

LAND USE AND DEVELOPMENT

102 Attachment 9

Township of Bethlehem

Submission Cover Sheet¹
[Amended 10-5-2006 by Ord. No. 255-37-2-2006]

Carbonate Area District: Carbonate Rock District
Carbonate Drainage Area

Geotechnical Investigation Program

Submission for _____ Phase I
_____ Phase II

OWNER'S NAME AND ADDRESS: _____

OWNER'S SIGNATURE: _____

DEVELOPER'S NAME AND ADDRESS: _____

APPLICANT'S NAME AND ADDRESS _____

Location of proposed development site: _____

Tax Block: _____ Tax Lot(s) _____

Type of proposed development:
____ Residential ____ Single-family ____ Single-family addition ____ Multifamily
____ Commercial
____ Industrial

Indicate if development occurs in Carbonate Rock District (CRD) or Carbonate Drainage Area (CDA): _____

¹Editor's Note: See §102-39.2.

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Proposed density (units per acre or lot coverage): _____

Any other data which the applicant wishes the municipality to consider:

Toxic/hazardous Materials (if applicable):

DISCLAIMER OF LIABILITY

In limestone areas, the alteration and development of land may be hazardous with respect to the foundation safety of structures, the creation of unstable land as a result of changes in drainage and grading, and the contamination of ground and surface waters.

The exact occurrence of sinkholes and/or subsidence is not always predictable; therefore, the administration of these regulations shall create no liability on behalf of the municipality, the Municipal Engineer, the Municipal Geotechnical Consultant, municipal employees, or municipal agencies as to damages which may be associated with the formation of sinkholes or subsidence. Compliance with these regulations represents no warranty, finding, guaranty or assurance that a sinkhole and/or subsidence will not occur on an approved property. The municipality, its agencies, consultants and employees assume no liability for any financial or other damages which may result from sinkhole activity.

It is also noted that sinkholes and ground subsidence may occur in areas outside the CRD and/or in areas of carbonate geology presently not identified as such. The applicant and/or property owner should always make independent investigations of these matters prior to using this land for construction of a building or structure or any activity which alters the soil and bedrock materials.

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Carbonate Area District Phase I Checklist [Added 4-18-1996 by Ord. No. 255-6-96; amended 10-5-2006 by Ord. No. 255-37-2-2006]

INSTRUCTIONS

- A. In compliance with the (name of municipality) land use code, all applications for development or improvements shall be accompanied by a completed checklist as an initial step of the geologic investigation required in the Carbonate Area District (which includes the Carbonate Rock District and Carbonate Drainage Area).
- B. Procedure for submission of documents:
1. The applicant shall submit the completed Phase I Checklist to the municipality for distribution to the Municipal Geotechnical Consultant (GTC). Applicants shall also submit the required application fee and escrow as per Section 110.0.¹
 2. Phase I and II Checklists may be completed and filed prior to the completion of other required submissions at the applicant's option.
 3. The applicant and the municipal approval authority will be advised within thirty (30) days of submission of the Phase I Checklist whether a waiver of completion of the Phase II checklist is being recommended by the GTC. The GTC may recommend a waiver of some or all of the required investigations as provided in subsection 106.5.² The approval authority will act on the GTC's completion report within thirty (30) days of receipt. Notice of the municipal action will be forwarded to the applicant in writing.

¹Editor's Note: See §102-39.2J.

²Editor's Note: See §102-39.2.

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- C. The Phase I Checklist is intended to ensure that the information to be submitted by the applicant demonstrates that the applicant has sufficient information available on geotechnical issues to enable the applicant to prepare a plan for investigation of the proposed development site.

- D. Any applicant with questions regarding whether applicant is entitled to a waiver of some or all segments of the geologic investigation is encouraged to contact the GTC prior to the commencement of the preparation of the geotechnical investigation program.

