

Critical Geologic Formation Area Investigation Program

Submission Cover Sheet

Submission for ____ CGFI Checklist #1
____ CGFI Checklist #2

OWNER'S NAME AND ADDRESS: _____

OWNER'S SIGNATURE: _____

DEVELOPER'S NAME & ADDRESS: _____

APPLICANT'S NAME & ADDRESS: _____

Location of proposed development site: _____

Tax Block: _____ Tax Lot(s): _____

Type of proposed development:

____ Residential ____ Single-family ____ Multi-family

____ Single-family addition

____ Commercial

____ Industrial

Indicate if development occurs in Critical Geologic formation Area (C.G.F.A.) or Critical Formation Watershed Protection Area (C.F.W.P.A.): _____

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 that may be associated with the formation of sinkholes or subsidence. Compliance with these regulations represents no warranty, finding, guarantee, 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 that 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 that alters the soil and bedrock materials.

Critical Geological Formation Investigation Program Checklists

INSTRUCTIONS

- A. In compliance with the Land Use and Development Provisions of the Clinton Township Code, all proposals for development or improvements within the C.G.F.A. and/or C.F.W.P.A. shall submit completed CGFI checklists to the Township Planning Board as step one of the required geologic investigation required by the geologic segment of the E.I.S.
- B. Procedure for submission of documents:
1. The applicant shall submit the completed CGFI Checklist I to the Planning Board or Board of Adjustment Secretary for distribution to the Township Geotechnical Consultant (GTC). Applicants shall also submit the required application fee and escrow for geologic segment review (per Section 40-14F) with the submission.
 2. CGFI Checklists I and II may be completed and filed prior to the completion of other portions of the E.I.S. at the applicant's option.
 3. The applicant and the Planning Board/Board of Adjustment will be advised within thirty (30) days of submission of CGFI Checklist I whether a waiver of completion of CGFI Checklist II is being recommended by the GTC. The GTC may recommend a waiver of some or all of the required investigations as provided in subsection (G) of the general E.I.S. requirements.
- C. CGFI Checklist I 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.

**Critical Geological Formation Investigation Program
CHECKLIST I**

Clinton township C.G.F.A./C.F.W.P.A. investigation program preliminary requirements
(check if attached):

_____ Review of C.G.F.A. Map of Clinton Township

_____ Review of New Jersey Geological Survey Maps including both bedrock and surficial geologic mapping.

_____ Review of USDA publications and maps on Hunterdon County, Natural Resource Inventory and any unpublished information available in their files.

_____ Review of Special Report #24, Geology and Groundwater Resources of Hunterdon County, New Jersey, Div. Of Water Policy and Supply, Dept. of Conservation and Economic Development, NJ State Geological Survey, 1966.

_____ Submit with this checklist a site plan map at a scale of 1:24,000 identifying proposed development site and boundaries of site what are within the C.G.F.A. and/or C.F.W.P.A. as designated on the C.G.F.Z. Map.

_____ Review and Submission of aerial photographs for the proposed site and surrounding area (at a scale of 1" = 1,000' to 1" = 2,000' obtained during periods of little to no foliage cover).

_____ Summary of all known water production well logs and previous known subsurface investigations in the immediate area.

_____ Submission of a site map at a scale of 1" = 200' with a contour interval of two feet identifying existing surface water bodies, topography of the site, locations of any existing water production wells, faults, outcrops, springs, sinkholes, disappearing streams, and surface water.

_____ Review of data from previous nearby projects available from the Planning Board office.

_____ Submittal of the site boundaries upon a United States Geological Survey or New Jersey Geological Survey geology map.

_____ Submit any other published geologic information available to applicant which applicant deems pertinent.

Please specify: _____

**Critical Geological Formation Investigation Program
CHECKLIST II**

Proposed investigation program to be conducted in Clinton Township C.G.F.A.

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 that 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 who is overseeing karst investigation:

List name and address of New Jersey licensed well driller to be used for field the investigation:

1. DIRECT TESTING PROCEDURES

Accepted

Rejected

See Attached
Comments

___ Test Borings

(a) number proposed _____

(b) depths anticipated _____

NOTE: If rock encountered is within 40' of ground surface, a minimum of 10' of rock is to be cored. Rock cores shall be a minimum of 2" in diameter, to be obtained by double tube, split barrel coring device or equivalent.

(c) boring techniques to be utilized:

NOTE: Unless written approval is authorized, all test borings will be drilled using rotary wash boring procedures without use of drilling muds. Water losses in borings are to be monitored as to depth and quantities.

(d) proposed borehole grouting techniques:

(e) soil and rock sampling to be performed in accordance with ASTM Standards D420, D1586, D1587, and D2113.

(f) 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.

_____ Test Pits

(a) number and depth of proposed pits

NOTE: To be acceptable, minimum bottom area of pits shall be 10 square feet.

(b) method of backfill to be employed:

NOTE: Test pit backfill shall be composed of excavated material placed in layers and compacted to pre-excavation density, unless authorized otherwise by GTC.

_____ Piezometers, Lysimeters & Water table Data

(a) number, locations, & types to be used:

(b) other methods to be used:

NOTE: These shall be installed and monitored in sufficient locations to identify depth to seasonably high water-table and rate and direction of ground water 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 (air loss, material consistency and rod drops must be monitored).

_____ Geophysical Studies _____

- (a) seismic refraction and reflection; location and number of runs anticipated; equipment to be used: _____
- (b) ground penetrating radar; specify procedures and location of traverses _____
- (c) magnetic, gravity or conductivity techniques--specify procedures and location of surveys. _____

_____ Geologic Reconnaissance _____

- (a) factors to be examined – soil types, rock types, 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 Checklist 1). _____

(b) location of site on USGS or NJGS geology map (See Checklist 1) _____

(c) General site plan showing locations of all field testing procedures, in relation to the planned development at a minimum scale of 1"=200'. _____

(d) timetable of proposed field investigation, laboratory testing, test data receipt and final report to the Township. _____

(e) proposed technical inspection procedures during investigation (continuous technical supervision of field investigations is strongly recommended.) _____

(f) submission of application fees (Section 40-14F) _____

Amount: _____

Date: _____

Future payments anticipated:

(g) special factors or conditions applicant wishes to bring to the attention of the GTC: _____

TOWNSHIP GTC REVIEW

Approval of CGFI Checklists I and II ___ ___ ___

Date of completion of CGFI Checklist I: _____

Date of completion of CGFI Checklist II: _____

Conditions to be imposed on approval:

Date investigation to commence: _____

___ Denial of CGFI Checklists I and II.

Items needed for completion: _____

____ Waiver(s) (if any) deemed appropriate by GTC:

____ Approval of Critical Geological Formation Investigation Program by GTC. (Testing may begin in accordance with the approved Critical Geological Formation Investigation Program and the Township Ordinance. The Township Clerk and GTC must be provided 15 days written notice prior to any testing activities).