the drawings the following statement: *"To the best of my professional knowledge, judgment, and belief, the design, construction drawings and specifications meet applicable NRCS standards."*
2. An Inspection Plan, which describes inspection items and qualification of those performing the inspection, and any construction documentation requirements during installation. Installation manuals or instructions from the manufacturer shall be provided to the landowner and builder.
 3. An Operation and Maintenance Plan, which includes those items necessary for the landowner to perform after installation to ensure that the roof meets its intended life span.
 4. All other items listed in the Design section of the relevant Statement(s) of Work.

Preconstruction Conference

The project must have a design plan approved by NRCS prior to the preconstruction conference. **Prior to construction**, a preconstruction conference shall be held to review the approved design plans and construction specifications, the construction inspection plan, and the required documentation and certifications. The professional consultant shall provide leadership at the preconstruction conference.

At a minimum, the preconstruction conference will be attended by:

- The professional consultant;
- The landowner/operator or their authorized representative;
- The person who will be responsible for performing the work (contractor);
- An NRCS representative.

Changes During Construction

Changes made during construction must be approved by the professional consultant and by NRCS prior to the implementation of the change. Changes to manufactured products or to the installation requirements of the manufacturer require the written approval from the manufacturer. All approved changes are to be noted on the as-built drawings.

After Completion of Construction

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

- The practices shall be surveyed and measured to verify that they meet the requirements as shown on the drawings.
- The consultant shall prepare and submit a copy of the as-built drawings, including supporting authorizations for changes made to the original construction drawings and specifications.
- In addition, the professional consultant shall certify by signing on the as-built drawings the following statement: *“To the best of my professional knowledge, judgment, and belief, this practice(s) is installed in accordance with the plans and specifications and meets NRCS standards.”*
- Submit a copy of the construction documentation required by the construction inspection plan, including documentation to demonstrate compliance with the material specifications of the design.
- All other items listed in the Checkout section of the relevant Statement(s) of Work.

**Roof Structure Certification
Truss Design**

I hereby certify that trusses described below meet the minimum wind and snow load requirements of ASCE SEI/ASCE 7-05 (or latest version), Minimum Design Loads for Buildings or Other Structures, except that minimum loading used for Illinois shall be:

Wind Load, Basic Velocity Pressure = 15 psf

Ground Snow Load = 20 psf

Truss Description _____

***Attach Signed/Sealed set of drawings for Trusses**

Signed/Sealed _____ **Date** _____

Licensed Structural Engineer

for

Truss Manufacturer/Designer: _____

Address: _____

**Roof Structure Certification
Truss Installation**

I hereby certify that the roof structure described below was constructed by

and that said construction is adequately supported, braced and anchored to accommodate snow and wind load requirements of ASCE SEI/ASCE 7-05 (or latest version), Minimum Design Loads for Buildings or Other Structures except that minimum loads used for Illinois are:

Wind Load, Basic Velocity Pressure = 15 psf

Ground Snow Load = 20 psf

Roof Structure Description _____

Signed _____ **Date** _____

for

Installer: _____

Address: _____
