October 13, 2008

Clarke Caton Hintz
Station Place
400 Sullivan Way
Trenton, New Jersey 08628

Attention: Mr. Michael L. Nelson, AIA
Associate

Gentlemen:

Report
Soils and Foundation Investigation
Proposed Additions
Lincroft, Monmouth County, New Jersey
Brookdale Community College

Introduction

This report presents the results of our geotechnical investigation performed for a proposed additions to the existing Collins Arena and the Automotive Technologies Building at the Brookdale Community College Campus in Lincroft, New Jersey. The college campus is located adjacent to and south of Newman Springs Road, and adjacent to and west of Phalanx Road. The approximate location of Brookdale Community College is shown on the Site Location Map, Plate 1.

Proposed Construction

The addition to Collins Arena would be constructed to the southwest of the existing arena. Based on architectural plans provided by your firm, we anticipate the arena addition would be approximately 40,000 square feet in plan area and would include a two-court gymnasium, offices and a fitness center. The addition would be two stories, with the first level (event level) cut into the existing slope, thereby creating a partial basement. The upper and lower level floor slabs for the proposed building would be established at approximately Elevations +80 feet and +68 feet, respectively. Fills of up to seven feet will be required to reach the upper floor level, while cuts up to six feet will be required to reach the majority of the lower floor level. Cuts ranging from six to eleven feet would be required in the northeast corner of the lower level, just north of the existing retaining wall.

The proposed automotive building addition would be a one-story slab-on-grade structure. The building would be constructed to the northeast of the existing building and would include new classrooms and storage bays. The new addition is estimated to be approximately 16,500 square feet in plan area. It is expected that the floor of the automotive addition would match the existing floor level.

Structural loading information was not provided to us, but it is expected that foundation and floor slab loads would be moderate to light.

Purpose and Scope of Work

The purpose of our services was to:

1) explore the subsurface soil and groundwater conditions within the proposed addition areas;

2) estimate the relevant geotechnical engineering properties of the encountered materials;

3) evaluate the site foundation requirements considering the anticipated structural loads and encountered subsurface conditions;

4) recommend an appropriate type of foundation for support of the proposed structures, and provide geotechnical-related foundation design and installation criteria, including an estimate of the Site Class as defined by the International Building Code 2006, New Jersey Edition, for seismic design purposes;

5) provide recommendations for the support and the need for subdrainage of the lowest level floor slabs;

6) estimate the post-construction settlements of the recommended floor and foundation systems;

7) provide estimated geotechnical soil properties to assist in design of below-grade building walls; and

8) discuss appropriate earthwork operations or considerations consistent with the recommended site and foundation solutions.

To accomplish these purposes, a subsurface exploration program consisting of six supervised test borings, four at the proposed arena addition (Borings 1, 2, 3, and 6) and two at the proposed automotive addition (Borings 4 and 5) was conducted at the site. The borings were advanced using truck-mounted hollow-stem auger drilling equipment and extended to a depths varying from approximately 12 to 22 feet below the existing surface grades. The approximate locations of the borings are shown on the Plate Plan, Plate 2.

All field work was performed under the direct technical supervision of a geologist from MTA. Our representative located the explorations in the field relative to existing features shown on the plans provided to us, maintained continuous logs of the borings as the work proceeded and supervised the soil sampling operations so as to obtain the desired subsurface information.

Numerous closely spaced soil samples were obtained from the borings using the procedures of the Standard Penetration Test. Detailed descriptions of the encountered subsurface conditions are presented on the individual Logs of Borings, Plates 3A through 3F. The soils were visually classified in general accordance with the procedures of the Unified Soil Classification System shown on Plate 4.

All soil samples were brought to our office where they were visually examined in our soil mechanics laboratory. Laboratory tests consisting of mechanical grain-size analyses and natural water content tests were performed on selected samples to aid in their identification and evaluation. The results of the grain-size tests are presented on Plate 5, Gradation Curves, while the moisture content determinations are shown on the appropriate test boring logs.

The results of our subsurface explorations and laboratory testing program have provided the basis for our engineering analyses and design recommendations. The following discussions of our findings and recommendations are subject to the limitations attached as an Appendix to this report.

Site Conditions

Surface Features: The proposed Collins Arena addition is located in a lawn. Numerous subsurface utilities including sanitary sewer, electric, water, and stormwater piping may be present in the addition area. An undated, untitled plan provided to us indicates the topography in the addition area slopes down from the east to the west, from a high of approximately Elevation +78 feet to a low of approximately +69 feet.

Most of the Automotive Technology Building addition area is covered by asphalt pavement, while about 20 percent of the addition area appears to be currently lawn. Storm sewer, gas, electric and site lighting were observed in the addition area, and other utilities may also be present. The area

slopes down slightly from the north to the south, with surface grades shown to be varying from about Elevation +80 feet to +76.5 feet.

Subsurface Conditions: The subsurface conditions encountered in the explorations performed for this study consisted of the following generalized strata listed in order of increasing depth.

1) Surface Materials: Approximately five to eight inches of topsoil was encountered in the borings performed in the lawn areas of the proposed arena addition. Four and one-half and seven inches of asphalt were encountered in Borings 4 and 5, respectively, performed in the existing parking lot.

2) Fill Materials: Fill extends to two to three feet below the ground surface in the borings performed in the existing paved areas and a portion of the lawn. The fill generally consisted of silty sands. An eight inch layer of buried topsoil was encountered in Boring 4. The encountered fill conditions and depths should be expected to vary as a result of prior site grading operations, as well as utility construction.

3) Silty Sands: The topsoil and fill were generally underlain by interlayered medium dense to dense silty sands, which extended to the maximum depths explored. However, loose sandy soils were encountered from two to five feet below the ground surface in Boring 3, performed in the southern portion of the lawn.

Groundwater was not encountered in any of the explorations performed for this study at the time of completion.

Conclusions and Recommendations

Based on the results of our study, it is our opinion that:

1) Following our recommended site preparation procedures, the proposed building additions may be supported by conventional spread foundations established on either the undisturbed natural soils, or properly placed controlled compacted fill. Foundations may be proportioned to impose maximum allowable net bearing pressures of up to 4,000 pounds per square foot.

2) The automotive addition and a portion of the arena addition were underlain by fill materials which generally consisted of medium dense silty sands, but which may vary. Some stone and buried topsoil were also encountered. It is our opinion that these materials should be completely removed from within and at least five feet beyond the building limits to the underlying sandy natural soils and replaced with controlled compacted fill.

