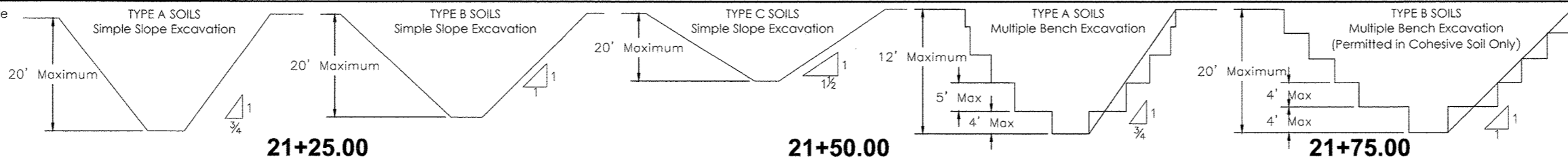


TABLE V-2-1. ALLOWABLE SLOPES. Soil type Height/Depth ratio Slope angle
 Stable Rock Vertical 90°
 Type A ¾:1, 53°
 Type B 1:1, 45°
 Type C 1½:1, 34°
 Type A (short-term) ½:1, 63° (For a maximum excavation depth of 12 ft)



EXCERPTS FROM THE OSHA TECHNICAL MANUAL
 SECTION V: CHAPTER 2
 EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING

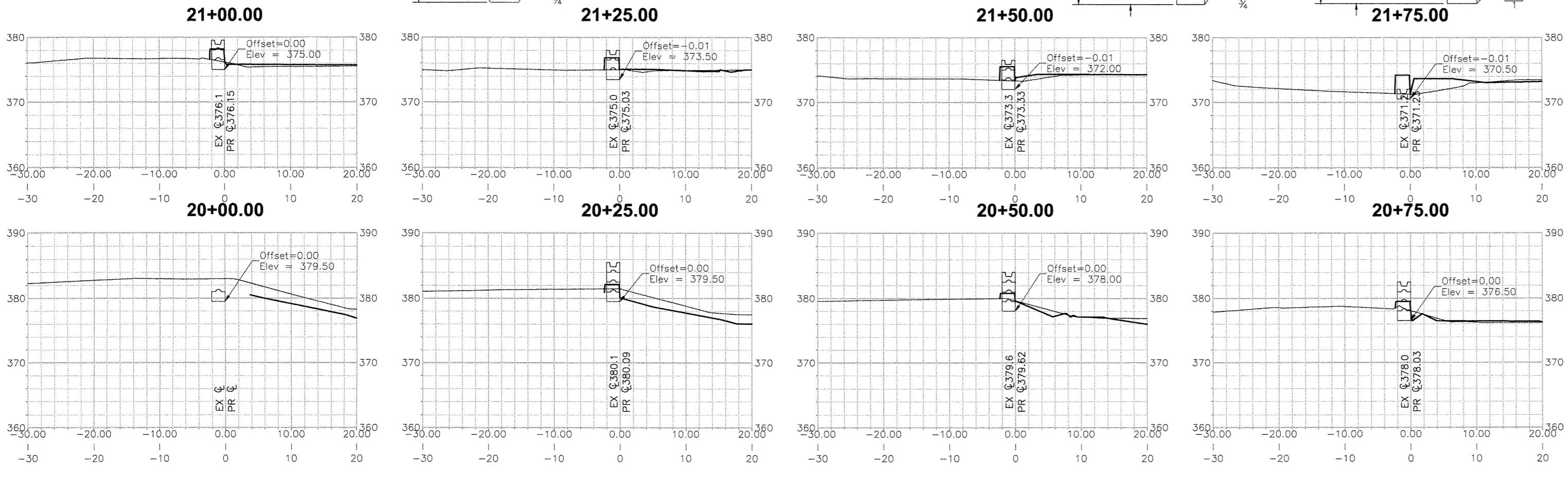
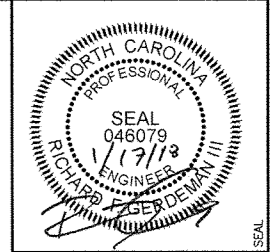
A. Sloping
 TYPE A SOILS are cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) (144 kPa) or greater. Examples of Type A cohesive soils are often: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. (No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, is part of a sloped, layered system where the layers dip into the excavation on a slope of 4 horizontal to 1 vertical (4H:1V) or greater, or has seeping water.)

TYPE B SOILS are cohesive soils with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa). Examples of other Type B soils are: angular gravel; silt; silt loam; previously disturbed soils unless otherwise classified as Type C; soils that meet the unconfined compressive strength or cementation requirements of Type A soils but are fissured or subject to vibration; dry unstable rock; and layered systems sloping into the trench at a slope less than 4H:1V (only if the material would be classified as a Type B soil).

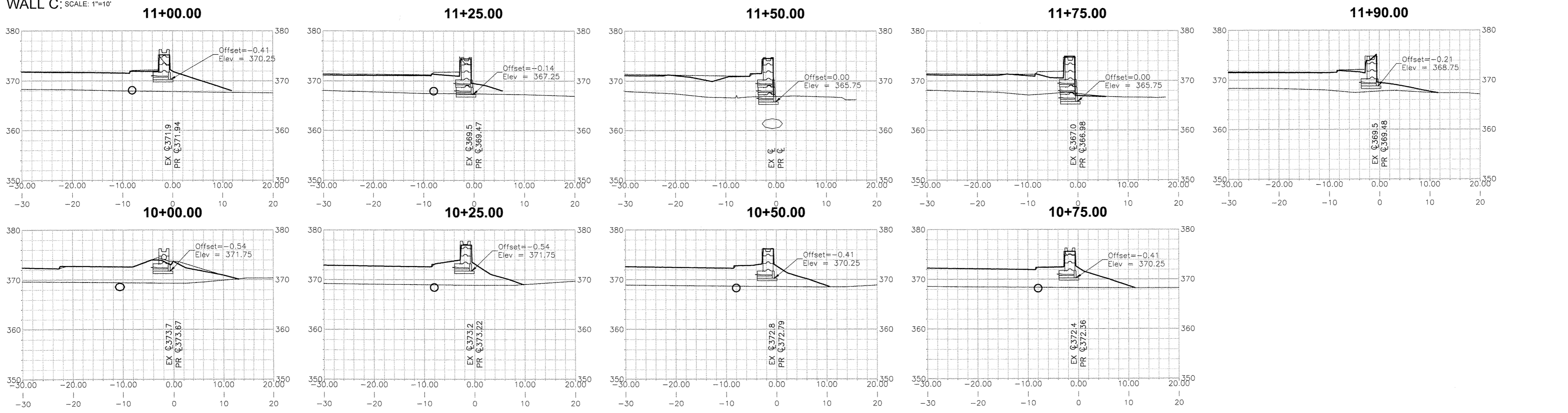
TYPE C SOILS are cohesive soils with an unconfined compressive strength of 0.5 tsf (48 kPa) or less. Other Type C soils include granular soils such as gravel, sand and loamy sand, submerged soil, soil from which water is freely seeping, and submerged rock that is not stable. Also included in this classification is material in a sloped, layered system where the layers dip into the excavation or have a slope of four horizontal to one vertical (4H:1V) or greater.

B. Benching
 There are two basic types of benching, simple and multiple. The type of soil determines the horizontal to vertical ratio of the benched side.

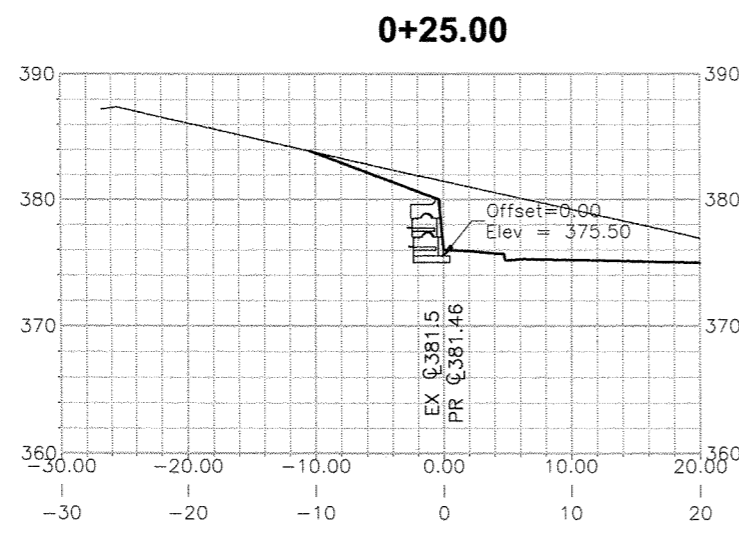
As a general rule, the bottom vertical height of the trench must not exceed 4 ft (1.2 m) for the first bench. Subsequent benches may be up to a maximum of 5 ft (1.5 m) vertical in Type A soil and 4 ft (1.2 m) in Type B soil to a total trench depth of 20 ft (6.0 m). All subsequent benches must be below the maximum allowable slope for that soil type. For Type B soil the trench excavation is permitted in cohesive soil only.



WALL C: SCALE: 1"=10'



WALL B: SCALE: 1"=10'



WALL A: SCALE: 1"=10'

REVISION	DATE	No.

PROJECT No: 075356
 DATE 01/17/18
 DES. [Signature]
 DR. [Signature]
 CKD. [Signature]

11301 Carmel Commons Blvd.
 Suite 300
 Charlotte, NC 28226
 704.525.6284
 FAX: 704.525.8529

WOOLPERT
 ARCHITECTURAL ENGINEERING (CORPORATE)

SITE IMPROVEMENT PLANS
WATERWALK MORRISVILLE
 1012 & 1016 LOWER SHILOH WAY
 MORRISVILLE, NORTH CAROLINA

CROSS SECTIONS

CONSTRUCTION SHALL NOT START UNTIL CONSTRUCTION MANAGER INITIALIZES A SRW INSTALLATION MEETING WITH ALL PARTIES & DESIGN ENGINEER.

MORRISVILLE PROJECT # : 17-11000001 FILE # : 17-0001-S/C

Town of Morrisville
 APPROVED FOR CONSTRUCTION

Signature: _____ Date: _____
 Town of Morrisville, Town Engineer

Signature: _____ Date: 5/23/18
 Town of Cary Utilities, Water and Sewer

Engineering: [Signature] Date: 5/23/18
 Planning: [Signature] Date: 5/23/18
 Other (specify): [Signature] Date: 5/23/18

Engineering Inspection Services must be contacted (919) 463-6907 at a minimum 24 hours prior to the commencement of any construction activities.