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Phase I Checklist

(Name of Municipality) Carbonate Area District (CAD) investigation program submission requirements: (check if attached)

____ US Geologic Survey 7½ minute topographic quadrangle maps with parcel identified.

____ USDA Soil Conservation Service soil survey map indicating soils present on parcel.

____ Information from any special reports completed by NJ State Geological Survey, US Geologic Survey, or NJ Department of Environmental Protection and Energy.

____ Site plan map at a scale of one (1) inch equals one thousand (1,000) feet, identifying proposed development site and boundaries of site that are within the CRA and/or CDA as designated on the municipal CAD map.

____ Aerial photograph print for the proposed site and surrounding area [taken at a minimum scale of one (1) inch equals one thousand (1,000) feet obtained during periods of little or no foliage cover].

____ Location of all known water production wells and well log information within one-half (1/2) mile of the project.

____ A project sketch plat at a minimum scale of one (1) inch equals two hundred (200) feet with existing surface water bodies, location of any existing water production wells, faults, outcrops, springs, sinkholes, disappearing streams and surface water flows.

____ Written narrative describing proposed activity.

____ Does the proposed project include the storage or manufacturing of toxic or hazardous materials? ____ no — yes, if yes attach an explanation of the type of activity.

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____ Other published geologic information which applicant deems pertinent.
(Information from other geologic investigation programs is on file with the Municipal Clerk.) Please specify:

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Carbonate Area District Phase II Checklist¹

INSTRUCTIONS

- A. In compliance with the (name of municipality) land use code, applications for development or improvements in CRD shall submit a completed Phase II Checklist to the municipality if required to do so after the review of Phase I Checklist.
- B. Procedure for submission of documents:
1. The applicant shall submit the completed Phase II Checklist to the municipal approval authority for distribution to the Municipal Geotechnical Consultant (GTC). Applicants shall also submit the required application fee and escrow.
 2. The applicant and the approval authority will be advised within thirty (30) days of submission as to completeness of the submission. The GTC may recommend a waiver of some or all of the required investigations as provided in Section 106 A5.² The approval authority shall act on the GTC's completeness review report within thirty (30) days of receipt.
 3. A permit may be issued to the applicant authorizing commencement of field investigations when the approval authority deems the geologic segment checklists to be complete.
 4. Phase I and II Checklists may be completed and filed prior to the submission of other required applications at the applicant's option.
- C. The Phase II Checklist is to include a detailed outline of the proposed investigation program, including reference to site specific investigation techniques, equipment, program objectives and remediation techniques.

¹Editor's Note: See §102-39.2.

²Editor's Note: See §102-39.2.

Phase II Checklist

Proposed investigation program to be conducted in CRD in (name of municipality).

A. General Requirements:

1. Test borings and test pits are to be used as the primary means of identifying potential geologic hazards. Percussion probes and other geophysical techniques (e.g. seismic refraction and reflection, ground penetrating radar, magnetic gravity and conductivity) can be used to provide data between test borings and pits.

2. Proposed exploration techniques which are not outlined in this checklist may be submitted to the GTC for review and possible inclusion in the approved investigation program. Alterations to the planned program can be made during the progress of the field investigation upon request to the GTC if so required by the nature of the encountered subsurface conditions.

B. The intention of the site investigation program is to define the nature and limits of possible design, construction and operating concerns that could result from the existence of carbonate soil and/or rock formations underlying the proposed development site.

C. List name and address of New Jersey licensed engineer:

List name and address of New Jersey licensed well driller:

List name and address of geologic consultant:

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TO BE COMPLETED BY GTC

Accept Reject See
Attached

1. DIRECT TESTING PROCEDURES.

_____ Test Borings.

(a) Number proposed: _____

(b) Depths anticipated: _____

NOTE: If rock encountered is within forty (40) feet of ground surface, a minimum of ten (10) feet of rock is to be cored. Rock cores shall be a minimum of two (2) inches in diameter, to be obtained by double-tube, split-barrel coring device or equivalent.