Groundwater was not encountered in any of the explorations performed for this study.

The following sections of this report present further discussion of these items.

Site Preparation and Earthwork: Initial site preparation activities should include stripping of topsoil and removal of asphalt from within and five feet beyond the addition areas. All utilities should be cut off, capped and removed, or accommodated in the design. Any existing fill materials should also be removed from within and at least five feet beyond the limits of the proposed building. Topsoil may be stockpiled on the site for future use in landscaped areas, but would not be suitable for reuse as structural fill or backfill. The asphalt should be legally disposed of.

Following stripping of topsoil, and pavement and fill removal, the exposed subgrade soils should be thoroughly proofrolled and compacted to a stable consistency under the observation of a qualified geotechnical engineer with at least twelve passes of a heavy vibratory drum compactor having a minimum static drum weight of 12,000 pounds to densify localized zones of loose natural soils encountered in the borings. In addition, following excavation to the planned grades, the exposed subgrade soils should be similarly proofrolled and compacted. Any areas that are detected to be unstable and cannot be compacted should be further excavated to suitable stable subgrade soils and backfilled with controlled compacted fill. The vibrator should be disengaged with in ten feet of the existing building and proofrolling should be performed with fully loaded tandem dump trucks, or as requested by the inspecting geotechnical engineer.

Following proofrolling, controlled compacted fill should be placed as required to reach the final design grades. The fill may consist of approved portions of excavated on-site sandy soils provided they are maintained at moisture contents suitable for compaction or imported granular fill. Based on the results of the explorations, we anticipate that the majority of the excavated on-site soils will consist of natural silty sands that would generally be suitable for reuse as fill, if maintained or conditioned to moisture contents suitable for compaction. Imported fill, if required to complete the site grading, should be composed of relatively well-graded granular soils containing not more than 15 percent by weight of material passing a U.S. Standard No. 200 sieve and having a maximum particle size of four inches.

All controlled compacted fill compacted using large, self-propelled ,vibratory rollers should be spread in horizontal layers of not more than twelve inches in loose thickness and uniformly compacted to at least 95 percent of maximum dry density as determined by the ASTM D-1557 Test Procedures. Backfill soils placed in confined excavations such as for utilities or foundations, should be spread in thinner layers on the order of six to eight inches in loose thickness and compacted to the same degree using portable compaction equipment.

We recommend that all site excavations be performed in accordance with the current OSHA excavation regulations and any state, local or federal requirements. It is our opinion that the on-site sandy soils would be considered Type "C" soils under the OSHA excavation regulations. Excavation support should be provided, if needed, to protect any existing improvements.

Groundwater was not encountered in any of the explorations performed for this study at the time of completion, and it is not expected that groundwater will be a major building construction concern for the slab on grade structures. Surface water runoff should be controlled during

construction. We do recommend that contract documents require the contractor to provide the means and methods to perform all necessary dewatering to maintain excavations in a dry condition until after installation of all utilities and backfilling is complete.

Foundation Design Criteria: Following the site preparation procedures previously described, it is our opinion that the proposed building additions may be supported by conventional shallow foundations established on either the undisturbed, recompacted natural sandy soils, or properly placed controlled compacted fill. Prior to foundation construction, the exposed subgrade soils should be observed by a qualified geotechnical engineer to confirm the required bearing capacity is available. Any loose or disturbed soils encountered at the planned foundation subgrade level should be compacted to a dense condition or excavated and replaced with controlled compacted fill. Foundations may be proportioned to impose the maximum allowable net bearing pressure of up to 4,000 pounds per square foot.

We recommend that all exterior foundations or foundations in any unheated portions of the structure be established at depths of at least three feet below the adjacent exterior grades, or deeper if required by the local building code, to provide protection from frost penetration. Interior foundations in permanently heated portions of the building may be established at convenient levels beneath the floor slab provided they reach the intended bearing stratum. Foundations that abut the existing buildings should be established at the same level as the existing building foundations. We recommend that foundations be lowered below utilities that will remain or so that there is a distance of at least one foot horizontal to one foot vertical measured from the exterior edge of the footing to the bottom of the utility excavation for the utility left in place.

It is our opinion that post-construction settlements of foundations designed and constructed in accordance with our recommendations would be on the order of one-half inch, or less.

Seismic Design Criteria: Based on the results of the borings performed for this study and our knowledge of the regional geology, it is our opinion that the proposed building additions may be designed assuming seismic Site Class "D" as defined by the International Building Code 2006, New Jersey Edition.

Floor Slab Design Criteria: It is our opinion that the ground floor slabs of the proposed structures may be supported at grade by the undisturbed natural soils or properly placed controlled compacted fill. Prior to the construction of the floor slabs, we recommend that the exposed soils be thoroughly proofrolled and recompacted to a firm and unyielding consistency with a heavy vibrating drum compactor to densify any materials that become disturbed by the construction operations. Any unstable areas should be removed and replaced with crushed stone. We recommend that the floor slabs be underlain by a minimum four inch thick layer of porous fill such as clean three-quarter inch crushed stone or washed gravel, or other approved material, to provide a capillary break between the concrete and the underlying subgrade soils.

Post-construction floor slab settlements for lightly loaded slabs are estimated to be one-quarter of one inch or less.

Lateral Earth Pressures: Where below grade or basement walls are constructed, they should be backfilled in accordance with our prior recommendations using the on-site sandy soils or imported granular fill. The walls should be provided with perimeter foundation drain to minimize the build up of hydrostatic pressures behind the walls.

Assuming the on-site sandy soils are used as backfill and compacted to at least 95 percent of ASTM D-1557 maximum dry density, it is our opinion that the total unit weight of 125 pounds per cubic foot, an angle of internal friction of 30 degrees would be appropriate for determining lateral earth pressures. Also, a coefficient of friction of 0.40 between mass concrete and sandy soils would be appropriate for design.

Please contact us if you have any questions regarding this report.

The following Plates and Appendix are attached and complete this report:

Plate 1 – Site Location Map
Plate 2 – Plot Plan
Plates 3A through 3F – Logs of Test Pits
Plate 4 – Unified Soil Classification System
Plate 5 – Gradation Curves
Appendix – Limitations

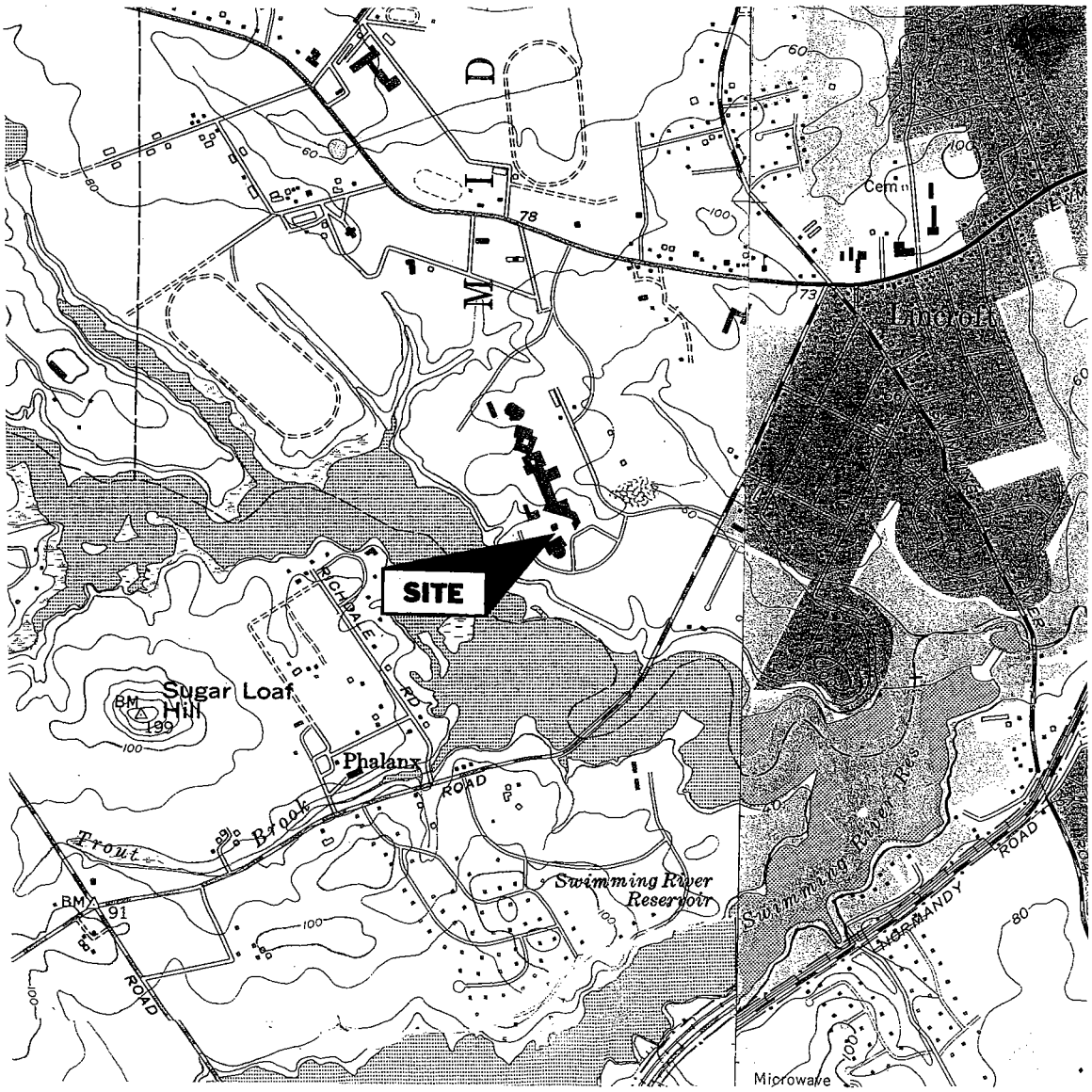
Respectfully submitted,

MELICK-TULLY and ASSOCIATES, P.C.

Christopher P. Tansey, P.E.

Robert E. Schwankert, P.E.
Vice President

CPT:RES/ct
4730-001*1D
(3 copies submitted)



FROM: "Marlboro Quadrangle, NJ, 7.5 Minute Series (Topographic)," USGS, 1954, photorevised 1981.
"Long Branch Quadrangle, NJ, 7.5 Minute Series (Topographic)," USGS, 1954, photorevised 1970.

MELICK-TULLY AND ASSOCIATES, P.C.
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117 Canal Road
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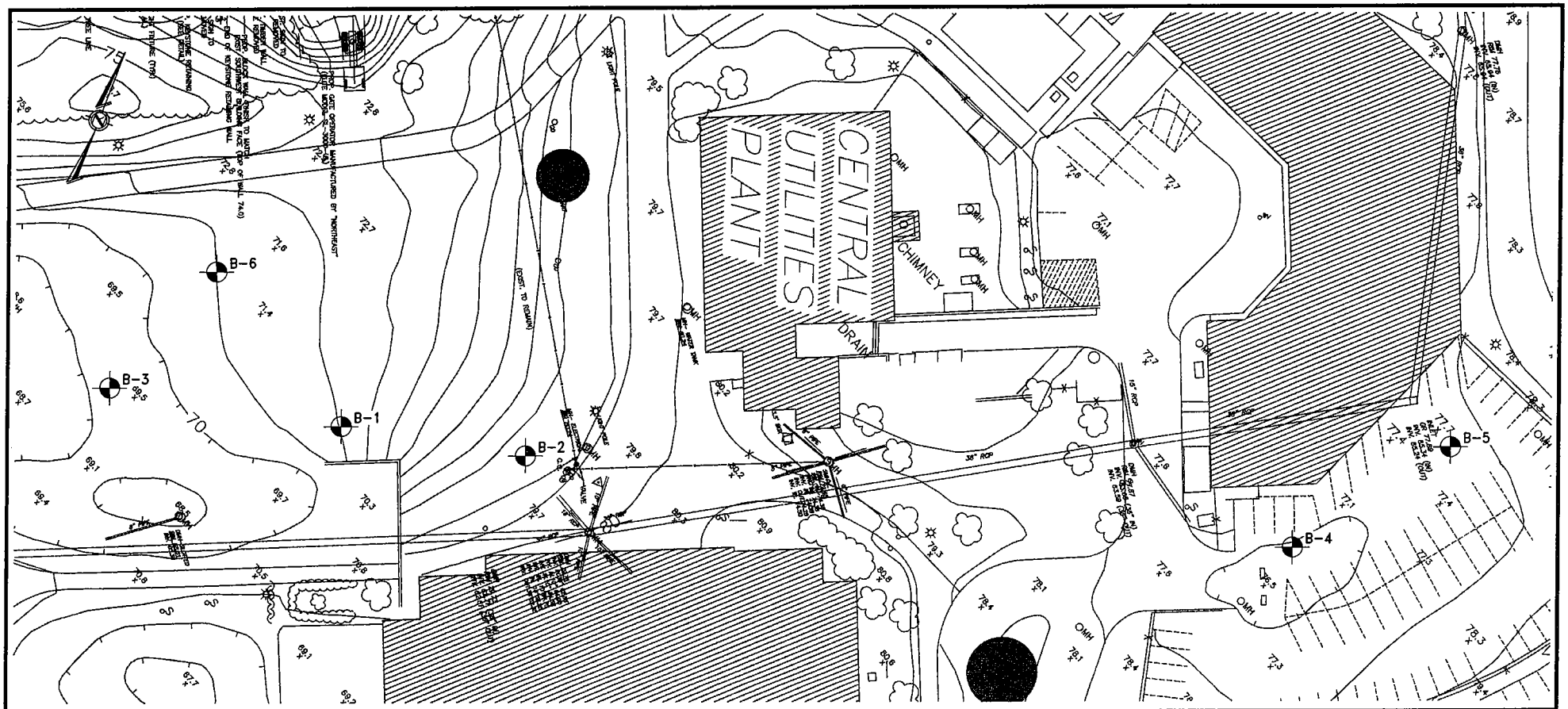
SITE LOCATION MAP

PROPOSED ADDITIONS
LINCROFT, NEW JERSEY
BROOKDALE COMMUNITY COLLEGE

JOB NO.	FILE NO.	DR. BY	CHK. BY	DATE	SCALE	PLATE
4730-001*1D	23849	VJD	CPT	10-8-08	1"=2,000'	1



KEY:

B-1 NUMBER AND APPROXIMATE LOCATION OF BORINGS PERFORMED FOR THIS STUDY

NOTES:

1. This drawing is part of Melick-Tully and Associates, P.C. Report No. 4730-001*1D and should be read together with the report for complete evaluation.
2. General layout was obtained from an unlabeled drawing prepared by Schoor DePalma, scale 1"=500'.

PLOT PLAN

PROPOSED ADDITIONS
LINCROFT, NEW JERSEY
BROOKDALE COMMUNITY COLLEGE

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers
& Environmental Consultants
117 Canal Road
South Bound Brook, New Jersey 08880
(732) 356-3400

JOB NO.	FILE NO.			
4730-001*1D	23849			
DR. BY	CHK. BY	DATE	SCALE	PLATE
VJD	CPT	10-8-08	1"=500'	2

LOG OF BORING

BORING NO. 1

COMPLETION DATE: 9/30/08
JOB NUMBER: 4730-001*1D

SURFACE ELEVATION: +72 ft (±)

WATER LEVEL: *
READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					7" Topsoil	
	S1	15	11.0		Reddish-brown fine to medium sand, little silt (moist)(medium dense)	
	S2	27	13.1			
5					- grading (dense)	5
	S3	32	14.6			
					- grading with ironstone fragments (very dense)	
	S4	64	12.0	SM		
10					- grading (dense)	10
	S5	40				
15						15
	S6	50				
20					Boring completed @ 17'	20
					*Groundwater not encountered	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3A

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 2

COMPLETION DATE: 9/30/08 | SURFACE ELEVATION: +78.5 ft (±) | WATER LEVEL: *

JOB NUMBER: 4730-001*1D | READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					8" Topsoil	
	S1	13	11.0		FILL - Brown fine to medium sand, little silt (moist)(medium dense)	
	S2	28	10.8	SM	Reddish brown fine to medium sand, some silt (moist)(medium dense)	
5	S3	13	8.0			5
	S4	17	5.2	SP/SM	Reddish brown fine to medium sand, trace silt (moist)(medium dense)	
10	S5	14				10
15	S6	29				15
20	46	46			- grading with ironstone fragfments (dense)	20
					Boring completed @ 22'	
25					*Groundwater not encountered	25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3B

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 3

COMPLETION DATE: 9/30/08 | SURFACE ELEVATION: +69 ft (±) | WATER LEVEL: *

JOB NUMBER: 4730-001*1D | READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					8" Topsoil	
	S1	13	5.2	SP/SM	Reddish brown fine to medium sand, little silt (moist)(medium dense)	
	S2	8	13.9			
5	S3	9	14.8			5
	S4	26		SM	Reddish brown fine to medium sand, little silt (moist)(medium dense)	
10	S5	41			- grading (dense)	10
15					Boring completed @ 12' *Groundwater not encountered	15
20						20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3C

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 4

COMPLETION DATE: 9/30/08 | SURFACE ELEVATION: +77 ft (±) | WATER LEVEL: *

JOB NUMBER: 4730-001*1D | READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					4.5" Asphalt	
					FILL - Brown fine to medium sand, some silt (moist)(medium dense)	
	S1	14	9.0		8" Buried topsoil	
	S2	7	12.2		Reddish brown fine to medium sand, little silt (moist)(loose)	
5	S3	10	11.7			5
	S4	27			- grading (medium dense)	
				SP/SM		
10	S5	28				10
15	S6	36			- grading with ironstone fragments (dense)	15
20					Boring completed @ 17' *Groundwater not encountered	20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3D

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

LOG OF BORING

BORING NO. 5

COMPLETION DATE: 9/30/08 | SURFACE ELEVATION: +78 ft (±) | WATER LEVEL: *

JOB NUMBER: 4730-001*1D | READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					7" Asphalt	
				SM	FILL - Gray stone with fines	
	S1	18	12.6		Reddish brown fine to medium sand, some silt (moist)(medium dense)	
	S2	27	11.3		Reddish brown fine to medium sand, little silt (moist)(medium dense)	
5					- grading (dense)	5
	S3	49				
	S4	44				
				SM		
10					- grading (very dense)	10
	S5	58				
15					- grading (dense)	15
	S6	39				
20					Boring completed @ 17'	20
					*Groundwater not encountered	
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3E

MELICK-TULLY AND ASSOCIATES, P.C.
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LOG OF BORING

BORING NO. 6

COMPLETION DATE: 9/30/08 | SURFACE ELEVATION: +71 ft (±) | WATER LEVEL: *

JOB NUMBER: 4730-001*1D | READING DATE: 9/30/08

DEPTH (ft.)	SAMPLES	N-VALUE	MOISTURE CONTENT (%)	SYMBOL	DESCRIPTION	DEPTH (ft.)
					5" Topsoil	
	S1	13	12.1	SP/SM	Reddish brown fine to medium sand, little silt (moist)(medium dense)	
	S2	21	12.5			
5	S3	18	16.2	SM	Reddish brown fine to medium sand, little silt (moist)(medium dense) - grading with ironstone fragments (dense)	5
	S4	41				
10	S5	49				10
15	S6	54			- grading (very dense)	15
20					Boring completed @ 17' *Groundwater not encountered	20
25						25

NOTES FOR COLUMNS:
1. SAMPLE AT AVERAGE SAMPLING DEPTH
2. INDICATES THE NUMBER OF BLOWS TO ADVANCE A 2" OD SAMPLER A DISTANCE OF 12 INCHES USING A 140 POUND WEIGHT FALLING 30 INCHES

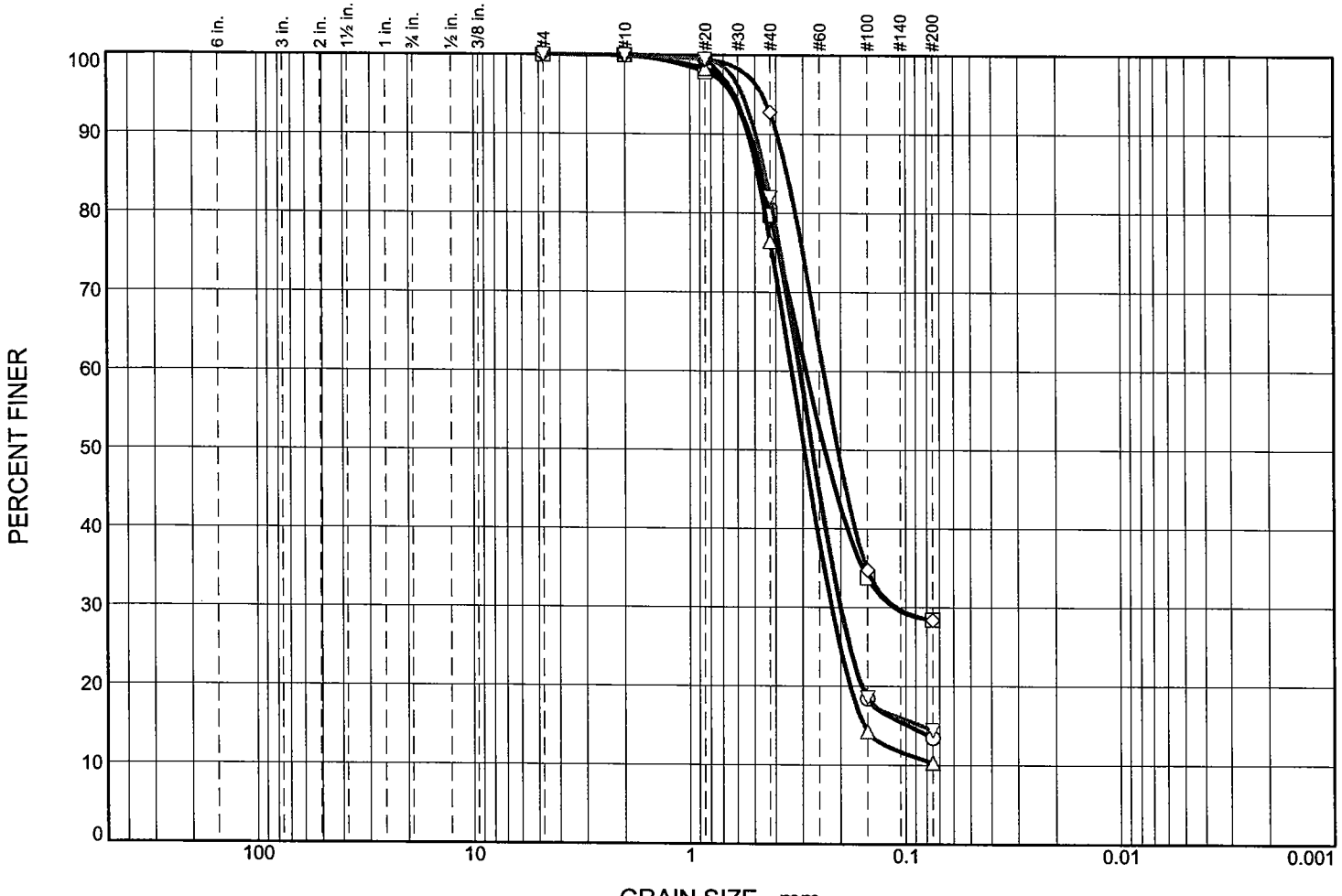
SOIL DESCRIPTION MODIFIERS:
TRACE 0 - 10%
LITTLE 10 - 20%
SOME 20 - 35%
AND OVER 35%

Typist/Date: cpt/mh 10/08

Sheet: 1 of 1 PLATE: 3F

MELICK-TULLY AND ASSOCIATES, P.C.
Geotechnical Engineers and Environmental Consultants

Gradation Curve(s)



	% +3"	% Gravel		% Sand			% Fines
		Coarse	Fine	Coarse	Medium	Fine	
○	0.0	0.0	0.0	0.0	19.5	67.0	13.5
□	0.0	0.0	0.0	0.1	20.1	51.4	28.4
△	0.0	0.0	0.0	0.0	23.6	66.1	10.3
◇	0.0	0.0	0.0	0.1	7.2	64.3	28.4
▽	0.0	0.0	0.0	0.1	17.9	67.6	14.4

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1	S-3	5-7	Fine to medium Sand, little Silt. (MC=14.6%)	SM
□	B-2	S-2	2-4	Fine to medium Sand, some Silt. (MC=10.8%)	SM
△	B-3	S-3	4-6	Fine to medium Sand, little Silt. (MC=14.8%)	SP-SM
◇	B-4	S-1	1	Fine to medium Sand, some Silt. (MC=10.9%)	SM
▽	B-4	S-2	3-5	Fine to medium Sand, little Silt. (MC=12.2%)	SM

Melick-Tully & Associates, P.C.

Client: Brookdale Community College

Project: Proposed Additions, Lincroft, New Jersey

Project No.: 4730-001

Plate

APPENDIX

APPENDIX

Limitations

A. Subsurface Information

Locations: The locations of the explorations were approximately determined by tape measurement from existing site features shown on the plans provided to us. Elevations of the explorations were approximately determined by interpolation between contours shown on topographic plans provided to us by the site engineer. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

Interface of Strata: The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types, and the transitions may be gradual.

Field Logs/Final Logs: A field log was prepared for each exploration by a member of our staff. The field log contains factual information and interpretation of the soil conditions between samples. Our recommendations are based on the final logs as shown in this report and the information contained therein, and not on the field logs. The final logs represent our interpretation of the contents of the field logs, and the results of the laboratory observations and/or tests of the field samples.

Water Levels: Water level readings have been made in the explorations at times and under conditions stated on the individual logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater will occur due to variations in rainfall, temperature, and other factors.

Pollution/Contamination: Unless specifically indicated to the contrary in this report, the scope of our services was limited only to investigation and evaluation of the geotechnical engineering aspects of the site conditions, and did not include any consideration of potential site pollution or contamination resulting from the presence of chemicals, metals, radioactive elements, etc. This report offers no facts or opinions related to potential pollution/contamination of the site.

Environmental Considerations: Unless specifically indicated to the contrary in this report, this report does not address environmental considerations which may affect the site development, e.g., wetlands determinations, flora and fauna, wildlife, etc. The conclusions and recommendations of this report are not intended to supersede any environmental conditions which should be reflected in the site planning.

B. Applicability of Report

This report has been prepared in accordance with generally accepted soils and foundation engineering practices for the exclusive use of Brookdale Community College for specific application to the design of the proposed Collins Arena addition and automotive addition. No other warranty, expressed or implied, is made.

This report may be referred to in the project specifications for general information purposes only, but should not be used as the technical specifications for the work, as it was prepared for design purposes exclusively.

C. Reinterpretation of Recommendations

Change in Location or Nature of Facilities: In the event that any changes in the nature, design or location of the building are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

Changed Conditions During Construction: The analyses and recommendations submitted in this report are based in part upon the data obtained from six widely-spaced test borings performed for this study. The nature and extent of variations between the explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

Changes in State-of-the-Art: The conclusions and recommendations contained in this report are based upon the applicable standards of our profession at the time this report was prepared.

D. Use of Report by Prospective Bidders

This soil and foundation engineering report was prepared for the project by Melick-Tully and Associates, P.C. for design purposes and may not be sufficient to prepare an accurate bid. Contractors utilizing the information in the report should do so with the express understanding that its scope was developed to address design considerations. Prospective bidders should obtain the owner's permission to perform whatever additional explorations or data gathering they deem necessary to prepare their bid accurately.

E. Construction Observation

We recommend that Melick-Tully and Associates, P.C. be retained to provide on-site soils engineering services during the earthwork construction and foundation phases of the work. This is to observe compliance with the design concepts and to allow changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

bearings shall either be cast-in-place, cast
er the concrete has set, except that drilling
's. The use of undercut type expansion
e utilized, they shall be circumferentially
The wall thickness of the sleeves shall be
to them. If holes are drilled, they shall be
During freezing conditions, anchor bolt
ill times.
ad and cantilever sign structures shall be
he concrete shall be according to Subpart

Rail Base Plates, Deck Joints, and
onstruction shall be cast-in-place. Drilled
be permitted if it is determined by the
cations. Anchor bolts for rehabilitation
outed adhesive type anchors bolts. Only
preapproved by the Manager, Bureau of
rojects. Expansion type anchor bolts are
Adhesive type anchor bolts shall be

or bolts shall be based on a maximum
(f'_c) of 4,000 pounds per square inch

is shall be submitted according to the

shown on the shop drawings shall be a
required pullout strength as required for

, washers and nuts shall be indicated on

y drill. The holes shall be ⅛ inch larger
anufacturer's recommendations.
isting deck reinforcement, deck joints,
ke the anchor holes shall not spall the
all be taken so that concrete and existing
process. Any damage to the existing
ation. When air drills are used and rebar
hrough the bar and then continue to air
/ith the air drill, if feasible, to bypass the
and dry and shall comply with all
g installation of the adhesive anchors.
l hole to insure that the annular space
or the entire depth of the hole including

achments shall conform with Subsection

14. **Concrete Exposed to Sea Water.** Construction joints shall not be formed between levels of extreme low water and extreme high water. Between these levels, sea water shall not come in direct contact with the concrete for a period of 28 calendar days after being placed. This shall be accomplished by pumping, retention of forms or use of a waterproof concrete coating.

15. **Pumped Concrete.** At least 20 calendar days before beginning operations, a plan of operation conforming to ACI 304.2R shall be submitted for approval, showing method and procedures along with a list of adequate description of equipment and manpower proposed for use, including contingency equipment and manpower. The equipment shall be so arranged that no vibrations result which might damage freshly placed concrete. Aluminum alloy pipe will not be permitted as a conveyance for the concrete nor for any pieces of equipment in contact with the concrete. When pumping is completed, the concrete remaining in the pipeline, if it is to be used, shall be ejected in such a manner that there is no contamination of the concrete or separation of the ingredients. After this operation, the entire equipment shall be cleaned.

16. **Concrete Deck Overlay Protective System.** To determine the acceptability of the second course of construction the provisions of Subpart D of Subsection 518.06, shall be followed.

17. **Reinforced Concrete Box Culvert, Precast.**

a. **Design and Detail Requirements**. The fabricator of precast concrete culvert units shall be certified by the Precast/Prestressed Concrete Institute or the National Precast Concrete Association in the applicable category and be pre-approved before award of the Contract by the Department. The certification will be maintained during production of items for the Project. A copy of the current field audit report shall be submitted to the Department's Bureau of Materials before the start of production. The fabricator shall provide an Engineer's office according to Subsection 502.03, Subpart E.

Precast concrete units shall be designed with a minimum design compressive strength of f'_c= 5,000 pounds per square inch.

The cover of concrete over the circumferential reinforcement shall be 1½ inch except on the top slab where it shall be 2 inches.

Reinforcement bars shall be tied at all intersections except where the spacing is less than 12 inches in each direction in which case alternate intersections shall be tied.

The wall thickness for the precast culvert shall be a minimum of 8 inches. The top and bottom slab thickness shall be a minimum of 10 inches.

A flexible, watertight neoprene gasket shall be provided at the joint between the precast units. The gasket shall be continuous around the circumference of the joint and shall contain only one splice.

A positive means shall be provided to prevent water from entering the vertical joint between the last precast culvert section and any cast-in-place appurtenances such as wingwalls, cutoff walls, aprons, and cast-in-place culvert end sections.

Two rows of threaded inserts or bar extensions shall be provided in the last precast culvert section for the cast-in-place end section and the wingwall attachment. The same information shall be provided for the headwall attachment, if necessary.

When the earth fill over the precast culvert is less than 2 feet, the top mat of reinforcement in the roof slab shall be corrosion protected.

Lifting devices will be permitted in each precast unit for the purpose of handling and erection. If lifting hooks or lugs are used, they shall be galvanized according to AASHTO M 111.

The precast units shall be tied together with a minimum of four longitudinal strands to ensure an adequate seal and to provide continuity and concrete shear between the precast units. For the purpose of tying units together, a 1½-inch diameter hole shall be preformed in each corner of each unit. If hand holes are used for the installation of the longitudinal ties, they shall be spaced appropriately.

Design calculations shall be submitted according to Subsection 105.04.

b. **Fabrication Requirements**. The fabricator of precast concrete culvert units shall be certified by the Precast/Prestressed Concrete Institute or the National Precast Concrete Association in the applicable category and be pre-approved prior to award of the Contract by the Department. The certification will be maintained during production of items for the Project. A copy of the current field audit report shall be submitted to the Department's Bureau of Materials before the start of production. The fabricator shall provide an Engineer's office according to Subsection 502.03, Subpart E.

Each precast concrete culvert unit shall be identified with a permanent marking. The precast concrete culvert units shall be manufactured in steel forms. Curing of the precast units shall be by any one of the methods specified in Subsection 3.4.3 of the PCI Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products.

If steam curing is used, the PCI Manual is amended as follows. The application of steam within the enclosure shall be delayed for a period of five to six hours when the air temperature is less than 50 °F and shall be delayed for a period of three hours when the air temperature is 50 °F or higher. If retarders are used, the waiting period shall be from four to six hours regardless of the air temperature. The temperature in the enclosure shall be maintained between 90 and 150 °F for a period of 12 hours.

Two representative concrete test cylinders per precast culvert unit, similarly cured, shall be tested after the curing period specified above. Should tests indicate that the precast units have not achieved a compressive strength of 4,000 pounds per square inch or greater, the precast units shall be cured further until the required strength is achieved.

To determine the acceptance or failure of the concrete, one compressive strength test from the two concrete cylinders that are taken from each concrete truck or from each batch of concrete that is produced shall be performed. The two test results shall be averaged together to obtain a single value representing the units. Concrete will be accepted if this averaged single value is equal to or greater than the class design strength as identified in Section 914.05, Table 914-3. Concrete will be accepted with a pay adjustment if the averaged single value is within the range from 1 to 500 pounds per square inch less than the class design strength for the specified concrete class, (i.e. for Class P concrete, this range will be between 5,000 to 5,500 pounds per square inch). The pay adjustment will be according to Section 914. Concrete will be rejected if the averaged single value is greater than an amount that is 500 pounds per square inch less than the class design strength for the specified concrete class. The Engineer may use testing results obtained from concrete cores or nondestructive testing before requiring any corrective action or removal and replacement of the concrete. All costs for coring and testing shall be paid for by the Contractor.

Precast concrete culvert units shall remain in their steel forms for the duration of the steam or natural curing operation. Upon removal of the forms, the entire precast concrete culvert unit including exterior, interior, and all lap surfaces shall be given a Class 1 finish according to Subheading 1 of the fourth paragraph of Subsection 501.14.

Upon approval of the Class 1 finish, precast concrete culvert units shall be given one coat of an epoxy waterproofing seal coat on the exterior of the roof slab. This coating shall be applied in the precaster's plant not earlier than 72 hours after fabrication, and after the concrete compressive strength has reached 5,000 pounds per square inch. The concrete surfaces of the precast units shall be dry before application of the epoxy waterproofing seal coat. The application of the epoxy seal coat shall be in conformance with the product manufacturer's recommendation.

Precast concrete culvert units shall not be shipped until 72 hours after fabrication and after the concrete compressive strength has reached 5,000 pounds per square inch.

The precaster is ultimately responsible for providing a finished product which is acceptable to the Engineer.

c. **Construction and Erection.** A coarse aggregate layer shall be provided under the precast concrete box culvert. The depth of the coarse aggregate layer shall have a minimum depth of 2 feet. It shall extend 12 inches on each side of the precast box culvert. The coarse aggregate layer shall be compacted according to Subsection 203.09.

Before backfilling, a 2-foot wide strip of filter fabric shall be placed over the top and side transverse joints. The filter fabric shall be according to Subsection 919.06.

If precast concrete culvert units are used in parallel for multicell installations, the parallel units shall be placed a maximum of 6 inches apart, and the 6-inch space between the units shall be filled with nonshrink grout. As an alternate, the 6-inch space may be filled and compacted with Zone 2 or crushed stone conforming to coarse aggregate size No. 57. If crushed stone is used, a 2 foot-8 inch wide strip of filter fabric shall be placed over the longitudinal joint.

One longitudinal tie rod or strand shall be placed in position through a 1½-inch diameter preformed hole located in each corner of the box units (a minimum total of four longitudinal ties) and stressed to a tension of 30,000 pounds each. After tensioning, the exposed end of the ties shall be removed so that no part of the ties or no part of the end fittings extend beyond a point 1 inch inside the anchorage pocket. All hardware associated with the end anchorage system shall be galvanized. The exposed parts of the end fittings shall be coated with two coats of bituminous paint. If hand holes are used for the installation of longitudinal ties, they shall be spaced appropriately. A tensile force versus elongation chart for the strand shall be furnished by the fabricator.

The tie rod bars shall be tensioned by torquing. Precautions shall be taken during the tensioning process to prevent any damage to the concrete under the outside bearing plates. The tensioning process shall be conducted so that the tension being applied may be measured at all times.

Hand hole pockets, longitudinal tie rod sleeves, and lifting lugs shall be grouted after the joints are sealed and the longitudinal ties are tensioned. The grout shall be nonshrink and nonmetallic and conform to Subsection 914.03. Any top slab hand hole pockets or lifting holes which are grouted in the field shall receive one coat of an epoxy waterproofing seal coat after the grout has properly cured.

