

STANDARD DESIGN
MAGAZINE, PRECAST CONCRETE, EARTH COVERED
STD 421-80-05

VOLUME II
SPECIFICATIONS

Huntsville Division
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Huntsville, Alabama

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STANDARD SPECIFICATIONS

STD 421-80-05

FOR

MAGAZINE, PRECAST CONCRETE BOX,

EARTH-COVERED

DEPARTMENT OF THE ARMY

HEADQUARTERS, U. S. ARMY CORPS OF ENGINEERS

WASHINGTON, DC

GENERAL NOTES

1. This standard specification is to be used in the preparation of project specifications in accordance with ER 1110-345-720. It will not be made a part of a contract merely by reference; pertinent portions will be copied verbatim into the contract documents.
2. The designations for publications listed in the Applicable Publication paragraphs are those that were in effect when this standard specification was being prepared.
3. Additions to or deletions from this standard specification will be only that which is necessary to adapt the specification to site conditions, such as foundation design or abnormal climate conditions.
4. This specification is intended to be used in specifying Earth Covered, Steel and Concrete Box Magazines as shown on the following drawings:

<u>Drawing No.</u>	<u>Sheet No.</u>	<u>Title</u>
STD 421-80-05	G-1	Drawing Index and Cover Sheet
STD 421-80-05	S-1a	General Notes
STD 421-80-05	S-1b	Precast Magazines and Reinforced Earth Wingwalls, Plan, Elevation, Sections and Details
STD 421-80-05	S-1c	Techspan magazines. Longitudinal and transversal sections
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STD 421-80-05	S-3	Cast in Place Rear Wall Plan Elevation and Details
STD 421-80-05	S-3a	Precast Elements "F" and "M" Fabrication Details
STD 421-80-05	S-3b	Precast Elements "HMB" and "HME" Fabrication Details
STD 421-80-05	S-3c	Precast Elements Geometry and Details
STD 421-80-05	S-4	Miscellaneous Sections

STD 421-80-05	S-5	10'-0" Blast Door
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STD 421-80-05	S-7	Miscellaneous Blast Door Details
STD 421-80-05	E-1	Electrical Plan and Sections
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5. The following Corps of Engineers Guide Specifications were used in preparation of this standard specification:

<u>Section No.</u>	<u>Title</u>	<u>Guide Specification No./ Date/Latest Notice</u>
01300	Submittal Descriptions	CEGS 01300/Mar 91
01305	Submittal Procedures	CEGS 01305/Dec 89/N1
02147	Drainage Composites	N/A
02221	Excavation, Filling and Backfilling for Buildings	CEGS 02221/Mar 91/N1
02711	Foundation Drainage System	CEGS 02711/Apr 89/N3
03300	Concrete for Building Construction	CEGS 03300/Dec 88/N5
03420	Plant - Precast Structural	N/A
05500	Miscellaneous Metal	CEGS 05500/Jan 89/N5
07111	Elastomeric Membrane Waterproofing	CEGS 07111/May 90/N2
07120	Fluid-Applied Waterproofing	ETL 1110-3-306
09900	Painting, General	CEGS 09900/Feb 89/N5
16415	Electrical Work, Interior	CEGS 16415/Dec 91/N1
16670	Lightning Protection System	CEGS 16670/Dec 88/N2

TECHNICAL NOTES

1. These standard specifications include numerous options left to be completed by the final designing or site adapting agency. These are generally either site-specific technical options, or options for procedures, submittals, or schedules that vary between design agencies. These Technical Notes indicate the location and required actions or choices for each of these options. For most submittals, the specifications designate the most reasonable choice of Government Approval (GA) or For Information Only (FIO). However, any of the required submittals may be designated GA or FIO at the discretion of the final designer.

2. Section 01305:

a. Paragraph 3.2: The Submittal Register (ENG Form 4288) is not a part of this specification. The completed ENG Form 4288 must be developed locally for each project and included at the end of this section. Indicate the required number of copies of the submittal register to be provided and the deadline for this submittal.

b. Paragraph 3.3: Indicate the required number of days for review and approval of submittals.

c. Paragraph 3.4: The Transmittal Form (ENG Form 4025) is not a part of this standard specification. The sample ENG Form 4025 must be added locally at the end of this section.

d. Paragraph 3.5.1: Add applicable submittal procedures.

e. Paragraph 3.7: Indicate the number of submittal copies to be retained by the Contracting Officer and returned to the Contractor.

3. Section 02147:

a. Paragraph 2.1.1: Select maximum and minimum Equivalent Opening Sizes (EOS) for the geotextile based on the soil materials to be used as filter materials and fill. Guidance on geotextiles is contained in Civil Works Guide Specification 02215.

4. Section 02211:

a. Paragraph 2.1.5: Select maximum particle size, based on site conditions. See TM 5-818-2.

b. Paragraph 2.1.7: Sand and gravel filter material gradations must be designed for the particular conditions present at each individual site. Guidance on filter design is contained in TM 5-820-2.

c. Paragraph 3.1: Select appropriate disposition of cleared and grubbed materials.

d. Paragraph 3.2: Indicate depth of topsoil removal.

e. Paragraph 3.6: If rock excavation is not anticipated, excavation should be unclassified.

f. Paragraph 3.7: If blasting will be permitted, provide reference to appropriate safety standards for blasting, and provide POC at the installation Safety Office for coordination.

g. Paragraph 3.9: Define source, extent, and quality of available borrow at the site. Delete bracketed text if bidding is on a lump sum basis.

h. Paragraph 3.10: Select appropriate disposition of excavated materials.

i. Paragraph 3.12: Determine requirements for moisture content control of fill material and provide allowable limits.

j. Paragraph 3.13: Indicate compaction limits for expansive materials, if used.

k. Paragraph 3.14: (1) Select appropriate test method(s) for the particular site. (2) Provide specific types and frequencies of tests required for the particular site in question.

5. Section 02285:

a. Paragraph 1.7: Indicate warranty period.

6. Section 02711:

a. Paragraph 2.1: Select materials for contract requirements.

b. Paragraph 3.2.5: Select end treatment for outlet lines.

c. Paragraph 3.2.6: Select preferred extent of initial backfilling around the drainage pipes.

d. Paragraph 3.2.7: When required, provide cleanout locations on the appropriate drawings.

7. Section 05500:

a. Paragraph 2.11: The high security shrouded hasp is a Government furnished, Contractor installed item. The hasp must conform to Military Specification MS MIL-H-29181 as specified. The hasp assembly, including its mounting jig, is available through supply channels directly from the following manufacturers:

Tennessee Investment Casting Company
Bristol, TN 37620
(615) 968-4522

Shell Cast Incorporated
Whitehall, MI
(616) 893-8245

8. Section 09900:

a. General: The only surfaces that absolutely require painting are the ferrous metal surfaces of the door, door frame, and weather hood. Painting the interior and exterior galvanized surfaces and the exterior concrete surfaces is at the option of the site adapting agency. Modify the painting schedule and the specification as required to reflect the actual building components to be painted.

9. Section 16415:

a. Paragraph 3.5.2: Select the cover mechanism for exterior weatherproof receptacles.

10. General: Ground cover over igloos MUST be provided in the Specifications. This cover should be grass only and should not be any species with roots that would penetrate deeper than the 4-inch topsoil layer.

11. Waterproofing and Drainage Systems: The design drawings include details for the drainage composite mat system and the gravel filter drainage system. The drainage composite mat system is recommended. Only the drainage composite system is reflected in the cost estimate. If the gravel system is used, Section 02147 can be omitted, and the cost estimate must be revised. If the gravel filter system is used, the magazine must be waterproofed using the fluid-applied waterproofing system specified in Section 07120. If the drainage composite system is used, the magazine must be waterproofed with the elastomeric membrane system specified in Section 07111.

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