(c) Boring techniques to be used: _____

NOTE: Unless written approval is authorized, all test borings will be drilled using rotary wash/without use of drilling muds. Water losses in borings are to be monitored, as to depth and quantities; air loss, drilling speed and rod drops must also be monitored.

(d) Proposed bore hole grouting techniques shall be consistent with N.J.A.C. 7:9-9.1 et seq.

(e) Descriptions of proposed monitoring well completions. NOTE: Attach as-built drawing.

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	Accept	Reject	See Attached
(f) Soil and rock sampling to be performed in accordance with ASTM Standards D420, D1586, D1587 and D2113.	_____	_____	_____
(g) Logging of all test borings or test pits in accordance with the Unified Soil Classification System and in relation to the geologic origin of the constituents of the encountered materials, e.g. light yellow brown silty clay (CH), with occasional angular dolomite fragments, moderately stiff, residual soils, some stained paleo jointing.	_____	_____	_____
<hr/> Test Pits			
(a) Number and depth of proposed pits	_____	_____	_____
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NOTE: To be acceptable, minimum bottom area of pits shall be ten (10) square feet and shall encounter rock surface over fifty percent (50%) of the pit area.			
(b) Method of backfill to be employed:	_____	_____	_____
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NOTE; Test pit backfill shall be composed of excavated material placed in layers and compacted to pre-excavation density, unless authorized otherwise by GTC.			

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	Accept	Reject	See Attached
____ Piezometers, Lysimeters and Water Table Data			
(a) Number, locations and types to be used:	_____	_____	_____

(b) Other methods to be used:	_____	_____	_____

NOTE: These shall be installed and monitored in sufficient locations to identify depth to seasonable high water table and rate and direction of groundwater flow.

____ Geochemical Testing of Properties of Soils, Rock and Water			
Methods proposed:			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2. INDIRECT TESTING PROCEDURES

____ Percussion Probes.	_____	_____	_____
(a) Number proposed.			
(b) Depths anticipated.			
(c) Measuring techniques to be utilized.			

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	Accept	Reject	See Attached
_____ Geophysical Studies.			
(a) Seismic refraction and reflection; location and number of runs anticipated; equipment to be used: _____ _____ _____	_____	_____	_____
(b) Ground penetrating radar.	_____	_____	_____
(c) Magnetic, gravity or conductivity techniques: specify procedures and location of surveys.	_____	_____	_____
_____ Geologic Reconnaissance.			
(a) Factors to be examined —vegetative changes, observable seeps or groundwater discharge, circular depressions, swales.	_____	_____	_____
(b) Additional field investigation techniques proposed: _____ _____ _____	_____	_____	_____

MAPS, DRAWINGS AND OTHER DOCUMENTATION

(a) Location of site on 1:24,000 scale USGS topo map (See Phase I Checklist). General site plan showing locations of all field testing procedures, in relation to the planned development at a minimum scale of one (1) inch equals one hundred (100) feet.	_____	_____	_____
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	Accept	Reject	See Attached
(b) Timetable of proposed field investigation, laboratory testing, test data receipt and final report to the township. If investigation is to be performed in more than one (1) phase, give an estimated schedule of each phase and expected results.	_____	_____	_____
(c) Proposed technical inspection procedures during investigation (continuous technical supervision of field investigations is strongly recommended.)	_____	_____	_____
(d) Submission of application fees (72-13). Amount: _____ Date: _____ Future payments anticipated? _____	_____	_____	_____
(e) Special factors or conditions applicant wishes to bring to the attention of the GTC: _____ _____ _____	_____	_____	_____

MUNICIPAL GTC REVIEW

Approval of Phase I Checklist	_____	_____	_____
Approval of Phase II Checklist	_____	_____	_____
Phase I Checklist completion date: _____			
Phase II Checklist completion date: _____			
Conditions to be imposed on approval: _____ _____ _____			

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Accept	Reject	See Attached
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Denial of Phase I Checklist:

_____	_____	_____
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Denial of Phase II Checklist:

_____	_____	_____
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Remarks: