ADDENDUM NO. 1

Date: 27 March 2018
Project No.: 1730
Project Name: Burn Building for City of LaGrange

The Bidding Documents are modified as follows:

PART 1.00 DRAWINGS

1.01 SHEET S-1:

A. Per Note 2, please see attached tower loads for foundations to be designed by Sub-contractor. See (15) sheets of load information attached.

1.02 SHEET S-2, AS-2, and AS-3:

A. Adjust dimensions to work with 8′-6″ wide containers. Also all containers 1 thru 7 are 9′-6″ high.

1.03 SHEET S-13:

A. All piers to have (4) #6 vertical dowels with hooks top and bottom and #3 ties at 12″ O.C. with a minimum of two ties in footing.

1.04 SHEET S-17:

A. Detail 1/S17, provide two angles 1-1/4″ x 1-1/4″ x 3/16″ x 10″ long on each side of each tread welded to channel stringer, typical. Provide same size angle around entire perimeter of each landing continuous welded to support steel. G.C. coordinate exact length of clip angles with tread supplied.

1.05 SHEET AS-2:

A. Deleted this reference to Add. Alternate No. 5 in its entirety. See revised bid form for new Additive Alternates.

1.06 SHEET AS-3:

A. 4″ thick, 3000 PSI concrete slab, with welded wire fabric is to be provided sloped as shown under the containers with a concrete stem wall and footing around the entire perimeter except were left open to drain water. See 1/AS-2 for drain openings and 36″ wide x 4″ thick concrete flumes to top of existing curb. Welded wire fabric shall conform to ASTM A-185 and shalll be supplied in sheets (not rolls). Minimum lap length at ends and sides shall be 8″.

1.07 SHEET A1-0:

A. Details 1, 2, and 3, change widths of 53′-0″ containers to 8′-6″.

1.08 SHEET A1-1 thru A1-5:

A. Note: P.T. 2x8 framing and Trex Deck on face of tower will stop 9'-6" above the ground. (This framing and Trex Deck is part of Add. Alt. 4. See Detail 1/A5-2 for elevation view.

1.09 SHEET A1-2:

A. Only non-insulated doors may be hollow-metal with hollow-metal frames. See note 6 on this sheet.

B. Floors of containers 6 and 7 to remain. Maze constructions in containers 6 and 7 are not in project scope.

1.10 SHEET A1-5:

A. Omit "concrete pad landing" text on left hand landings at 3rd & 4th floor stair tower plan.

1.11 SHEET A1-7:

A. Detail 3/A1-7, change TS column to wide flange per Structural Drawings. Change tube steel beam shown to W6x15 on there sides and W12x14 on open side over repelling wall.

B. Detail 3/A1-7, roof to be Galvalume with Kynar 500 finish selected from manufacturers standard colors. Closed gables to be the same material, on 2x4's @ 16" O.C. with 5/8" exterior plywood and 25 mil ice and water shield.

1.12 SHEET A1-8:

A. Detail 2/A1-8, change spacing of TS 2x2 framing from "16" O.C." to "4'-0".

PART 2.00 PROJECT MANUAL

2.01 SECTION B - PROPOSAL FORM (REVISION NO 1):

A. See attached revised Proposal Form with new Add. Alt. No. 5. New pages B-1 thru B-4.

2.02 SECTION 07111 - UNDER SLAB MEMBRANE WATERPROOFING:

A. Delete this section in its entirety from the project scope.

2.03 SECTION 09900 - PAINTING:

A. Add. Alt. No. 5 to be to paint all exposed structural steel and exterior of all exposed to view portions of containers as described in Section 09900, Part 3.02, E, b.

PART 3.00 ADDENDA

NO ITEMS INCLUDED

PART 4.00 APPROVED MANUFACTURERS

NO ITEMS INCLUDED

PART 5.00 ATTACHMENTS

5.01 SECTION B - PROPOSAL FORM (REVISION NO 1)

A. Revised Sheets B-1 thru B-4 attached here to.

5.02 LOAD CALCULATION FOR TOWER FOOTINGS DESIGN

A. See attached pages 1 thru 15 attached here to.

5.03 COPY OF PRE-BID SIGN-IN SHEET

A. Attached here to.

5.04 GEOTECHNICAL REPORT DATED 22 MARCH 2018

A. (35) pages attached here to.

PART 6.00 GENERAL CLARIFICATIONS

6.01 TREX DECK

A. All decking to be based on Trex "Select" series.

6.02 INTERIOR PAINTING

A. There is to be no interior painting of containers.

6.03 E-VERIFY FOR CITY OF LAGRANGE

A. Go to City of LaGrange's website for E-Verify Compliance. Found under "City Services," "Bids & Vendors."

6.04 SCOUT MONITORING

A. Include (5) Scout Meters for containers 1, 2, 3, 4, and 5 as part of Add. Alt. No. 1.

END OF ADDENDUM NO. 1

SECTION B - PROPOSAL FORM (REVISION NO. 1 - 27 MAR 2018)

12 April 2018

Project No. 1730 - Burn Building for LaGrange Fire Department

INVITED BIDDERS:

B-01

Having carefully examined the drawings entitled "Burn Building for LaGrange Fire Department" and numbered____ and all dated 26 FEB 2018 and Addendum No. ________ as well as the premises and conditions affecting the work, the undersigned purposes to furnish all services, labor, and material called for by them for the entire work in accordance with said document for the TOTAL SUM OF ____DOLLARS ($___________)

B-02

The undersigned further purposes that, should any of the following alternatives be accepted and be incorporated in the Contract, the TOTAL SUM will be altered in each case as follows:

2.1 Deductive Alternatives: No Items Included

2.2 Additive Alternates:

2.2.1 Add. Alt. No. 1: Provide & install Scout Temperature Monitoring System in all burn rooms shown on the plan. $____

2.2.2 Add. Alt. No. 2: Design based on Westec Insulation System to be installed with 2" insulation blanket on walls and ceiling and minimum of 1" insulation planet on doors and windows. See specifications on drawings. Floors of burn rooms to have 2" insulation blanket with framing system with 1/4" checkered plate sill floor. See drawings for burn rooms to receive Westec Insulation

System on walls, ceiling, floors, doors, and windows. Insulated windows to be 1/2” plates on both sides.

$____

2.2.3 Add. Alt. No. 3: Provide 2”x48”x24” mineral wool high temperature insulation, density #8, green, 1200°F (design based on Roxul insulation). Provide & install on all walls, ceilings, floors, doors, and windows in all burn rooms designated on the drawings. Cover with 1/4” plate steel panels, screwed to framing to minimize buckling. Insulated windows to be 1/2” plates on both sides.

$____

2.2.4 Add. Alt. No. 4: Provide 0.82”x5.5” composite deck boards surface screwed to P.T. 2x8’s @ 16 o.c. on steel frame for rappelling surface. P.T. 2x8 framing and composite deck boards. Purchase & installation. See drawings.

$____

2.2.5 Add. Alt. No. 5: Paint all exposed structural steel and exterior of all exposed to view portions of containers wit paint as described in SECTION 09900, PART 3.02, E, b.

$____

B-03

For and in consideration of the sum of One Dollar ($1.00), the receipt of which is hereby acknowledged, the undersigned agrees that this proposal may not be revoked, or withdrawn for a period of sixty (60) days from and including the date of the Bid Opening.

B-04

The undersigned agrees to execute a contract (AIA Document A101) no later then ten (10) days from and including date of notification of acceptance of this proposal in writing, by mail, telegraph, facsimile transmission, or delivery.

B-05

The undersigned agrees to commence actual physical work on the site with an adequate force and equipment within ten (10) days from and including a date to be specified in written order of the Owner and be substantially complete in one-hundred and twenty (120) consecutive calendar days (See documents for phasing).

B-06

Enclosed herewith is a Bid Bond***** in an amount of ________________________

____

Dollars ($_______________________) being not less then 5% of the BASE BID. The undersigned agrees that the above-stated amount is the proper measure of liquidated damages which the Owner will sustain by failure of the undersigned to execute the Contract and to furnish the Performance Bond and the Labor & Material Payment Bond in case this proposal is accepted and further agrees to the following.

***Certified or Cashier's Check not acceptable**

B-07

If this proposal is accepted within sixty (60) days from and includingg the date of the Bid Opening and the undersigned fails to execute the Contract within ten (10) days from and including date of notice of such acceptance, or, if he fails to furnish with Performance Bond and Labor & Material Payment Bond, the obligation of the Bid Bond will remain in full force and effect, and the money payable therefore shall be paid the Owner as liquidated damage for such failure; otherwise the obligation of the Bid Bond will be null and void.

Respectfully submitted,

Name: ____

Address: ____

____

By: ____

Title: ____

The full names and addresses of persons and firms interested in the forgoing bids as principals are as follows:

________________________ ________________________

Legal Name of Bidder: ____

Concrete Subcontractor: ____

Painting Subcontractor: ____

Steel Installer: ____

Note: The Bid Form will not be accepted without the following breakdown of the Base Bid.

Division 1 - General Requirements	$__________________________
Division 2 - Demolition	$__________________________
Division 3 - Concrete	$__________________________
Division 4 - Masonry	$_____________NIC__________
Division 5 - Metals	$__________________________
Division 6 - Wood & Plastic	$__________________________
Division 7 - Thermal & Moisture Protection	$_____________NIC__________
Division 8 - Doors & Windows	$__________________________
Division 9 - Finishes (Painting)	$__________________________
Division 10 - Specialties	$__________________________
Division 11 - Equipment	$_____________NIC__________
Division 12 - Furnishings	$_____________NIC__________
Division 13 - Shipping Containers (Material & Delivery)	$__________________________
Division 14 - Conveying Systems	$_____________NIC__________
Division 15 - Mechanical	$_____________NIC__________
Division 16 - Electrical	$_____________NIC__________
BASE BID TOTAL	$__________________________

END OF SECTION B - PROPOSAL FORM

3-20-18

SIGN-IN SHEET

EVENT TITLE: Bwon Buildings - PRE BID IN LAGRANGE

	PRINTED NAME	COMPANY	PHONE	EMAIL
1	Joe Peterson	Aarene Contracting	904-860-3191	joe.peterson@aarenecontracting.com
2	Billy Hanson	Troup County Ready Mix	678-776-5003	billy@heardCountyConcrete.com
3	Jason Holcomb	Bayne Development Group	678 963 0793	jholcomb@baynedg.com
4	Don McGuire	Benchmark Contracting	706-333-5314	don@bmark usa.com
5	Lyle Daniel	Benchmark Contracting	706-523-1452	lyle@bmark usa.com
6	Erick Holle	Midsouth	706-881-2907	Erick@midsouthmechanical.com
7	Jeff Anderson	Midsouth	706-905-9832	janderson@midsouthmechanical.com
8	Jason Mitchell	Midsouth	706-302-6441	jmitchell@midsouth mechanical.com
9	Sykes Smith	Principle	706-333-7555	ssmith@principleco.com
10	Gary Moody	Principle	706-333-7788	lmoody@principleco.com
11	Skip Smith	SDG	706.412.0226	skip@sdgarch.net
12	Dion Senn	City of LaGrange	706-881-4563	dsenn@laggrangega.org
13	Chad Dallas	City of LaGrange F.D.	706-883-2656	cdallas@lagrangega.org
14	John Brant	City of LaGrange F.D.	706-523-0796	jbrant@lagrangega.org
15				
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SUBSURFACE EXPLORATION AND
GEOTECHNICAL ENGINEERING EVALUATION

PROPOSED BURN BUILDING AND STAIR TOWER
LAGRANGE, GEORGIA
GEC JOB NO. 180148.310

PREPARED FOR

MR. GORDON "SKIP" M. SMITH, JR.
SMITH DESIGN GROUP, INC.
206 WEST HARALSON STREET
LAGRANGE, GEORGIA 30240

PREPARED BY

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.
5031 MILGEN COURT,
COLUMBUS, GEORGIA 31204-3472
(706) 569-0008

MARCH 22, 2018

GEC

GEC

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC

March 22, 2018

Mr. Gordon "Skip" M. Smith, Jr.
Smith Design Group, Inc.
206 West Haralson Street
LaGrange, Georgia 30240

SUBJECT: Subsurface Exploration and Geotechnical Engineering Evaluation
Proposed Burn Building and Stair Tower
Lagrange, Georgia
GEC Project No. 180148.310

Dear Mr. Smith:

Geotechnical & Environmental Consultants, Inc. (GEC) is pleased to present this report of our subsurface exploration and geotechnical engineering evaluation for the above site. The purpose of the exploration was to obtain data to evaluate the site and subsurface conditions in order to provide recommendations relative to the geotechnical aspects of the project.

We greatly appreciate the opportunity to provide these services to you. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Sincerely,

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.

Bianca M. Wilson

GEORGIA REGISTERED No. 16617 PROFESSIONAL ENGINEER RICHARD L. CURTIS

Bianca M. Wilson, EIT
Project Engineer

Richard L. Curtis, P.E., D.GE
Chief Geotechnical Engineer
Ga. Reg. #16617

514 Hillcrest Industrial Boulevard, Macon, GA 31204 • Phone: (478) 757-1606 • Fax: (478) 757-1608
5031 Milgen Court, Columbus, GA 31907 • Phone: (706) 569-0008 • Fax: (706) 569-0940

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PROPOSED BURN BUILDING AND STAIR TOWER
LAGRANGE, GEORGIA
GEC PROJECT NO. 180148.310

APPENDIX

1.0 EXECUTIVE SUMMARY

The following summary highlights our pertinent findings and recommendations concerning this project.

- Site preparation will include the removal of any debris, topsoil, trees and vegetation, and any soft/loose near-surface soils in the planned construction areas. All stripped materials and debris should be disposed off-site or in non-structural areas.

- In general, the on-site materials appear to be suitable for use as structural fill, except for the organic-laden fill material encountered at the borings and the high-plasticity silt (MH) encountered in B-2.

- Groundwater was encountered at a depth of 6 feet in all three borings. Groundwater levels may be expected to fluctuate with changes in temperature, rainfall and other seasonal factors, and may at other times differ from those reported herein.

- Soft surface soils were encountered at in the borings ranging from 5 to 10 feet. Some of these surface soils may require remedial measures during construction to provide adequate subgrade support for new fill or planned construction.

- We recommend using conventional shallow foundations for support of the proposed burn building. An allowable soil bearing pressure of 1,500 psf may be used for design of shallow foundations bearing on competent existing soils or engineered fill.

- For the stair tower, we understand that either drilled shafts or helical piles/piers may be used to support the expected foundation loads. Either system should be suitable to support the stair tower structure.

- The concrete slab-on-grade floor for the proposed structures may be designed using a modulus of subgrade reaction of 100 pci for the soil types encountered at the site.

This executive summary has been prepared solely to provide a general overview of the report. The executive summary should not be relied upon for any purpose except for a general overview. Please rely on the full report for information concerning the findings, recommendations and other concerns at the site.

2.0 PROJECT INFORMATION

Our understanding of the project is based on review of the information provided in your email dated March 1, 2018, which included site plans and details regarding the project. The site is generally located south of West Lukken Industrial Drive and east of Adamson Street in LaGrange, Georgia.

The proposed project includes construction of a new burn building and stair tower for fire fighter training. The building will be a three to four-story steel structure. The stair tower will be a steel frame structure that is several stories high.

The site currently contains a concrete slab in the area of the proposed burn building/stair tower. Portions of the slab will remain in place. We understand that a propane gas storage and fueling facility was previously located on the site. The existing ground surface is relatively level. We assume that minimal cuts and fills will be required to establish planned grades for the new construction.

3.0 METHOD OF EXPLORATION

3.1 Site Reconnaissance and Boring Layout

GEC performed a general review of the proposed project site and surrounding areas prior to the performance of our subsurface exploration activities. The review was performed to evaluate surface conditions that could impact our exploration techniques or the proposed construction.

The locations and depths of the borings were selected by the client based on the site plans provided. Borings were field-located using a hand-held GPS device and coordinates established by overlaying the provided site plan onto internet-based aerial photography. Boring elevations were determined using the topographic information provided. Since the borings were not located by survey, the locations and boring elevations should be considered approximate.

3.2 Soil Test Borings

A total of three (3) soil test borings were performed at the project site. Borings designated B-1 and B-2 were performed in the stair tower and were extended to a depth of 25 feet below the existing ground surface. Borings designated B-3 was performed in the building area. This boring was extended to a depth of 15 feet below the existing ground surface. The approximate locations of the borings are presented on the *Boring Location Plan* located in the Appendix.

All borings were backfilled with the auger cuttings prior to site demobilization. The split-spoon samples were returned to our laboratory and were manually and visually examined and classified. The samples were classified according to the Unified Soil Classification System (USCS). Detailed records of the soil test borings, indicating the N-values (blow counts) obtained from the Standard Penetration Testing (SPT) and a more detailed description of the drilling and sampling processes, are presented in the Appendix.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Site Description

The project site is bounded by Lukken Industrial Drive West to the north, a wooded parcel to the west, McDonald Oil Company to the east, and cleared land followed by wooded areas directly adjacent to the south. The site contains an existing concrete slab in the vicinity of the borings.

4.2 Local Geology

The site is located in the Piedmont Physiographic Province of Georgia. The Piedmont is composed of igneous and metamorphic rocks, most commonly granites, granitic gneiss, and schists. These rocks have undergone extensive alterations, folding and faulting during the mountain building episodes, which produced the Appalachian Mountains and have since experienced a long period of stability. Chemical and physical weathering, have produced the present topography. The depth of weathering can vary greatly. The general Piedmont subsurface profile consists of clayey soils near the surface, which grade into silty sands and sandy silts with depth. Soils beneath the upper clayey zones often retain and exhibit the relic structure (banding, foliation) of the parent rock and are termed saprolite. A zone of weathered rock often separates saprolite from hard relatively un-weathered bedrock. The various rock types resist weathering in different degrees depending on their chemical composition, fracturing, jointing, and bedding, so the depth to bedrock is often quite erratic and can vary over a short distance. Also, it is not unusual to find lenses of partially weathered rock and hard rock boulders within the saprolite. Alluvial, or water deposited, soils are present in association with rivers and streams. These soils consist of interlayered sands, silts and clays with varying amounts of organic materials.

Naturally occurring soils can be covered by fill that resulted from man’s activities during construction, farming, waste disposal, or other ground disturbing activities. Fill materials can be highly variable and can contain debris. The engineering properties of fill depend primarily on composition, moisture content, and density. No density test reports or quality assurance reports were provided for any previous construction at the site. Where density tests or other construction-related testing reports are not provided, fill materials are designated as undocumented.

In drainage swales, floodplains and other low-lying areas, the residual soils may be covered by alluvium that has been transported and deposited by flowing water. Alluvium may differ significantly from the residual soils and vary from fine grained clays and silts to coarse grained sands and gravels depending on how they were deposited. Alluvium frequently is soft or loose and the soils types can change drastically in short horizontal and vertical distances.

4.3 Subsurface Conditions

Details of the subsurface conditions encountered by the soil test borings are shown on the *Soil Boring Records* in the Appendix of this report. These records represent an estimate of the subsurface conditions based on our interpretation of the boring data using normally accepted engineering judgment. Stratification lines on the *Soil Boring Records* represent approximate boundaries between soil types. However, the in-situ transition is typically more gradual. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates shown, they are not necessarily indicative of the subsurface conditions at other locations or at other times. The general soil conditions and their pertinent characteristics are discussed in the following paragraphs.

General Stratigraphy

The general subsurface stratigraphy of the site consisted fill soils underlain by alluvial materials extending to the maximum depths explored.

Fill Soils

Fill materials were encountered from the ground surface or below a surficial layer of gravel in all borings. The fill soils generally consisted of firm to stiff sandy silts (ML) with various amounts of mica and organic contents. The standard penetration test (SPT) N-values in these soils ranged from 6 to 12 blows per foot (bpf).

Alluvium

Alluvial materials consistent with the creek neighboring the west border of the site were encountered at all boring locations below the fill soils. The alluvial soils consisted of very soft sandy silts (ML) and loose to medium dense silty sands (SM) with various amounts of mica and organic contents. SPT blow counts (N-values) in the alluvium ranged from 0 (weight of hammer) to 21 blows per foot (bpf) but were generally between 2 to 7 bpf.

Groundwater

Groundwater was encountered at a depth of 6 feet in all three borings. Groundwater levels may be expected to fluctuate with changes in temperature, rainfall and other seasonal factors, and may at other times differ from those reported herein.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Site and Subgrade Preparation

The initial step in site preparation should consist of the removal of any debris, slabs, topsoil, trees, vegetation and root systems, and any soft/loose near-surface soils in the planned construction areas. Any utility lines in the project area should be removed and relocated. Excavations or holes resulting from the removal of trees or utilities should be backfilled with structural fill to the compaction requirements presented in Section 5.2, *Earthwork*. All topsoil should be stripped from construction areas.

Care should be taken with near-surface soils containing fine-grained particles (silts and clays) during grading. When exposed to moisture, the workability and strength of these near-surface soils deteriorates significantly, and the need for undercutting and other construction delays may result. We recommend that construction grades be maintained throughout this project in such a manner so to establish positive drainage away from working surfaces and subgrades.

Following site stripping, we recommend that all proposed fill areas or areas at-grade be proofrolled in the presence of a geotechnical engineer or his representative to evaluate subgrade stability. Proofrolling should be performed with a fully loaded tri-axle dump truck, 20-ton roller, or similar equipment in an overlapping pattern to detect any soft or loose areas. Any areas that pump or rut excessively and cannot be densified by continued rolling should be undercut to a depth to be determined in the field by the geotechnical engineer, and be replaced with structural fill.

The fine grained soils encountered in the borings will be sensitive to disturbance from construction activity and water seepage. If precipitation occurs prior to or during construction, the near-surface soils could increase in moisture content and become more susceptible to disturbance. Construction activity should be monitored, and should be curtailed if the construction activity is causing subgrade disturbance. A geotechnical engineering representative can help with monitoring and developing recommendations to aid in limiting subgrade disturbance.

Relatively loose/soft soils were encountered the surface in borings at depths ranging from 5 to 10 feet. Also, organic-laden fill was encountered. In general, if loose/soft or organic-laden soils are encountered in structural areas, the soils may need to be reworked or undercut to a point 10 feet outside the perimeter of the structural areas. The extent of the reworking necessary will depend on the final grading plans and the climatic conditions at the time of construction. All undercut areas should be backfilled with structural fill as described in Section 5.2, Earthwork, of this report.

Prior to fill placement, the subgrade should be scarified, moisture-conditioned to slightly above the optimum moisture content, and compacted to at least 95 percent of the standard Proctor maximum dry density (ASTM D698) in all structural or paved areas. All at-grade areas and cut surfaces should be scarified, moisture conditioned to slightly above the optimum moisture content, and compacted to at least 98 percent of the same criteria.

5.2 Earthwork

The soil test borings indicate the near-surface soils at the site can be graded with conventional earthmoving equipment such as self-loading or pusher-assisted pans and tracked dozers. The near-surface soils to a depth of about five feet appear to be suitable for use as fill material, with the exception of the high-plasticity silt (MH) soils encountered in B-2 and the organic-laden fill material encountered in the borings. The contractor should be required to have equipment available on site for both wetting and drying of the soils during construction. Any off site borrow soils should be evaluated and approved for suitability prior to delivery to the project site.

In general, all fill placed at the site, including on-site soils, should not contain rocks or lumps larger than four (4) inches in greatest dimension and contain no more than 15 percent larger than 2.5 inches. Structural fill soils should have a liquid limit less than 50, plastic index less than 30 and a standard Proctor maximum dry density (ASTM D698) greater than 90 pcf. Generally, soils classified as SP, SM, SC, ML or CL according to the Unified Soil Classification System are considered suitable for fill providing they meet the above criteria.

Structural fill should be moisture-conditioned to slightly above the optimum moisture content, spread in relatively thin lifts (8-inch maximum loose lifts) and methodically compacted with heavy compaction equipment to at least 95 percent of the standard Proctor maximum dry density (ASTM D698). The upper one-foot of fill material should be compacted to a 98 percent compaction criterion. Additionally, the upper one-foot of material in areas at-grade or cut surfaces should be scarified and compacted to the 98 percent criteria. Structural fill criteria should be utilized beneath proposed and future structural areas. Due to the silty nature of the on-site soils, we recommend that the moisture content of the fill soils be maintained within 3% of the optimum moisture content during compaction. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without pumping when proofrolled.

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of floor slabs and pavements. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared building and pavement subgrades or in excavations. Any accumulated surface water should be removed as promptly as possible. If the subgrade should become frozen, desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted prior to floor slab and pavement construction. As noted previously some of the fine-grained soils at this site will be susceptible to degradation from weather and construction activities. Therefore, some remediation of exposed subgrade should be expected.

Structural fill should extend horizontally beyond the outer edge of the building foundations at least ten feet or a distance equal to the height of the fill to be placed, whichever is greater. In paved areas, fill slopes should extend horizontally at least five feet beyond the edge of pavement prior to sloping.

Utility trenches should be backfilled with materials satisfying the criteria described above for general fill, placed in lifts of approximately eight (8) inches in uncompacted thickness. However, thicker lifts may be used provided the method of compaction is approved by the project geotechnical engineer and the required minimum degree of compaction is achieved.

5.3 Burn Building Foundations

The proposed burn building can be constructed on conventional shallow foundations bearing on the in-place soils, reworked soils, or structural fill meeting the compaction requirements of Section 5.2, *Earthwork*. Based on the soils encountered during our exploration, we recommend a uniform net allowable soil bearing pressure of 1,500 psf be used for shallow foundation design of the proposed building foundations. Exterior foundations should bear at a minimum of 18 inches below external grades to preclude damage due to frost penetration.

Using assumed structural loads, we estimate that total post-construction settlement of up to one (1) inch will occur. Differential settlement should be approximately 50% of the total settlement over a distance of 30 feet. Individual spread footings should have a minimum dimension of 24 inches and strip footings should have a minimum lateral dimension of 20 inches.

A Geotechnical Engineer or his representative should examine footing subgrades immediately prior to rebar placement to confirm that the foundation conditions are as anticipated and the design bearing pressure is available. Auger and hand-held dynamic cone penetrometer testing, augmented by hand probing, should be used to determine whether conditions within these areas are consistent with those encountered by the borings.

5.4 Stair Tower Foundations

We understand that the stair tower will likely be supported by auger-drilled and cast-in-place reinforced concrete straight-sided shaft foundations (drilled shafts) or by helical piles. The following paragraphs provide guideline recommendations for these foundation systems.

For the drilled shafts, axial loading will generally be resisted by skin friction and some end bearing. For shafts bearing at a depth of about 25 feet, we recommend utilizing an allowable end bearing pressure of 2,000 pounds per square foot (psf). Skin friction within the top 12 feet of the shaft should be neglected.

Lateral capacity will likely control the design of the drilled shafts. The straight-sided shafts should be designed so that angular rotation and deflection at the tops of the shafts are maintained within structurally tolerable limits. We recommend that the response of the shafts to applied moment and lateral loading be analyzed utilizing the method developed by Dr. Lymon C. Reese of the University of Texas or a similar analysis procedure. Computer programs (e.g., LPILE) are available for this method of analysis.

Detailed recommendations for soil parameters used in design are listed in the table below. These values represent parameters for undisturbed materials. The following parameters are explicitly for use in the LPILE program and should not be used or translated for any other program or analysis. The following are soil parameters used in analysis of the proposed pile system for each of the borings:

RECOMMENDED SOIL PARAMETERS FOR LPILE ANALYSIS

Boring Number	Depth (ft)*	LPILE Soil Type	Unit Weight (pcf)	Friction Angle (deg.)	Cohesion (psf)	Subgrade Modulus k value (pci)	ε_{50}
B-1	0 – 12	Neglect	100	--	--	--	--
	12 - 25	Sand	100	29	--	8	--
B-2	0 – 12	Neglect	100	--	--	--	--
	12 – 25	Sand	100	29	--	7	--

*Measured from existing ground level

These parameters correspond to the conditions for each of the borings. The above values should be considered to be conservative values for use in the general vicinity of the respective boring locations. However, the soil parameters above do not include factors of safety.

Helical piles may also be used to support the proposed stair tower. Helical pile systems are typically installed by design-build contractors who will provide sealed construction drawings based on geotechnical and structural information provided by others. The critical aspect of helical pile installation is achieving the design torque required to install each pile, which correlates to the capacity for a given pile type and size as determined by the pile manufacturer. Minimum embedment depths should also be anticipated based on the subsurface information. In general, helical pile systems can be designed to achieve total settlement on the order of 1 inch or less and differential settlement on the order of ½ inch or less.

We recommend that you contact helical pile contractors to review and analyze the subsurface data in this report, as well as the proposed structural loads for the project, and to obtain a cost estimate for helical pile installation. We also recommend that the helical pile installation be monitored full time by the Owner's geotechnical consultant. The QC program should include observation of pile spacing, pile types installed, embedment depths and torque achieved upon installation.

5.5 Ground Floor Slab Recommendations

A concrete slab-on-grade floor system bearing on the in-place soils or structural fill may be utilized for the building. Assuming that the upper 12 inches of subgrade consist of properly compacted and proofrolled existing soil or newly installed fill material compacted to a minimum of 98% of standard Proctor maximum dry density, a modulus of subgrade reaction of 100 pci may be used for design of concrete slab-on-grade floors subject to minor interior loads.

Grade supported slabs should be jointed around columns and along footing supported walls to minimize cracking due to differential movement. Provided surface grades direct water away from the building, a below-slab drainage system is not required. However, we recommend that ground floor slabs be underlain by an effective vapor barrier to reduce moisture vapor transmission and a layer of at least 4 inches of crushed stone to protect the subgrade prior concrete placement and provide a capillary break to limit moisture migration. Note that a vapor barrier may create differences in curing conditions so that measures to reduce potential slab curl should be specified.

5.6 Drainage Considerations

Based on the boring data, special groundwater control measures may be required during construction. Fluctuation of groundwater levels should be anticipated. We recommend that the Contractor determine the actual groundwater levels at the time of construction to determine groundwater impact on the construction procedures.

Water should not be allowed to collect in the foundation excavations, on the floor slab areas, or on prepared subgrade of the construction area either during or after construction. The subgrade beneath structures should be sloped to a low point to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage (i.e. sloping grade) should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slab area of the building.

5.7 Seismic Design Criteria

The seismic site classification for the proposed project was evaluated using the criteria given in the 2012 International Building Code (IBC 2012). Based on the project information and soil test borings, it is our opinion that the subsurface conditions within the site are consistent with the characteristics of Site Class “E”. The associated USGS-NEHRP probabilistic ground motion values for the general site area were obtained from the USGS geohazards web page and are presented in the table below:

Period (sec)	Mapped MCE Spectral Response Acceleration (g)		Site Coefficients		Adjusted MCE Spectral Response Acceleration (g)		Design Spectral Response Acceleration (g)	
0.2	S_s	0.149	F_a	1.600	S_{Ms}	0.371	S_{Ds}	0.248
1.0	S_1	0.080	F_v	2.400	S_{M1}	0.281	S_{D1}	0.187

The Site Coefficients, Fa and Fv presented in the above table were also obtained from the noted USGS web page, as a function of the site classification and mapped spectral response acceleration at the short (SS) and 1-second (S1) periods, but can also be interpolated from IBC Tables 1613.3.3(1) and 1613.3.3(2).

For Seismic Design Category designations of C, D, E or F, which are contingent on the structure "Occupancy Category", the code also requires an assessment of slope stability and surface rupture due to faulting or lateral spreading. Detailed evaluations of these factors were beyond the scope of this study. However, the table below presents a qualitative assessment of these issues considering the site class, the subsurface soil properties, the groundwater elevation and probabilistic ground motions:

Hazard	Relative Risk	Comments
Liquefaction	Low	The subsurface silty sand materials typically contain sufficient fines to limit the potential for liquefaction.
Slope Stability	Low	The probabilistic ground accelerations are low and site grades are relatively flat.
Surface Rupture	Low	No active faults underlie the site.

5.8 Geotechnical Controls

1. The Geotechnical Engineer should be provided the opportunity for a general review of the final design documents in order to assess proper interpretation of the earthwork and foundation recommendations.

2. The Geotechnical Engineer, or his qualified representative, should observe undercutting and proofrolling operations.

3. A qualified engineering technician, under the supervision of the Geotechnical Engineer, should observe fill operations and perform a minimum of one field density test per 2,500 square feet of area for each one-foot thickness of fill.

4. The Geotechnical Engineer, or his qualified representative, should check each foundation excavation utilizing hand probing and auger and dynamic cone penetrometer testing. This will reduce the risk of unsuitable or soft materials directly underlying the footings, which may be detrimental to the integrity of the structures.

5.9 Limitations

This report is for the exclusive use of Smith Design Group, Inc., the engineers, owners, and subcontractors for the project described herein, and may only be applied to this specific project. The analyses, conclusions and recommendations presented in this report are based on the preceding project information, and the results of this evaluation. Conditions may vary from those observed in the borings.

If it becomes apparent during construction that soil conditions differing from those discussed in this report are encountered, Geotechnical and Environmental Consultants, Inc. should be notified at once so that the effects may be determined and any remedial measures necessary may be prescribed.

This report has been prepared in accordance with generally accepted standards of geotechnical engineering practice in the State of Georgia. No other warranty is expressed or implied. Our firm is not responsible for conclusions, opinions or recommendations of others.

The right to rely upon this report and the data within may not be assigned without the written permission of Geotechnical and Environmental Consultants, Inc. If the design or location of the structure is changed, the recommendations contained herein must be considered invalid, unless our firm reviews changes and our recommendations are either verified or modified in writing. When design is complete, we should be given the opportunity to review the foundation plans, grading plans and applicable portions of the specifications to determine if they are consistent with the intent of our recommendations.

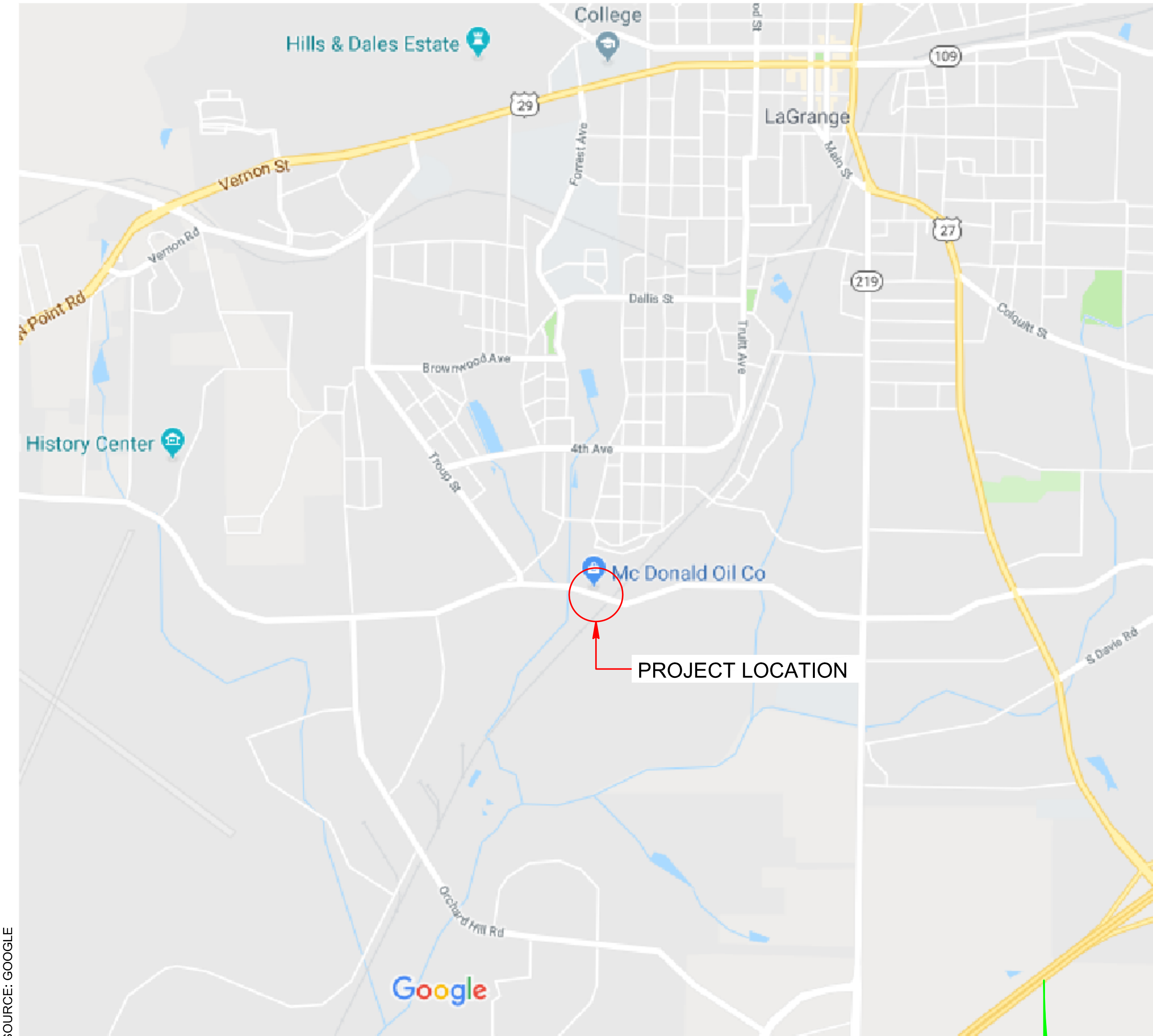
Appendices

Appendix A

Site Location Map

Boring Location Plan with Preliminary Site Plan

Boring Location Plan with Aerial Photograph



0 0.25 0.5 1 MILE 1.5 MILE 2 MILES

SCALE: 1" = 0.5 MILE

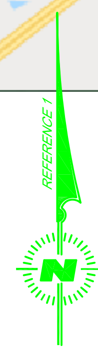


FIGURE 1: SITE LOCATION MAP
SUBSURFACE EVALUATION
BURN BUILDING & STAIR TOWER
LUKKEN INDUSTRIAL DRIVE WEST
LAGRANGE, GEORGIA
GEC PROJECT NO. 180148.310

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SOURCE: GOOGLE; SMITH DESIGN GROUP

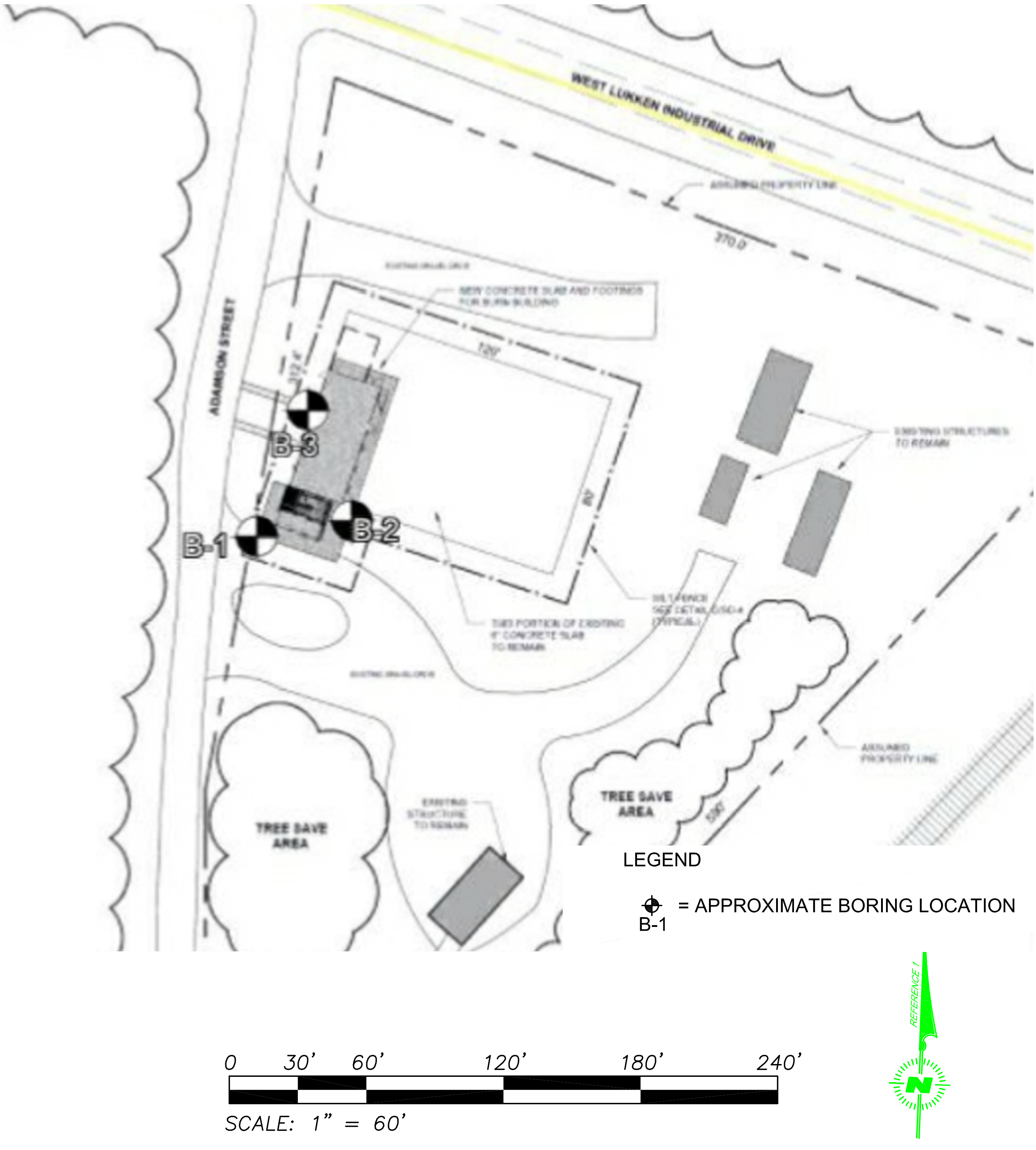

FIGURE 2A: BORING LOCATION PLAN
WITH PROPOSED SITE PLAN
BURN BUILDING & STAIR TOWER
LUKKEN INDUSTRIAL DRIVE WEST
LAGRANGE, GEORGIA
GEC PROJECT NO. 180148.310

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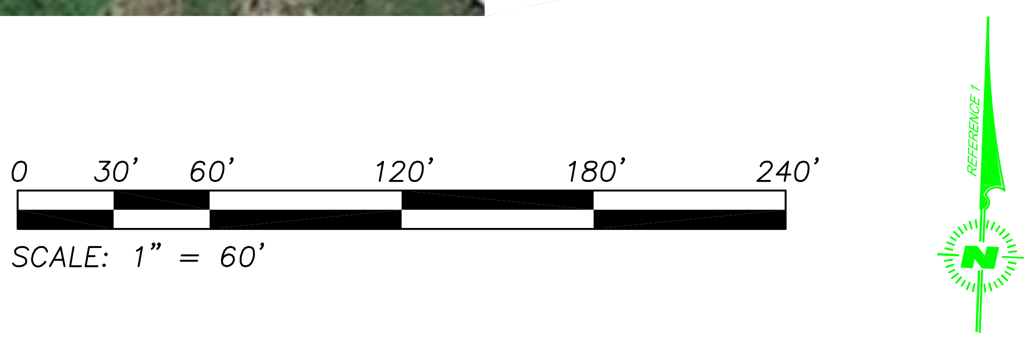

FIGURE 2B: BORING LOCATION PLAN
WITH AERIAL PHOTOGRAPH
BURN BUILDING & STAIR TOWER
LUKKEN INDUSTRIAL DRIVE WEST
LAGRANGE, GEORGIA
GEC PROJECT NO. 180148.310

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Appendix B

Soil Classification Legend

Soiltest Boring Records

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

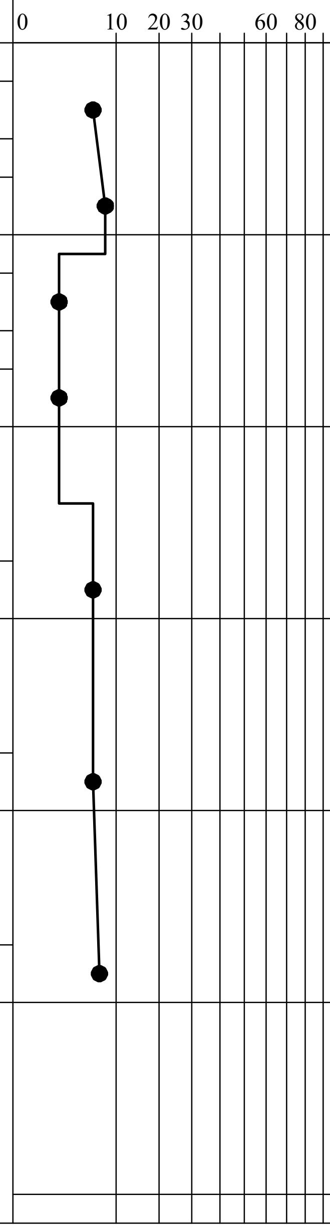
NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOIL BORING RECORD

Project: **Burn Building & Stair Tower** LaGrange, Georgia	Boring No: **B-1** Project No: 180148.310
Location: **See Figure 2**	GS Elevation:
Driller/Equipment: JC/ GEC: CME 45; 2.25" HSA; AUTO HAMMER	Drilling Date: March 10, 2018
Water Level: 6.0 ft at time of boring	Engineer/Geologist:

Water Level (ft)	Depth (ft)	Soil Description	Sample Type	Blows
	0–3	**FILL** firm, brown, clayey, fine to medium sandy **SILT (ML)**; with organics	SS-1	6
	3–5.5	firm, dark brown, fine to coarse sandy **SILT (ML)**	SS-2	8
▽ (6.0)	5.5–12	**ALLUVIUM** very soft, dark grey, clayey, fine sandy **SILT (ML)**; with organics	SS-3	2
			SS-4	2
	12–25	loose, bluish-green, silty, fine **SAND (SM)**; trace mica	SS-5	6
			SS-6	6
			SS-7	7
	25	**BORING TERMINATED AT 25.0ft**		

Standard Penetration Test Data (blows/ft)



· Boring and sampling performed in accordance with ASTM D 1586.
· Depths are measured from existing ground surface at time of drilling.
· Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
· Do not use depths for determinations of quantities or distances.

NOTES:

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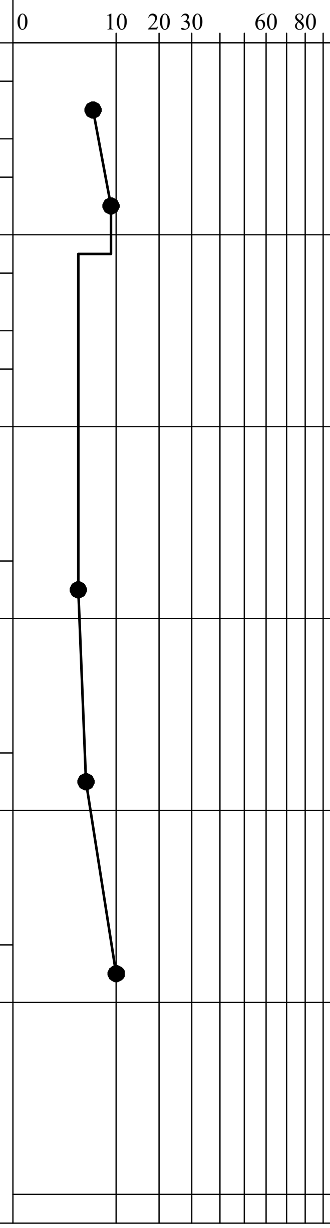
SOIL BORING RECORD

Project: **Burn Building & Stair Tower** LaGrange, Georgia	Boring No: **B-2** Project No: 180148.310
Location: **See Figure 2**	GS Elevation:
Driller/Equipment: JC/ GEC: CME 45; 2.25" HSA; AUTO HAMMER	Drilling Date: March 10, 2018
Water Level: 6.0 ft at time of boring	Engineer/Geologist:

Water Level (ft)	Depth (ft)	Soil Description	Sample Type	Blows
	0	**FILL**		
		Gravel (10 inches)		
		firm to stiff, reddish orange, slightly clayey, fine to medium sandy **SILT (ML)**	SS-1	6
	5		SS-2	9
∇ (6.0)		**ALLUVIUM**		
		very soft, dark grey, clayey, fine to medium sandy **SILT (MH)**	SS-3	WOH*
	10		SS-4	WOH*
		loose, bluish-green, micaceous, fine silty **SAND (SM)**		
	15		SS-5	4
	20		SS-6	5
	25		SS-7	10
		BORING TERMINATED AT 25.0ft		
	30			

Standard Penetration Test Data (blows/ft)



· Boring and sampling performed in accordance with ASTM D 1586.
· Depths are measured from existing ground surface at time of drilling.
· Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
· Do not use depths for determinations of quantities or distances.

NOTES:
*WOH: Weight of Hammer, soils that are too soft or too loose to record a SPT value

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SOIL BORING RECORD

Project: **Burn Building & Stair Tower** LaGrange, Georgia	Boring No: **B-3** Project No: 180148.310
Location: **See Figure 2**	GS Elevation:
Driller/Equipment: JC/ GEC: CME 45; 2.25" HSA; AUTO HAMMER	Drilling Date: March 10, 2018
Water Level: 6.0 ft at time of boring	Engineer/Geologist:

Water Level (ft)	Depth (ft)	Soil Symbol	Soil Description	Sample Type	Standard Penetration Test Data (blows/ft) 0 10 20 30 60 80	Blows
	0–5.5		**FILL** firm to stiff, brown, fine to medium sandy **SILT (ML)**; trace organics	SS-1		8
				SS-2		12
▽ (6.0)	5.5–12		**ALLUVIUM** very soft, dark grey, fine to medium sandy **SILT (ML)**; trace organics	SS-3		WOH*
				SS-4		2
	12–15		medium dense, brownish yellow, silty, fine to medium **SAND (SM)**	SS-5		21
	15		**BORING TERMINATED AT 15.0ft**			

- Boring and sampling performed in accordance with ASTM D 1586.
- Depths are measured from existing ground surface at time of drilling.
- Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
- Do not use depths for determinations of quantities or distances.

NOTES:
*WOH: Weight of Hammer, soils that are too soft or too loose to record a SPT value

GEOTECH BURN BUILDING BORING LOGS.GPJ GEC.GDT 3/20/18

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Appendix C

Seismic Site Classification

USGS Design Maps Summary Report

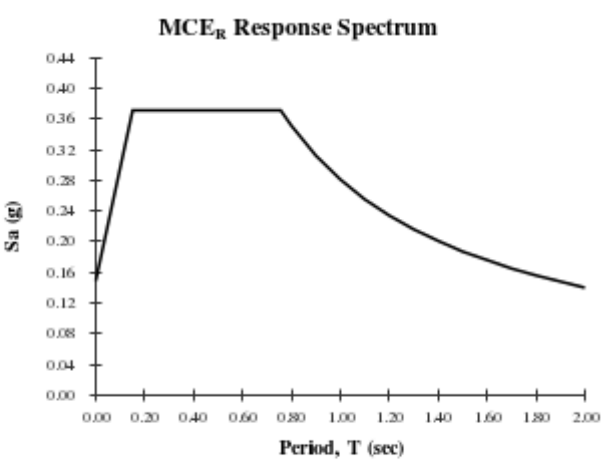
User–Specified Input

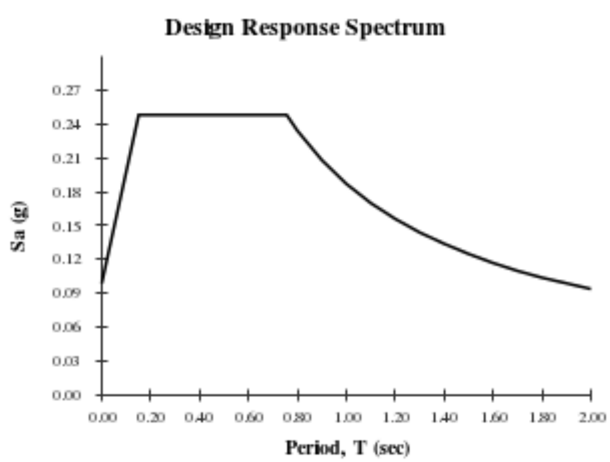
Report Title	Burn Building & Stair Tower Thu March 22, 2018 13:06:52 UTC
Building Code Reference Document	2012/2015 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.01344°N, 85.04474°W
Site Soil Classification	Site Class E – "Soft Clay Soil"
Risk Category	I/II/III

USGS–Provided Output

S_S =	0.149 g	S_{MS} =	0.371 g	S_{DS} =	0.248 g
S_1 =	0.080 g	S_{M1} =	0.281 g	S_{D1} =	0.187 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





Design Maps Detailed Report

2012/2015 International Building Code (33.01344°N, 85.04474°W)

Site Class E – "Soft Clay Soil", Risk Category I/II/III

Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_S) and 1.3 (to obtain S_1). Maps in the 2012/2015 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

From Figure 1613.3.1(1) [1] S_S = 0.149 g

From Figure 1613.3.1(2) [2] S_1 = 0.080 g

Section 1613.3.2 — Site class definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class E, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard – Table 20.3-1
SITE CLASS DEFINITIONS

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index PI > 20, • Moisture content w ≥ 40%, and • Undrained shear strength $\bar{s}_u$ < 500 psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F_a

Site Class	Mapped Spectral Response Acceleration at Short Period				
	$S_S \le 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \ge 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_S

For Site Class = E and S_S = 0.149 g, F_a = 2.500

TABLE 1613.3.3(2)
VALUES OF SITE COEFFICIENT F_v

Site Class	Mapped Spectral Response Acceleration at 1–s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_1

For Site Class = E and S_1 = 0.080 g, F_v = 3.500

Equation (16-37): $S_{MS} = F_aS_S = 2.500 \times 0.149 = 0.371$ g

---

Equation (16-38): $S_{M1} = F_vS_1 = 3.500 \times 0.080 = 0.281$ g

---

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39): $S_{DS} = ⅔\, S_{MS} = ⅔ \times 0.371 = 0.248$ g

---

Equation (16-40): $S_{D1} = ⅔\, S_{M1} = ⅔ \times 0.281 = 0.187$ g

---

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \le S_{DS} < 0.33g$	B	B	C
$0.33g \le S_{DS} < 0.50g$	C	C	D
$0.50g \le S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.248 g, Seismic Design Category = B

TABLE 1613.3.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \le S_{D1} < 0.133g$	B	B	C
$0.133g \le S_{D1} < 0.20g$	C	C	D
$0.20g \le S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.187 g, Seismic Design Category = C

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = C

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 1613.3.1(1)*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
2. *Figure 1613.3.1(2)*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf

Appendix D

Field and Laboratory Testing Procedures

LABORATORY TESTING PROCEDURES

SOIL CLASSIFICATION

Soil classifications provide a general guide to the engineering properties of various soil types and enable the engineer to apply his past experience to current problems. In our investigations, samples obtained during drilling operations are examined in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our "Log of Boring" records.

The classification system discussed above is primarily qualitative and for detailed soil classification two laboratory tests are necessary: grain size tests and atterberg limits tests. Using these test results, the soil can be classified according to the AASHTO or Unified Classification Systems (ASTM D-2487). Each of these classification systems and the in-place physical soil properties provides and index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in this report.

GRAIN SIZE TESTS

Grain Size Tests are performed to aid in determining the soil classification and the grain size distribution. The soil samples are prepared for testing according to ASTM D-421 (dry preparation) or ASTM D-2217 (wet preparation). If only the grain size distribution of soils coarser than a number 200 sieve (0.074 mm opening) is desired, the grain size distribution is determined by washing the sample over a #200 sieve and after drying, passing the samples through a standard set of nested sieves. If the grain size distribution of the soils finer than the #200 sieve is also desired, the grain size distribution of the soils coarser than the #10 sieve is determined by passing the sample through a set of nested sieves. Materials passing the #10 sieve are dispersed with a dispersing agent and suspended in water and the grain size distribution calculated from the measured settlement rate of the particles. The tests are conducted in accordance with ASTM D-422.

ATTERBERG LIMITS

Atterberg Limits tests are accomplished to further classify soils and to obtain data on soil properties. These tests are used to measure the moisture content of the upper and lower limits of the range in which the soil is in the plastic state. The moisture content at the upper limit is known as the liquid limit and the moisture content of the lower limit is designated as the plastic limit. The numerical difference between the liquid limit and plastic limit, termed the plasticity index, is a measure of the soil plasticity. Liquidity index is the ratio of the difference between natural moisture content and the plastic limit to the plasticity index. ASTM method D-4318 is used in determining Atterberg Limits.

GENERAL NOTES

The "standard" penetration resistance is an indication of the density of cohesionless soils and of the strength of cohesive soils. The "standard" penetration test is measured with a 1.4 inch I.D., 2 inch O.D., sampler driven one (1) foot with a 140 pound hammer falling 30 inches.

RELATIVE DENSITY OF SOIL THAT IS PRIMARILY SAND

Number of Blows	Relative Density
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
Over 50	Very Dense

CONSISTENCY OF SOIL THAT IS PRIMARILY SILT OR CLAY

Number of Blows	Consistency
0-2	Very Soft
3-4	Soft
5-8	Firm
9-15	Stiff
16-30	Very Stiff
Over 30	Hard

While individual test boring records are considered to be representative of subsurface conditions at the respective boring locations on the dates shown, it is not warranted that they are representative of subsurface conditions at other locations and times.

The soil classifications noted on the boring logs are visual classifications unless otherwise noted. Minor constituents of a soil sample are termed as follows:

Term	Percentage
Trace	0-10%
Some	11-30%
And	36-50%

If the silt content is sufficient so that silt dominates all soil properties, then silt becomes the principal noun with other soil constituents as modifiers: i.e., micaceous silt. Other minor soil constituents may be added to further define the classification: i.e., micaceous silt, trace sand.

FIELD TESTING PROCEDURES

INTRODUCTION

The general field procedures employed by Geotechnical & Environmental Consultants, Inc (GEC) are summarized in ASTM Specification D-420 which is entitled "Investigating and Sampling Soils and Rocks for Engineering Purposes." This recommended practice lists recognized methods for determining soil and rock distribution and ground water conditions. These methods include geophysical and in-situ methods as well as borings.

The test borings are made by mechanically advancing helical hollow stem augers into the ground. Samples are recovered at regular intervals in each of the borings following established procedures for performing the Standard Penetration Test, in accordance with ASTM Specification D-1586.

This drilling method is not capable of penetrating materials designated as "refusal materials." Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams, or the upper surface of sound continuous rock. Core boring procedures are required to determine the character and continuity of refusal materials.

The subsurface conditions encountered during drilling are reported on a field test boring record by a GEC representative. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as coarse gravel, cobbles, etc., and observations between samples. Therefore, these boring records contain both factual and interpretive information. The field boring records are on file in our office.

The soil and rock samples plus the field boring records are reviewed by a geotechnical engineer. The engineer describes the soils in general accordance with the procedures outlined in ASTM Specification D-2488 and prepares the final boring records which are basis for all evaluations and recommendations.

The final boring records represent our interpretation of the contents of the field records based on the results of the engineering examinations and testing of selected field samples. These records depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in changes in the ground water conditions at these boring locations. The lines designating the interface between strata on the records and on profiles represent approximate boundaries. The transition between materials may be gradual. The final boring records are included with this report.

The detailed data collection methods used during this study are discussed on the following pages.

WATER LEVEL READINGS

Water table readings are *normally* taken in conjunction with borings and are recorded on the "Boring Records". These readings indicate the approximate location of the hydrostatic water table at the time of our field exploration. Where relatively impervious soils (clayey soils) are encountered, the amount of water seepage into the boring is small, and it is generally not possible to establish the location of the hydrostatic water table through water level readings. The ground water table may also be dependent upon the amount of precipitation at the site during a particular period of time. Fluctuations in the water table should be expected with variations in precipitation, surface run-off, evaporation and other factors.

The time of boring (TOB) water level reported on the boring records is determined by field crews immediately after drilling. Additional water table readings are generally obtained at least 24 hours after the borings are completed. The time lag of at least 24 hours is used to permit stabilization of the ground water table which has been disrupted by the drilling operations. The readings are taken by dropping a weighted line down the boring or using an electrical probe to detect the water level surface.

Occasionally, the borings will cave-in, preventing water level readings from being obtained or trapping drilling water above the caved-in zone. The cave-in depth is also measured and recorded on the boring records.

PENETRATION TESTING AND SPLIT BARREL SAMPLING

Probe borings do not normally provide adequate information on the type, strength and compressibility of the subsurface soils. Therefore, standard penetration tests and split barrel sampling are normally conducted in the borings. The standard penetration test, when properly evaluated, provides an indication of the soil strength and compressibility.

The standard penetration test and split barrel sampling are conducted simultaneously using ASTM Designation D-1586 as a guide. At regular intervals, soil samples are obtained with a standard 1.4" I.D. X 2.0" O.D. barrel sampler inside the hollow stem auger. The sampler is first seated six inches to penetrate any loose cuttings, then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sample each six-inch interval is recorded. The number of blows to drive the sampler the final foot is designated the "penetration resistance." This driving resistance, known as the "N" value, is a measure of the relative density of granular soils and is an indication of the consistency of cohesive deposits. A table which correlates consistency and blow count is bound into this report (see General Notes). Representative portions of the soil samples obtained from each split barrel sample are placed in air tight containers and transported to our laboratory.

Descriptions of the split barrel samples and the penetration resistances are shown on the "Boring Records."

NATURAL MOISTURE CONTENT

Soil samples obtained using the *Split Barrel Sampler* are sealed in airtight containers and returned to our laboratory where natural moisture content determinations were made. Natural moisture content is a useful index of a soil's compressibility. It is also useful in relating in-situ moisture to optimum moisture during in-place density testing of the fill if required. These moisture contents may be found at the appropriate depths on the respective boring logs and are denoted by "W".

RUNCON

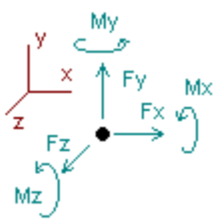
STRUCTURAL ENGINEERS

Runkle Consulting, Inc

Current Date: 2/28/2018 4:56 PM
Units system: English
File name: C:\Users\0\Google Drive\Company Drive\2018 Project\Burn Building\Stair Tower\stair tower4.etz\
Company Address: Grayson, GA USA

Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **DL=Dead Load**						
175	0.03076	8.23942	0.03930	0.00000	-0.24533	0.00000
188	-0.00307	3.25849	0.00137	0.00000	0.00000	0.00000
189	-0.01409	8.15987	0.00715	0.00000	0.00000	0.00000
194	-0.03958	6.81327	0.08394	0.00000	0.00000	0.00000
195	-0.01784	6.00657	-0.06215	0.00000	0.00000	0.00000
196	0.01179	5.60066	0.00248	0.00000	0.00000	0.00000
197	-0.00085	6.49930	0.00367	0.00000	0.00000	0.00000
198	0.01248	5.91617	-0.03799	0.00000	0.00000	0.00000
203	0.00312	3.73363	-0.02881	0.00000	0.00000	0.00000
204	0.03905	4.33308	0.00262	0.00000	0.00000	0.00000
205	-0.02460	6.35836	-0.00247	0.00000	0.00000	0.00000
206	0.00284	5.94147	-0.00901	0.00000	0.00000	0.00000
SUM	0.00000	70.86028	0.00011	0.00000	-0.24533	0.00000
Condition **LL=Live Load**						
175	0.08306	15.60192	0.17582	0.00000	-0.64388	0.00000
188	-0.01127	7.68191	-0.00808	0.00000	0.00000	0.00000
189	-0.04071	11.90846	-0.01839	0.00000	0.00000	0.00000
194	-0.11838	13.96821	0.34053	0.00000	0.00000	0.00000
195	-0.05774	14.58978	-0.26783	0.00000	0.00000	0.00000
196	0.04565	11.03830	-0.04741	0.00000	0.00000	0.00000
197	0.00975	7.05661	0.00230	0.00000	0.00000	0.00000
198	0.01865	13.61650	-0.16651	0.00000	0.00000	0.00000
203	0.00659	3.72048	-0.02557	0.00000	0.00000	0.00000
204	0.03174	0.36645	0.00314	0.00000	0.00000	0.00000
205	0.02674	1.34543	-0.00293	0.00000	0.00000	0.00000
206	0.00593	2.10126	0.01495	0.00000	0.00000	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
SUM	0.00000	102.99531	0.00000	0.00000	-0.64388	0.00000
Condition **Wx=Wind in X**						
175	-1.89647	-18.49417	-0.22781	0.00000	-12.08444	0.00000
188	-0.15633	14.48153	0.26335	0.00000	0.00000	0.00000
189	-2.60192	9.04316	0.82318	0.00000	0.00000	0.00000
194	-3.70899	6.93018	-0.11919	0.00000	0.00000	0.00000
195	-8.19328	30.02186	-0.48355	0.00000	0.00000	0.00000
196	-1.00426	-13.99936	-0.30854	0.00000	0.00000	0.00000
197	-0.44716	-3.62921	-0.05037	0.00000	0.00000	0.00000
198	-1.33176	-23.53839	0.13521	0.00000	0.00000	0.00000
203	-0.62583	8.11539	-0.42107	0.00000	0.00000	0.00000
204	-2.70047	-8.17737	-0.00725	0.00000	0.00000	0.00000
205	-2.18239	-13.96153	0.00267	0.00000	0.00000	0.00000
206	-0.16210	13.20790	0.39338	0.00000	0.00000	0.00000
SUM	-25.01095	0.00000	0.00000	0.00000	-12.08444	0.00000
Condition **Wz=Wind in Z**						
175	0.71663	32.45713	2.56004	0.00000	-25.16692	0.00000
188	0.11171	-6.06182	3.26490	0.00000	0.00000	0.00000
189	-0.10957	190.15617	8.74863	0.00000	0.00000	0.00000
194	2.21640	16.92098	6.79387	0.00000	0.00000	0.00000
195	-0.59049	-25.15101	5.07459	0.00000	0.00000	0.00000
196	-0.18017	170.29128	9.62448	0.00000	0.00000	0.00000
197	0.05819	0.97797	1.75629	0.00000	0.00000	0.00000
198	-0.47134	3.99991	1.97790	0.00000	0.00000	0.00000
203	-0.18844	-170.83749	13.68042	0.00000	0.00000	0.00000
204	-1.05632	0.00409	1.02210	0.00000	0.00000	0.00000
205	-0.28717	-50.40715	2.57331	0.00000	0.00000	0.00000
206	-0.17013	-147.38076	16.16727	0.00000	0.00000	0.00000
SUM	0.04930	14.96930	73.24380	0.00000	-25.16692	0.00000
Condition **EQx=Seismic in X**						
175	0.48907	5.23976	0.04174	0.00000	11.25333	0.00000
188	0.03703	4.77018	0.14099	0.00000	0.00000	0.00000
189	0.45544	7.74729	0.43640	0.00000	0.00000	0.00000
194	0.84622	2.21648	0.12326	0.00000	0.00000	0.00000
195	1.42029	6.58213	0.12079	0.00000	0.00000	0.00000
196	0.10358	4.72714	0.33763	0.00000	0.00000	0.00000
197	0.03122	1.53996	0.06161	0.00000	0.00000	0.00000
198	0.21569	5.21163	0.06449	0.00000	0.00000	0.00000
203	0.03648	4.78800	0.39890	0.00000	0.00000	0.00000
204	0.54317	1.70286	0.01889	0.00000	0.00000	0.00000
205	0.42074	6.10562	0.05170	0.00000	0.00000	0.00000
206	0.03354	3.52418	0.54202	0.00000	0.00000	0.00000
SUM	4.63245	54.15522	2.33842	0.00000	11.25333	0.00000
Condition **EQz=Seismic in Z**						
175	0.01961	2.44161	0.20687	0.00000	4.63530	0.00000
188	0.00822	1.01939	0.18358	0.00000	0.00000	0.00000
189	0.16105	12.09610	0.54352	0.00000	0.00000	0.00000
194	0.14869	1.10581	0.49306	0.00000	0.00000	0.00000
195	0.49016	4.61854	0.34414	0.00000	0.00000	0.00000
196	0.03092	16.32784	0.85570	0.00000	0.00000	0.00000
197	0.00154	0.70593	0.14429	0.00000	0.00000	0.00000
198	0.06273	2.62225	0.14852	0.00000	0.00000	0.00000
203	0.01510	16.89524	1.07860	0.00000	0.00000	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **EQz=Seismic in Z**						
204	0.27419	0.90469	0.06686	0.00000	0.00000	0.00000
205	0.24157	2.59344	0.14704	0.00000	0.00000	0.00000
206	0.01390	12.09846	0.91559	0.00000	0.00000	0.00000
SUM	1.46767	73.42931	5.12777	0.00000	4.63530	0.00000
Condition **IM=Impact**						
SUM	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Condition **NWx=Neg Wind In X**						
175	2.53857	28.94332	0.27304	0.00000	8.51104	0.00000
188	0.42811	-24.63234	-0.26377	0.00000	0.00000	0.00000
189	3.55421	-12.10248	-0.81298	0.00000	0.00000	0.00000
194	5.16308	-11.09689	0.14276	0.00000	0.00000	0.00000
195	10.49646	-42.32120	0.63163	0.00000	0.00000	0.00000
196	0.73287	19.38680	0.16105	0.00000	0.00000	0.00000
197	0.15925	7.86186	0.01937	0.00000	0.00000	0.00000
198	1.58107	32.73775	-0.19716	0.00000	0.00000	0.00000
203	0.22110	-10.10292	0.28729	0.00000	0.00000	0.00000
204	3.24168	10.16289	-0.00142	0.00000	0.00000	0.00000
205	2.56929	22.65158	0.01691	0.00000	0.00000	0.00000
206	0.57286	-21.48837	-0.25673	0.00000	0.00000	0.00000
SUM	31.25852	0.00000	0.00000	0.00000	8.51104	0.00000
Condition **NWz=Neg Wind In Z**						
175	0.06902	-17.85184	-2.34811	0.00000	-2.99485	0.00000
188	-0.05289	3.50491	-2.42577	0.00000	0.00000	0.00000
189	0.06277	-137.11477	-7.82669	0.00000	0.00000	0.00000
194	-0.90331	-11.61194	-5.72244	0.00000	0.00000	0.00000
195	0.40695	21.88384	-3.86945	0.00000	0.00000	0.00000
196	0.13292	-139.13064	-9.79690	0.00000	0.00000	0.00000
197	-0.00226	-3.45676	-1.60215	0.00000	0.00000	0.00000
198	0.35989	-4.17224	-1.73517	0.00000	0.00000	0.00000
203	0.07556	146.03652	-11.06045	0.00000	0.00000	0.00000
204	0.11942	-0.19398	-0.00450	0.00000	0.00000	0.00000
205	-0.33569	28.49276	-0.93889	0.00000	0.00000	0.00000
206	0.06761	113.61414	-10.92521	0.00000	0.00000	0.00000
SUM	0.00000	0.00000	-58.25573	0.00000	-2.99485	0.00000
Condition **D1=1.4DL**						
175	0.04306	11.53535	0.05503	0.00000	-0.34360	0.00000
188	-0.00430	4.56181	0.00192	0.00000	0.00000	0.00000
189	-0.01972	11.42425	0.01001	0.00000	0.00000	0.00000
194	-0.05541	9.53857	0.11752	0.00000	0.00000	0.00000
195	-0.02495	8.40892	-0.08701	0.00000	0.00000	0.00000
196	0.01650	7.84164	0.00346	0.00000	0.00000	0.00000
197	-0.00121	9.09908	0.00514	0.00000	0.00000	0.00000
198	0.01748	8.28282	-0.05318	0.00000	0.00000	0.00000
203	0.00437	5.22636	-0.04034	0.00000	0.00000	0.00000
204	0.05467	6.06632	0.00367	0.00000	0.00000	0.00000
205	-0.03444	8.90175	-0.00346	0.00000	0.00000	0.00000
206	0.00397	8.31755	-0.01262	0.00000	0.00000	0.00000
SUM	0.00000	99.20440	0.00016	0.00000	-0.34360	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **D2=1.2DL+1.6LL+1.6IM**						
175	0.16976	34.85662	0.32852	0.00000	-1.33267	0.00000
188	-0.02187	16.19878	-0.01138	0.00000	0.00000	0.00000
189	-0.08201	28.86672	-0.02083	0.00000	0.00000	0.00000
194	-0.23678	30.52525	0.64575	0.00000	0.00000	0.00000
195	-0.11308	30.54473	-0.50329	0.00000	0.00000	0.00000
196	0.08696	24.40224	-0.07309	0.00000	0.00000	0.00000
197	0.01416	19.09058	0.00806	0.00000	0.00000	0.00000
198	0.04476	28.88991	-0.31180	0.00000	0.00000	0.00000
203	0.01422	10.41123	-0.07564	0.00000	0.00000	0.00000
204	0.09767	5.78601	0.00814	0.00000	0.00000	0.00000
205	0.01337	9.77799	-0.00773	0.00000	0.00000	0.00000
206	0.01282	10.47477	0.01343	0.00000	0.00000	0.00000
SUM	0.00000	249.82483	0.00013	0.00000	-1.33267	0.00000
Condition **D3=1.2DL+0.5Wx**						
175	-0.90812	0.62701	-0.06641	0.00000	-6.34523	0.00000
188	-0.08338	11.15929	0.13366	0.00000	0.00000	0.00000
189	-1.31816	14.31521	0.42022	0.00000	0.00000	0.00000
194	-1.90453	11.64605	0.04080	0.00000	0.00000	0.00000
195	-4.13076	22.24021	-0.31716	0.00000	0.00000	0.00000
196	-0.48419	-0.29122	-0.15100	0.00000	0.00000	0.00000
197	-0.22177	5.98318	-0.02021	0.00000	0.00000	0.00000
198	-0.64651	-4.68708	0.02258	0.00000	0.00000	0.00000
203	-0.30952	8.54710	-0.24591	0.00000	0.00000	0.00000
204	-1.30281	1.10420	-0.00022	0.00000	0.00000	0.00000
205	-1.11773	0.64421	-0.00184	0.00000	0.00000	0.00000
206	-0.07800	13.74418	0.18563	0.00000	0.00000	0.00000
SUM	-12.50548	85.03234	0.00013	0.00000	-6.34523	0.00000
Condition **D4=1.2DL+0.5Wz**						
175	0.39753	26.15098	1.34757	0.00000	-12.98374	0.00000
188	0.05084	0.86252	1.62233	0.00000	0.00000	0.00000
189	-0.07284	105.05021	4.61753	0.00000	0.00000	0.00000
194	1.06029	16.65070	3.51190	0.00000	0.00000	0.00000
195	-0.32142	-5.38715	2.42511	0.00000	0.00000	0.00000
196	-0.07607	92.02806	5.00061	0.00000	0.00000	0.00000
197	0.02721	8.29372	0.87205	0.00000	0.00000	0.00000
198	-0.22279	9.09831	0.93767	0.00000	0.00000	0.00000
203	-0.08283	-81.10893	6.64629	0.00000	0.00000	0.00000
204	-0.48592	5.19156	0.50672	0.00000	0.00000	0.00000
205	-0.17457	-17.58786	1.21460	0.00000	0.00000	0.00000
206	-0.07477	-66.72514	7.91965	0.00000	0.00000	0.00000
SUM	0.02465	92.51699	36.62203	0.00000	-12.98374	0.00000
Condition **D5=1.2DL+0.5NWx**						
175	1.31151	24.37718	0.18413	0.00000	3.97082	0.00000
188	0.20226	-8.41994	-0.12993	0.00000	0.00000	0.00000
189	1.75572	3.74036	-0.39855	0.00000	0.00000	0.00000
194	2.53597	2.62089	0.17198	0.00000	0.00000	0.00000
195	5.22646	-13.98316	0.24109	0.00000	0.00000	0.00000
196	0.38305	16.43182	0.08394	0.00000	0.00000	0.00000
197	0.07724	11.73397	0.01391	0.00000	0.00000	0.00000
198	0.81193	23.49152	-0.14402	0.00000	0.00000	0.00000
203	0.11050	-0.58256	0.10879	0.00000	0.00000	0.00000
204	1.67197	10.29166	0.00246	0.00000	0.00000	0.00000
205	1.26071	18.96177	0.00546	0.00000	0.00000	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **D5=1.2DL+0.5NWx**						
206	0.28192	-3.63117	-0.13913	0.00000	0.00000	0.00000
SUM	15.62926	85.03234	0.00013	0.00000	3.97082	0.00000
Condition **D6=1.2DL+0.5NWz**						
175	0.07254	0.94381	-1.09915	0.00000	-1.82151	0.00000
188	-0.03025	5.66638	-1.21591	0.00000	0.00000	0.00000
189	0.01610	-58.93176	-3.77850	0.00000	0.00000	0.00000
194	-0.50142	2.34951	-2.74990	0.00000	0.00000	0.00000
195	0.18390	18.18459	-2.02749	0.00000	0.00000	0.00000
196	0.08200	-63.03690	-4.78118	0.00000	0.00000	0.00000
197	-0.00202	6.06749	-0.78452	0.00000	0.00000	0.00000
198	0.19561	5.00484	-0.90124	0.00000	0.00000	0.00000
203	0.04002	77.69458	-5.71795	0.00000	0.00000	0.00000
204	0.10600	5.10006	0.00738	0.00000	0.00000	0.00000
205	-0.19859	21.90018	-0.48993	0.00000	0.00000	0.00000
206	0.03610	64.08956	-5.58934	0.00000	0.00000	0.00000
SUM	0.00000	85.03234	-29.12773	0.00000	-1.82151	0.00000
Condition **D7=1.2DL+Wx**						
175	-1.85857	-8.63207	-0.18053	0.00000	-12.40549	0.00000
188	-0.15757	18.40835	0.26505	0.00000	0.00000	0.00000
189	-2.61607	18.83979	0.83242	0.00000	0.00000	0.00000
194	-3.76053	15.11577	-0.01880	0.00000	0.00000	0.00000
195	-8.22922	37.27322	-0.55911	0.00000	0.00000	0.00000
196	-0.98739	-7.30478	-0.30576	0.00000	0.00000	0.00000
197	-0.44367	4.16664	-0.04505	0.00000	0.00000	0.00000
198	-1.31596	-16.47380	0.09011	0.00000	0.00000	0.00000
203	-0.61968	12.61489	-0.45634	0.00000	0.00000	0.00000
204	-2.65625	-2.99308	-0.00383	0.00000	0.00000	0.00000
205	-2.21196	-6.34076	-0.00046	0.00000	0.00000	0.00000
206	-0.15408	20.35817	0.38243	0.00000	0.00000	0.00000
SUM	-25.01095	85.03234	0.00013	0.00000	-12.40549	0.00000
Condition **D8=1.2DL+Wz**						
175	0.75327	42.41000	2.57939	0.00000	-25.51997	0.00000
188	0.10706	-2.17256	3.26549	0.00000	0.00000	0.00000
189	-0.12677	200.38369	8.75802	0.00000	0.00000	0.00000
194	2.17418	25.13847	6.89142	0.00000	0.00000	0.00000
195	-0.61211	-18.02576	4.99171	0.00000	0.00000	0.00000
196	-0.16717	177.46481	9.65153	0.00000	0.00000	0.00000
197	0.05527	8.78852	1.73992	0.00000	0.00000	0.00000
198	-0.45767	11.12013	1.91305	0.00000	0.00000	0.00000
203	-0.18439	-166.82450	13.69544	0.00000	0.00000	0.00000
204	-1.01048	5.20239	1.01036	0.00000	0.00000	0.00000
205	-0.31608	-42.84126	2.54992	0.00000	0.00000	0.00000
206	-0.16581	-140.64230	16.19767	0.00000	0.00000	0.00000
SUM	0.04930	100.00164	73.24393	0.00000	-25.51997	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **D9=1.2DL+NWx**						
175	2.57420	38.86940	0.32023	0.00000	8.22798	0.00000
188	0.42118	-20.74916	-0.26222	0.00000	0.00000	0.00000
189	3.53386	-2.31259	-0.80517	0.00000	0.00000	0.00000
194	5.12133	-2.93503	0.24377	0.00000	0.00000	0.00000
195	10.49381	-35.17375	0.55829	0.00000	0.00000	0.00000
196	0.74346	26.14420	0.16393	0.00000	0.00000	0.00000
197	0.15216	15.66691	0.02296	0.00000	0.00000	0.00000
198	1.59473	39.88492	-0.24327	0.00000	0.00000	0.00000
203	0.22200	-5.64890	0.25311	0.00000	0.00000	0.00000
204	3.29146	15.38102	0.00145	0.00000	0.00000	0.00000
205	2.53949	30.29828	0.01400	0.00000	0.00000	0.00000
206	0.57084	-14.39297	-0.26695	0.00000	0.00000	0.00000
SUM	31.25852	85.03234	0.00013	0.00000	8.22798	0.00000
Condition **D10=1.2DL+NWz**						
175	0.10641	-8.00721	-2.27839	0.00000	-3.31009	0.00000
188	-0.05652	7.42574	-2.42298	0.00000	0.00000	0.00000
189	0.04615	-127.65188	-7.82724	0.00000	0.00000	0.00000
194	-0.95348	-3.47371	-5.62026	0.00000	0.00000	0.00000
195	0.38578	29.15836	-3.93587	0.00000	0.00000	0.00000
196	0.14800	-132.78015	-9.82236	0.00000	0.00000	0.00000
197	-0.00314	4.33485	-1.57936	0.00000	0.00000	0.00000
198	0.37601	2.91030	-1.76465	0.00000	0.00000	0.00000
203	0.07953	150.89805	-11.12987	0.00000	0.00000	0.00000
204	0.16599	5.00198	0.01139	0.00000	0.00000	0.00000
205	-0.36606	36.16615	-0.92366	0.00000	0.00000	0.00000
206	0.07131	121.04986	-10.96236	0.00000	0.00000	0.00000
SUM	0.00000	85.03234	-58.25560	0.00000	-3.31009	0.00000
Condition **D11=1.2DL+Wx+LL+IM**						
175	-1.77356	6.93424	-0.00402	0.00000	-13.02819	0.00000
188	-0.16378	26.11603	0.25586	0.00000	0.00000	0.00000
189	-2.65361	30.75335	0.81281	0.00000	0.00000	0.00000
194	-3.88418	29.09816	0.32130	0.00000	0.00000	0.00000
195	-8.30017	51.91599	-0.82850	0.00000	0.00000	0.00000
196	-0.93589	3.70994	-0.35092	0.00000	0.00000	0.00000
197	-0.43000	11.21687	-0.04153	0.00000	0.00000	0.00000
198	-1.29241	-2.89990	-0.07527	0.00000	0.00000	0.00000
203	-0.61066	16.34944	-0.48095	0.00000	0.00000	0.00000
204	-2.63028	-2.64311	-0.00063	0.00000	0.00000	0.00000
205	-2.18944	-5.01277	-0.00356	0.00000	0.00000	0.00000
206	-0.14698	22.48941	0.39554	0.00000	0.00000	0.00000
SUM	-25.01095	188.02765	0.00013	0.00000	-13.02819	0.00000
Condition **D12=1.2DL+Wz+LL+IM**						
175	0.83351	58.09659	2.70257	0.00000	-26.17719	0.00000
188	0.09346	5.48273	3.24170	0.00000	0.00000	0.00000
189	-0.16781	212.91727	8.73992	0.00000	0.00000	0.00000
194	2.05983	39.16676	7.21055	0.00000	0.00000	0.00000
195	-0.66685	-3.56126	4.68599	0.00000	0.00000	0.00000
196	-0.12412	189.18793	9.62269	0.00000	0.00000	0.00000
197	0.06302	15.86235	1.72661	0.00000	0.00000	0.00000
198	-0.44070	24.77794	1.69905	0.00000	0.00000	0.00000
203	-0.17645	-163.81106	13.74413	0.00000	0.00000	0.00000
204	-0.97844	5.57442	1.01845	0.00000	0.00000	0.00000
205	-0.28720	-41.58679	2.55597	0.00000	0.00000	0.00000

Reactions

	Forces [Kip]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **D12=1.2DL+Wz+LL+IM**						
206	-0.15894	-139.10993	16.29631	0.00000	0.00000	0.00000
SUM	0.04930	202.99695	73.24393	0.00000	-26.17719	0.00000
Condition **D13=1.2DL+NWx+LL+IM**						
175	2.65453	54.53214	0.49552	0.00000	7.52017	0.00000
188	0.40306	-13.11185	-0.26919	0.00000	0.00000	0.00000
189	3.48936	9.61198	-0.82197	0.00000	0.00000	0.00000
194	5.01070	11.01236	0.58464	0.00000	0.00000	0.00000
195	10.45438	-20.66546	0.29222	0.00000	0.00000	0.00000
196	0.78149	37.23413	0.11320	0.00000	0.00000	0.00000
197	0.15617	22.73544	0.02398	0.00000	0.00000	0.00000
198	1.60684	53.56588	-0.41077	0.00000	0.00000	0.00000
203	0.22567	-1.96803	0.22532	0.00000	0.00000	0.00000
204	3.32986	15.76733	0.00443	0.00000	0.00000	0.00000
205	2.57098	31.67040	0.01114	0.00000	0.00000	0.00000
206	0.57548	-12.35667	-0.24839	0.00000	0.00000	0.00000
SUM	31.25852	188.02765	0.00013	0.00000	7.52017	0.00000
Condition **D14=1.2DL+NWz+LL+IM**						
175	0.19178	7.54587	-2.05916	0.00000	-4.03796	0.00000
188	-0.06750	15.11723	-2.41863	0.00000	0.00000	0.00000
189	0.00614	-116.19736	-7.85745	0.00000	0.00000	0.00000
194	-1.07278	10.43966	-5.26394	0.00000	0.00000	0.00000
195	0.32799	43.84178	-4.17111	0.00000	0.00000	0.00000
196	0.19578	-122.28628	-9.89663	0.00000	0.00000	0.00000
197	0.00672	11.38151	-1.56327	0.00000	0.00000	0.00000
198	0.39650	16.49862	-1.89112	0.00000	0.00000	0.00000
203	0.08558	155.17900	-11.20830	0.00000	0.00000	0.00000
204	0.19543	5.35842	0.01025	0.00000	0.00000	0.00000
205	-0.34240	37.56593	-0.93166	0.00000	0.00000	0.00000
206	0.07676	123.58326	-11.00457	0.00000	0.00000	0.00000
SUM	0.00000	188.02765	-58.25560	0.00000	-4.03796	0.00000
Condition **D15=1.2DL+EQx**						
175	0.52598	15.12714	0.08890	0.00000	10.95887	0.00000
188	0.03334	8.68034	0.14263	0.00000	0.00000	0.00000
189	0.43853	17.53931	0.44498	0.00000	0.00000	0.00000
194	0.79872	10.39240	0.22400	0.00000	0.00000	0.00000
195	1.39889	13.78989	0.04621	0.00000	0.00000	0.00000
196	0.11772	11.44823	0.34060	0.00000	0.00000	0.00000
197	0.03019	9.33914	0.06601	0.00000	0.00000	0.00000
198	0.23067	12.31112	0.01890	0.00000	0.00000	0.00000
203	0.04022	9.26805	0.36433	0.00000	0.00000	0.00000
204	0.59002	6.90256	0.02204	0.00000	0.00000	0.00000
205	0.39122	13.73567	0.04873	0.00000	0.00000	0.00000
206	0.03694	10.65372	0.53121	0.00000	0.00000	0.00000
SUM	4.63245	139.18756	2.33855	0.00000	10.95887	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **D16=1.2DL+EQz**						
175	0.05653	12.32898	0.25404	0.00000	4.34084	0.00000
188	0.00453	4.92955	0.18523	0.00000	0.00000	0.00000
189	0.14414	21.88812	0.55210	0.00000	0.00000	0.00000
194	0.10119	9.28173	0.59379	0.00000	0.00000	0.00000
195	0.46876	11.82630	0.26956	0.00000	0.00000	0.00000
196	0.04506	23.04894	0.85867	0.00000	0.00000	0.00000
197	0.00052	8.50512	0.14869	0.00000	0.00000	0.00000
198	0.07771	9.72174	0.10294	0.00000	0.00000	0.00000
203	0.01884	21.37529	1.04403	0.00000	0.00000	0.00000
204	0.32105	6.10438	0.07001	0.00000	0.00000	0.00000
205	0.21205	10.22349	0.14408	0.00000	0.00000	0.00000
206	0.01730	19.22800	0.90478	0.00000	0.00000	0.00000
SUM	1.46767	158.46165	5.12790	0.00000	4.34084	0.00000
Condition **D17=1.2DL+EQx+LL+IM**						
175	0.60903	30.73156	0.26475	0.00000	10.31187	0.00000
188	0.02202	16.36115	0.13453	0.00000	0.00000	0.00000
189	0.39783	29.45579	0.42660	0.00000	0.00000	0.00000
194	0.68040	24.36061	0.56459	0.00000	0.00000	0.00000
195	1.34144	28.37699	-0.22167	0.00000	0.00000	0.00000
196	0.16329	22.49421	0.29312	0.00000	0.00000	0.00000
197	0.03976	16.39608	0.06831	0.00000	0.00000	0.00000
198	0.24931	25.92931	-0.14752	0.00000	0.00000	0.00000
203	0.04678	12.98024	0.33869	0.00000	0.00000	0.00000
204	0.62177	7.26901	0.02516	0.00000	0.00000	0.00000
205	0.41799	15.07947	0.04575	0.00000	0.00000	0.00000
206	0.04283	12.74845	0.54625	0.00000	0.00000	0.00000
SUM	4.63245	242.18287	2.33855	0.00000	10.31187	0.00000
Condition **D18=1.2DL+EQz+LL+IM**						
175	0.13957	27.93341	0.42988	0.00000	3.69384	0.00000
188	-0.00679	12.61036	0.17712	0.00000	0.00000	0.00000
189	0.10344	33.80460	0.53372	0.00000	0.00000	0.00000
194	-0.01713	23.24994	0.93438	0.00000	0.00000	0.00000
195	0.41131	26.41340	0.00168	0.00000	0.00000	0.00000
196	0.09063	34.09491	0.81118	0.00000	0.00000	0.00000
197	0.01009	15.56205	0.15099	0.00000	0.00000	0.00000
198	0.09634	23.33993	-0.06349	0.00000	0.00000	0.00000
203	0.02540	25.08749	1.01840	0.00000	0.00000	0.00000
204	0.35279	6.47083	0.07313	0.00000	0.00000	0.00000
205	0.23882	11.56730	0.14109	0.00000	0.00000	0.00000
206	0.02320	21.32273	0.91982	0.00000	0.00000	0.00000
SUM	1.46767	261.45695	5.12790	0.00000	3.69384	0.00000
Condition **D19=0.9DL+Wx**						
175	-1.86804	-11.09766	-0.19235	0.00000	-12.32515	0.00000
188	-0.15726	17.42668	0.26463	0.00000	0.00000	0.00000
189	-2.61254	16.39042	0.83011	0.00000	0.00000	0.00000
194	-3.74765	13.06938	-0.04390	0.00000	0.00000	0.00000
195	-8.22024	35.46050	-0.54021	0.00000	0.00000	0.00000
196	-0.99160	-8.97876	-0.30646	0.00000	0.00000	0.00000
197	-0.44454	2.21765	-0.04638	0.00000	0.00000	0.00000
198	-1.31991	-18.24002	0.10138	0.00000	0.00000	0.00000
203	-0.62121	11.49035	-0.44752	0.00000	0.00000	0.00000
204	-2.66731	-4.28915	-0.00469	0.00000	0.00000	0.00000
205	-2.20457	-8.24597	0.00032	0.00000	0.00000	0.00000

Reactions

	Forces [Kip]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **D19=0.9DL+Wx**						
206	-0.15609	18.57084	0.38517	0.00000	0.00000	0.00000
SUM	-25.01095	63.77426	0.00010	0.00000	-12.32515	0.00000
Condition **D20=0.9DL+Wz**						
175	0.74412	39.92167	2.57457	0.00000	-25.43162	0.00000
188	0.10823	-3.14482	3.26534	0.00000	0.00000	0.00000
189	-0.12247	197.82634	8.75568	0.00000	0.00000	0.00000
194	2.18474	23.08407	6.86703	0.00000	0.00000	0.00000
195	-0.60672	-19.80688	5.01244	0.00000	0.00000	0.00000
196	-0.17042	175.67080	9.64475	0.00000	0.00000	0.00000
197	0.05600	6.83585	1.74403	0.00000	0.00000	0.00000
198	-0.46109	9.33998	1.92928	0.00000	0.00000	0.00000
203	-0.18540	-167.82710	13.69165	0.00000	0.00000	0.00000
204	-1.02194	3.90281	1.01331	0.00000	0.00000	0.00000
205	-0.30885	-44.73272	2.55579	0.00000	0.00000	0.00000
206	-0.16689	-142.32643	16.19004	0.00000	0.00000	0.00000
SUM	0.04930	78.74355	73.24390	0.00000	-25.43162	0.00000
Condition **D21=0.9DL+NWx**						
175	2.56529	36.38779	0.30843	0.00000	8.29880	0.00000
188	0.42292	-21.71991	-0.26260	0.00000	0.00000	0.00000
189	3.53895	-4.76027	-0.80712	0.00000	0.00000	0.00000
194	5.13177	-4.97549	0.21852	0.00000	0.00000	0.00000
195	10.49445	-36.96045	0.57663	0.00000	0.00000	0.00000
196	0.74082	24.45449	0.16321	0.00000	0.00000	0.00000
197	0.15394	13.71562	0.02206	0.00000	0.00000	0.00000
198	1.59132	38.09802	-0.23174	0.00000	0.00000	0.00000
203	0.22178	-6.76204	0.26165	0.00000	0.00000	0.00000
204	3.27901	14.07647	0.00073	0.00000	0.00000	0.00000
205	2.54693	28.38658	0.01473	0.00000	0.00000	0.00000
206	0.57135	-16.16656	-0.26439	0.00000	0.00000	0.00000
SUM	31.25852	63.77426	0.00010	0.00000	8.29880	0.00000
Condition **D22=0.9DL+NWz**						
175	0.09707	-10.46841	-2.29585	0.00000	-3.23116	0.00000
188	-0.05561	6.44557	-2.42367	0.00000	0.00000	0.00000
189	0.05030	-130.01756	-7.82709	0.00000	0.00000	0.00000
194	-0.94094	-5.50823	-5.64580	0.00000	0.00000	0.00000
195	0.39106	27.33980	-3.91928	0.00000	0.00000	0.00000
196	0.14424	-134.36780	-9.81594	0.00000	0.00000	0.00000
197	-0.00291	2.38693	-1.58508	0.00000	0.00000	0.00000
198	0.37198	1.13959	-1.75729	0.00000	0.00000	0.00000
203	0.07854	149.68269	-11.11250	0.00000	0.00000	0.00000
204	0.15435	3.70299	0.00741	0.00000	0.00000	0.00000
205	-0.35847	34.24776	-0.92749	0.00000	0.00000	0.00000
206	0.07038	119.19093	-10.95305	0.00000	0.00000	0.00000
SUM	0.00000	63.77426	-58.25563	0.00000	-3.23116	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **D23=0.9DL+EQx**						
175	0.51676	12.65522	0.07711	0.00000	11.03255	0.00000
188	0.03426	7.70284	0.14222	0.00000	0.00000	0.00000
189	0.44276	15.09110	0.44284	0.00000	0.00000	0.00000
194	0.81060	8.34843	0.19881	0.00000	0.00000	0.00000
195	1.40423	11.98808	0.06486	0.00000	0.00000	0.00000
196	0.11419	9.76762	0.33986	0.00000	0.00000	0.00000
197	0.03045	7.38932	0.06491	0.00000	0.00000	0.00000
198	0.22692	10.53615	0.03030	0.00000	0.00000	0.00000
203	0.03929	8.14839	0.37298	0.00000	0.00000	0.00000
204	0.57831	5.60263	0.02125	0.00000	0.00000	0.00000
205	0.39860	11.82813	0.04947	0.00000	0.00000	0.00000
206	0.03609	8.87158	0.53391	0.00000	0.00000	0.00000
SUM	4.63245	117.92948	2.33852	0.00000	11.03255	0.00000
Condition **D24=0.9DL+EQz**						
175	0.04730	9.85706	0.24224	0.00000	4.41452	0.00000
188	0.00545	3.95205	0.18481	0.00000	0.00000	0.00000
189	0.14837	19.43991	0.54996	0.00000	0.00000	0.00000
194	0.11307	7.23776	0.56861	0.00000	0.00000	0.00000
195	0.47410	10.02450	0.28821	0.00000	0.00000	0.00000
196	0.04153	21.36832	0.85793	0.00000	0.00000	0.00000
197	0.00078	6.55529	0.14759	0.00000	0.00000	0.00000
198	0.07396	7.94677	0.11433	0.00000	0.00000	0.00000
203	0.01790	20.25563	1.05268	0.00000	0.00000	0.00000
204	0.30933	4.80445	0.06922	0.00000	0.00000	0.00000
205	0.21942	8.31596	0.14482	0.00000	0.00000	0.00000
206	0.01646	17.44586	0.90748	0.00000	0.00000	0.00000
SUM	1.46767	137.20356	5.12787	0.00000	4.41452	0.00000
Condition **S1=DL**						
175	0.03076	8.23942	0.03930	0.00000	-0.24533	0.00000
188	-0.00307	3.25849	0.00137	0.00000	0.00000	0.00000
189	-0.01409	8.15987	0.00715	0.00000	0.00000	0.00000
194	-0.03958	6.81327	0.08394	0.00000	0.00000	0.00000
195	-0.01784	6.00657	-0.06215	0.00000	0.00000	0.00000
196	0.01179	5.60066	0.00248	0.00000	0.00000	0.00000
197	-0.00085	6.49930	0.00367	0.00000	0.00000	0.00000
198	0.01248	5.91617	-0.03799	0.00000	0.00000	0.00000
203	0.00312	3.73363	-0.02881	0.00000	0.00000	0.00000
204	0.03905	4.33308	0.00262	0.00000	0.00000	0.00000
205	-0.02460	6.35836	-0.00247	0.00000	0.00000	0.00000
206	0.00284	5.94147	-0.00901	0.00000	0.00000	0.00000
SUM	0.00000	70.86028	0.00011	0.00000	-0.24533	0.00000
Condition **S2=DL+LL+IM**						
175	0.11381	23.84343	0.21514	0.00000	-0.89181	0.00000
188	-0.01438	10.93948	-0.00673	0.00000	0.00000	0.00000
189	-0.05479	20.07500	-0.01123	0.00000	0.00000	0.00000
194	-0.15791	20.78148	0.42452	0.00000	0.00000	0.00000
195	-0.07534	20.59412	-0.33002	0.00000	0.00000	0.00000
196	0.05737	16.64534	-0.04500	0.00000	0.00000	0.00000
197	0.00875	13.55618	0.00596	0.00000	0.00000	0.00000
198	0.03112	19.53408	-0.20443	0.00000	0.00000	0.00000
203	0.00969	7.44722	-0.05443	0.00000	0.00000	0.00000
204	0.07079	4.69953	0.00575	0.00000	0.00000	0.00000
205	0.00216	7.70244	-0.00544	0.00000	0.00000	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **S2=DL+LL+IM**						
206	0.00874	8.03729	0.00602	0.00000	0.00000	0.00000
SUM	0.00000	173.85559	0.00011	0.00000	-0.89181	0.00000
Condition **S3=DL+0.75LL+0.75IM**						
175	0.09305	19.94201	0.17118	0.00000	-0.72961	0.00000
188	-0.01154	9.01937	-0.00469	0.00000	0.00000	0.00000
189	-0.04462	17.09459	-0.00664	0.00000	0.00000	0.00000
194	-0.12833	17.28939	0.33936	0.00000	0.00000	0.00000
195	-0.06101	16.94769	-0.26303	0.00000	0.00000	0.00000
196	0.04599	13.88270	-0.03311	0.00000	0.00000	0.00000
197	0.00637	11.79191	0.00539	0.00000	0.00000	0.00000
198	0.02647	16.12935	-0.16283	0.00000	0.00000	0.00000
203	0.00805	6.52045	-0.04802	0.00000	0.00000	0.00000
204	0.06285	4.60791	0.00497	0.00000	0.00000	0.00000
205	-0.00454	7.36684	-0.00470	0.00000	0.00000	0.00000
206	0.00726	7.51457	0.00223	0.00000	0.00000	0.00000
SUM	0.00000	148.10676	0.00011	0.00000	-0.72961	0.00000
Condition **S4=DL+0.6Wx**						
175	-1.10403	-2.87033	-0.09706	0.00000	-7.50474	0.00000
188	-0.09829	11.95577	0.15971	0.00000	0.00000	0.00000
189	-1.57546	13.58740	0.50112	0.00000	0.00000	0.00000
194	-2.26749	10.97640	0.01209	0.00000	0.00000	0.00000
195	-4.94631	24.04121	-0.35307	0.00000	0.00000	0.00000
196	-0.58706	-2.81162	-0.18236	0.00000	0.00000	0.00000
197	-0.26634	4.32036	-0.02599	0.00000	0.00000	0.00000
198	-0.78234	-8.22423	0.04368	0.00000	0.00000	0.00000
203	-0.37267	8.61224	-0.28223	0.00000	0.00000	0.00000
204	-1.58074	-0.58019	-0.00147	0.00000	0.00000	0.00000
205	-1.33117	-2.02362	-0.00108	0.00000	0.00000	0.00000
206	-0.09467	13.87688	0.22678	0.00000	0.00000	0.00000
SUM	-15.00657	70.86028	0.00011	0.00000	-7.50474	0.00000
Condition **S5=DL+0.6Wz**						
175	0.46294	27.74864	1.59432	0.00000	-15.44806	0.00000
188	0.06267	-0.39507	1.94901	0.00000	0.00000	0.00000
189	-0.08093	122.43509	5.48137	0.00000	0.00000	0.00000
194	1.28997	16.98039	4.17385	0.00000	0.00000	0.00000
195	-0.37672	-9.10433	2.94636	0.00000	0.00000	0.00000
196	-0.09645	107.93928	5.95549	0.00000	0.00000	0.00000
197	0.03320	7.09164	1.04696	0.00000	0.00000	0.00000
198	-0.27236	8.31548	1.14290	0.00000	0.00000	0.00000
203	-0.10262	-98.94156	8.02760	0.00000	0.00000	0.00000
204	-0.59919	4.32574	0.60841	0.00000	0.00000	0.00000
205	-0.19830	-23.90099	1.47484	0.00000	0.00000	0.00000
206	-0.09263	-82.65245	9.54529	0.00000	0.00000	0.00000
SUM	0.02958	79.84186	43.94639	0.00000	-15.44806	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **S6=DL+0.6NWx**						
175	1.55897	25.62361	0.20355	0.00000	4.87085	0.00000
188	0.24596	-11.53482	-0.15659	0.00000	0.00000	0.00000
189	2.11407	0.89793	-0.48127	0.00000	0.00000	0.00000
194	3.06024	0.14854	0.16948	0.00000	0.00000	0.00000
195	6.28007	-19.41645	0.31672	0.00000	0.00000	0.00000
196	0.45380	17.25008	0.09953	0.00000	0.00000	0.00000
197	0.09328	11.22023	0.01510	0.00000	0.00000	0.00000
198	0.96724	25.58200	-0.15615	0.00000	0.00000	0.00000
203	0.13210	-2.33934	0.14330	0.00000	0.00000	0.00000
204	1.98821	10.44126	0.00178	0.00000	0.00000	0.00000
205	1.52232	19.95534	0.00765	0.00000	0.00000	0.00000
206	0.33886	-6.96810	-0.16299	0.00000	0.00000	0.00000
SUM	18.75511	70.86028	0.00011	0.00000	4.87085	0.00000
Condition **S7=DL+0.6NWz**						
175	0.07326	-2.48947	-1.34252	0.00000	-2.07105	0.00000
188	-0.03492	5.36527	-1.45854	0.00000	0.00000	0.00000
189	0.02513	-74.27522	-4.56796	0.00000	0.00000	0.00000
194	-0.58380	-0.17425	-3.33933	0.00000	0.00000	0.00000
195	0.22808	19.17169	-2.40109	0.00000	0.00000	0.00000
196	0.09290	-78.06997	-5.76663	0.00000	0.00000	0.00000
197	-0.00207	4.42191	-0.94560	0.00000	0.00000	0.00000
198	0.22910	3.40431	-1.06733	0.00000	0.00000	0.00000
203	0.04702	91.55146	-6.81265	0.00000	0.00000	0.00000
204	0.11015	4.21408	0.00640	0.00000	0.00000	0.00000
205	-0.22720	23.47767	-0.58225	0.00000	0.00000	0.00000
206	0.04235	74.26281	-6.67583	0.00000	0.00000	0.00000
SUM	0.00000	70.86028	-34.95333	0.00000	-2.07105	0.00000
Condition **S8=DL+0.7EQx**						
175	0.37311	11.90726	0.06852	0.00000	7.63199	0.00000
188	0.02285	6.59762	0.10006	0.00000	0.00000	0.00000
189	0.30472	13.58297	0.31263	0.00000	0.00000	0.00000
194	0.55277	8.36481	0.17023	0.00000	0.00000	0.00000
195	0.97636	10.61406	0.02241	0.00000	0.00000	0.00000
196	0.08429	8.90966	0.23882	0.00000	0.00000	0.00000
197	0.02100	7.57727	0.04679	0.00000	0.00000	0.00000
198	0.16346	9.56431	0.00715	0.00000	0.00000	0.00000
203	0.02865	7.08523	0.25042	0.00000	0.00000	0.00000
204	0.41926	5.52508	0.01585	0.00000	0.00000	0.00000
205	0.26992	10.63229	0.03372	0.00000	0.00000	0.00000
206	0.02631	8.40839	0.37040	0.00000	0.00000	0.00000
SUM	3.24271	108.76894	1.63700	0.00000	7.63199	0.00000
Condition **S9=DL+0.7EQz**						
175	0.04449	9.94855	0.18411	0.00000	2.99937	0.00000
188	0.00268	3.97207	0.12988	0.00000	0.00000	0.00000
189	0.09864	16.62714	0.38762	0.00000	0.00000	0.00000
194	0.06450	7.58734	0.42909	0.00000	0.00000	0.00000
195	0.32527	9.23955	0.17875	0.00000	0.00000	0.00000
196	0.03343	17.03015	0.60146	0.00000	0.00000	0.00000
197	0.00023	6.99345	0.10467	0.00000	0.00000	0.00000
198	0.05639	7.75175	0.06597	0.00000	0.00000	0.00000
203	0.01369	15.56030	0.72621	0.00000	0.00000	0.00000
204	0.23098	4.96636	0.04942	0.00000	0.00000	0.00000
205	0.14449	8.17377	0.10046	0.00000	0.00000	0.00000

Reactions

	Forces [Kip]			Moments [Lb*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **S9=DL+0.7EQz**						
206	0.01257	14.41039	0.63190	0.00000	0.00000	0.00000
SUM	1.02737	122.26080	3.58955	0.00000	2.99937	0.00000
Condition **S10=DL+0.525EQx**						
175	0.28752	10.99030	0.06121	0.00000	5.66266	0.00000
188	0.01637	5.76284	0.07539	0.00000	0.00000	0.00000
189	0.22501	12.22719	0.23626	0.00000	0.00000	0.00000
194	0.40469	7.97692	0.14866	0.00000	0.00000	0.00000
195	0.72781	9.46218	0.00127	0.00000	0.00000	0.00000
196	0.06617	8.08241	0.17973	0.00000	0.00000	0.00000
197	0.01554	7.30778	0.03601	0.00000	0.00000	0.00000
198	0.12572	8.65228	-0.00413	0.00000	0.00000	0.00000
203	0.02227	6.24733	0.18061	0.00000	0.00000	0.00000
204	0.32421	5.22708	0.01254	0.00000	0.00000	0.00000
205	0.19629	9.56381	0.02467	0.00000	0.00000	0.00000
206	0.02044	7.79166	0.27555	0.00000	0.00000	0.00000
SUM	2.43204	99.29178	1.22778	0.00000	5.66266	0.00000
Condition **S11=DL+0.525EQz**						
175	0.04106	9.52127	0.14791	0.00000	2.18820	0.00000
188	0.00124	3.79367	0.09775	0.00000	0.00000	0.00000
189	0.07046	14.51032	0.29250	0.00000	0.00000	0.00000
194	0.03848	7.39382	0.34280	0.00000	0.00000	0.00000
195	0.23949	8.43130	0.11853	0.00000	0.00000	0.00000
196	0.02802	14.17278	0.45172	0.00000	0.00000	0.00000
197	-0.00004	6.86991	0.07942	0.00000	0.00000	0.00000
198	0.04541	7.29285	0.03998	0.00000	0.00000	0.00000
203	0.01104	12.60363	0.53746	0.00000	0.00000	0.00000
204	0.18300	4.80804	0.03772	0.00000	0.00000	0.00000
205	0.10222	7.71991	0.07473	0.00000	0.00000	0.00000
206	0.01014	12.29316	0.47167	0.00000	0.00000	0.00000
SUM	0.77053	109.41067	2.69219	0.00000	2.18820	0.00000
Condition **S12=0.6DL+0.6Wx**						
175	-1.11653	-6.16111	-0.11281	0.00000	-7.40124	0.00000
188	-0.09755	10.64907	0.15915	0.00000	0.00000	0.00000
189	-1.57038	10.32235	0.49813	0.00000	0.00000	0.00000
194	-2.25085	8.24916	-0.02142	0.00000	0.00000	0.00000
195	-4.93626	21.62997	-0.32802	0.00000	0.00000	0.00000
196	-0.59233	-5.04688	-0.18331	0.00000	0.00000	0.00000
197	-0.26689	1.72129	-0.02765	0.00000	0.00000	0.00000
198	-0.78751	-10.58379	0.05878	0.00000	0.00000	0.00000
203	-0.37439	7.11520	-0.27057	0.00000	0.00000	0.00000
204	-1.59583	-2.31034	-0.00258	0.00000	0.00000	0.00000
205	-1.32132	-4.56512	-0.00006	0.00000	0.00000	0.00000
206	-0.09672	11.49636	0.23041	0.00000	0.00000	0.00000
SUM	-15.00657	42.51617	0.00007	0.00000	-7.40124	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **S13=0.6DL+0.6Wz**						
175	0.45068	24.43968	1.58409	0.00000	-15.33793	0.00000
188	0.06409	-1.69424	1.94870	0.00000	0.00000	0.00000
189	-0.07523	119.08382	5.47786	0.00000	0.00000	0.00000
194	1.30475	14.24678	4.14088	0.00000	0.00000	0.00000
195	-0.36954	-11.49036	2.97297	0.00000	0.00000	0.00000
196	-0.10094	105.60823	5.94929	0.00000	0.00000	0.00000
197	0.03392	4.48962	1.04964	0.00000	0.00000	0.00000
198	-0.27709	5.94481	1.16194	0.00000	0.00000	0.00000
203	-0.10394	-100.34130	8.02961	0.00000	0.00000	0.00000
204	-0.61459	2.59281	0.61034	0.00000	0.00000	0.00000
205	-0.18857	-26.43154	1.48002	0.00000	0.00000	0.00000
206	-0.09396	-84.95056	9.54102	0.00000	0.00000	0.00000
SUM	0.02958	51.49775	43.94635	0.00000	-15.33793	0.00000
Condition **S14=0.6DL+0.6NWx**						
175	1.54692	22.32002	0.18782	0.00000	4.96677	0.00000
188	0.24784	-12.83278	-0.15712	0.00000	0.00000	0.00000
189	2.12040	-2.36577	-0.48397	0.00000	0.00000	0.00000
194	3.07492	-2.57395	0.13584	0.00000	0.00000	0.00000
195	6.28344	-21.80689	0.34133	0.00000	0.00000	0.00000
196	0.44980	15.00225	0.09856	0.00000	0.00000	0.00000
197	0.09484	8.61931	0.01379	0.00000	0.00000	0.00000
198	0.96251	23.20591	-0.14086	0.00000	0.00000	0.00000
203	0.13142	-3.82727	0.15475	0.00000	0.00000	0.00000
204	1.97201	8.70434	0.00079	0.00000	0.00000	0.00000
205	1.53221	17.40864	0.00863	0.00000	0.00000	0.00000
206	0.33881	-9.33764	-0.15950	0.00000	0.00000	0.00000
SUM	18.75511	42.51617	0.00007	0.00000	4.96677	0.00000
Condition **S15=0.6DL+0.6NWz**						
175	0.06085	-5.77675	-1.36281	0.00000	-1.96860	0.00000
188	-0.03370	4.05978	-1.45930	0.00000	0.00000	0.00000
189	0.03071	-77.47341	-4.56927	0.00000	0.00000	0.00000
194	-0.56743	-2.89200	-3.37322	0.00000	0.00000	0.00000
195	0.23515	16.75580	-2.37781	0.00000	0.00000	0.00000
196	0.08799	-80.23626	-5.76219	0.00000	0.00000	0.00000
197	-0.00176	1.82368	-0.95076	0.00000	0.00000	0.00000
198	0.22388	1.04116	-1.05537	0.00000	0.00000	0.00000
203	0.04574	89.98185	-6.79386	0.00000	0.00000	0.00000
204	0.09459	2.48159	0.00280	0.00000	0.00000	0.00000
205	-0.21719	20.92563	-0.58486	0.00000	0.00000	0.00000
206	0.04116	71.82509	-6.66672	0.00000	0.00000	0.00000
SUM	0.00000	42.51617	-34.95337	0.00000	-1.96860	0.00000
Condition **S16=0.6DL+0.7EQx**						
175	0.36081	8.61142	0.05279	0.00000	7.73018	0.00000
188	0.02408	5.29426	0.09952	0.00000	0.00000	0.00000
189	0.31035	10.31884	0.30977	0.00000	0.00000	0.00000
194	0.56861	5.63950	0.13665	0.00000	0.00000	0.00000
195	0.98349	8.21155	0.04727	0.00000	0.00000	0.00000
196	0.07958	6.66909	0.23783	0.00000	0.00000	0.00000
197	0.02135	4.97753	0.04532	0.00000	0.00000	0.00000
198	0.15847	7.19776	0.02234	0.00000	0.00000	0.00000
203	0.02741	5.59209	0.26195	0.00000	0.00000	0.00000
204	0.40364	3.79184	0.01480	0.00000	0.00000	0.00000
205	0.27975	8.08893	0.03471	0.00000	0.00000	0.00000

Reactions

Node	Forces [Kip] FX	FY	FZ	Moments [Lb*ft] MX	MY	MZ
Condition **S16=0.6DL+0.7EQx**						
206	0.02518	6.03202	0.37401	0.00000	0.00000	0.00000
SUM	3.24271	80.42483	1.63696	0.00000	7.73018	0.00000
Condition **S17=0.6DL+0.7EQz**						
175	0.03219	6.65271	0.16839	0.00000	3.09756	0.00000
188	0.00391	2.66870	0.12933	0.00000	0.00000	0.00000
189	0.10428	13.36301	0.38476	0.00000	0.00000	0.00000
194	0.08033	4.86204	0.39551	0.00000	0.00000	0.00000
195	0.33240	6.83704	0.20361	0.00000	0.00000	0.00000
196	0.02872	14.78958	0.60048	0.00000	0.00000	0.00000
197	0.00057	4.39371	0.10320	0.00000	0.00000	0.00000
198	0.05140	5.38520	0.08117	0.00000	0.00000	0.00000
203	0.01244	14.06716	0.73774	0.00000	0.00000	0.00000
204	0.21536	3.23312	0.04837	0.00000	0.00000	0.00000
205	0.15433	5.63040	0.10145	0.00000	0.00000	0.00000
206	0.01143	12.03402	0.63551	0.00000	0.00000	0.00000
SUM	1.02737	93.91668	3.58950	0.00000	3.09756	0.00000