18. Slip-form Method of Parapet Construction.

a. Concrete supply shall be sufficient to produce a continuous, completely shaped parapet. If concrete placement is interrupted for any reason, the placement shall be protected from drying by several layers of wet burlap. A construction dam, or bulkhead, shall be installed if the interruption exceeds 30 minutes. If the interruption exceeds 90 minutes, further placement shall be discontinued. Concrete placement at this location may then resume only after 12 hours, measured from the time of delay, has elapsed.

b. Concrete placement may begin at the joint beyond the bulkhead, without time constraints. If in the opinion of the Engineer the length of placement between the bulkhead and the next joint cannot be slip-formed, the Contractor shall form the section by methods other than slip-forming.

c. Cold joints in the parapets that are formed due to the attachment of fresh concrete shall be made in the following manner. The set concrete shall have its surface cut to remove all loose, and otherwise unsatisfactory materials. Tools used for this purpose shall be approved by the Engineer before use. The surface shall be scrubbed with a wire broom and shall be kept wet until new concrete is placed. Immediately before placing fresh concrete, the set surface shall be completely coated with portland cement bonding grout and thoroughly brushed in. The bonding grout shall be approved.

d. The ends of parapets at bridge expansion joints shall be coated with epoxy waterproofing seal coat.

e. The concrete shall be cured by means of a clear curing compound conforming to Subsection 905.03. Curing compound shall be sprayed on the concrete surface immediately following the slip-forming and hand finishing operations. The compound shall be applied by means of pressure spraying or distributing equipment at the rate directed, but not less than one gallon per 150 square feet of surface. The equipment for applying the compound shall be such that the compound is applied as a fine spray, with no surface damage to the concrete. The equipment shall also provide for adequate agitation of the compound during application, and shall be

SECTION 055100 - METAL STAIRS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes aluminum stair assemblies and crossover platform associated with equipment access.

1.2 REFERENCES

A. Aluminum Association: Aluminum standards and data, latest Edition.

B. American Institute of Steel Construction (AISC)

1. Manual of Steel Construction.
2. Code of Standard Practice.

C. American Society for Testing and Materials (ASTM)

1. ASTM A108-99 - Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.
2. ASTM A123 – Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A193/A193M-03 – Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
4. ASTM A307 – Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi tensile strength.
5. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Founds and Shapes.
6. ASTM A563-00 – Standard Specification for Carbon and Alloy Steel Nuts.
7. ASTM A569/A569M-91a – Standard Specification for Steel, Carbon, Hot-Rolled Sheet and Strip Commercial Quality.

D. National Association of Architectural Metal Manufacturers (NAAMM)

1. NAAMM STANDARD AMP 510-92 Metal Stairs Manual 5th Edition.

E. Society of Automotive Engineers

1. SAE J403 Chemical Compositions of SAE Carbon Steels.
2. SAE J429 Mechanical and Material Requirements for Externally Threaded Fasteners.

1.3 PERFORMANCE REQUIREMENTS

A. Stair Treads: shall be capable of withstanding 100 pounds per square foot or a 300 pound load on an area of 4 square inches without exceeding the allowable working stress of the material; or a single concentrated 1000 pound load without permanent deformation. Treads shall also be designed to withstand all required design loads (i.e. wind, snow, seismic, etc.) in accordance with the required codes of the applicable project.

B. Stair railings: shall be capable of withstanding a single concentrated load of 200 pounds or a uniform load of 50 pounds per linear foot applied in any direction at any point on the rail without exceeding the design working stress of the materials.

C. Stair Stringers: shall be capable of withstanding a uniform live loading of 100 pounds per square foot applied in a downward direction to all installed tread surfaces or a 300 pound load on an area of 4 square inches without exceeding the allowable working stress of the material; or a single concentrated load of 1000 pounds at any point on the stair without permanent deformation. Stringers shall also be designed to withstand all required design loads (i.e. wind, snow, seismic, etc.) in accordance with the required codes of the applicable project.

D. Guard Railings: shall be capable of withstanding a single concentrated load of 200 pounds or a uniform load of 50 pounds per linear foot applied in any direction at any point on the rail without exceeding the design working stress of the materials.

E. Platform Surface: Capable of withstanding a single concentrated 1000 pound load without permanent deformation; or 100 pounds per square foot or 300 pounds on an area of 4 square inches without exceeding the allowable working stress of the material. Platform surface to be designed to withstand all required design loads in accordance with the required codes of the Project.

F. Platform Guard/Handrail: Capable of withstanding a single concentrated load of 200 pounds or a uniform load of 50 pounds per linear foot applied in any direction at any point on the rail without exceeding the allowable stress of the material.

G. Platform Structural Members: Capable of withstanding a single concentrated load of 1000 pounds at any point on the stair without permanent deformation; or a uniform live loading of 100 pounds per square foot applied in a downward direction to all tread surfaces or a 300 pound load on an area of 4 square inches without exceeding the allowable working stress of the material. Platform structural members shall also be designed to withstand all required design loads in accordance with the required codes of the Project.

1.4 SUBMITTALS

A. Product Data: For metal stairs.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Qualification Data: For qualified professional engineer and testing agency.

D. Welding certificates.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for stairs and railings.

1. Test railings according ASTM E 894 and ASTM E 935.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job sit in good condition and properly protected against damage to finished surfaces.

B. Store material in a location and manner to avoid damage. Do not stack components. Lay our components on firm foundation material such that bending can not occur.

C. Store metal components in a clean dry location, away from uncured concrete, cement, or masonry products, acids, oxidizers, rain water, or any other chemical or substance that might damage the material or finish.

D. Plan work and storage locations to keep on site handling to a minimum.

E. Exercise particular care to avoid damage to material finishes or unprotected surfaces when handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Lapeyre Stair, Inc.; Pre-Engineered Stair System with Crossover Platform (Basis-of-Design).

2.2 MATERIALS

A. Landings, Treads and Foot Castings: Aluminum alloy F356F

B. Central Stringer: Aluminum Alloy 6063-T52.

C. Miscellaneous Stair Assembly Components:

1. Rubber Spine: Hollow neoprene strip.
2. Bolts: Landing to Structure, ASTM A307, 1/2" diameter.
3. Nuts: ASTM A563.
4. Washers: ASTM F844.

D. Platform: Aluminum alloy F356F, 3/16 inch diamond safety plate.

E. Handrails: 1-1/2 by 1/8 inch tube aluminum alloy 6063-T4.

F. Handrail Clamps: Cast aluminum.

G. Mounting Brackets and Toe Plates: Formed or welded.

H. Accessories: Lapeyre Crossover Bracing Kit (Basis-of-Design).

2.3 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal stairs after assembly.

C. Aluminum Finish: Natural finish.

2.4 FABRICATION

A. General: Fabricate crossover platforms to conform with dimensions, performance, and construction requirements, and in accordance with approved Shop Drawings.

B. Aluminum: Cut, formed, and punched crossover platforms with mounting brackets and toe-plates possibly gas tungsten arc welded and/or gas metal arc welded with bolt-on guard-rails using the specified materials.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate start and installation of crossover platforms with all other related and adjacent work. Installation shall not start until the construction has progressed to the point that weather conditions and remaining construction operations will not damage platform installation.

B. Verify that dimensions are correct and that substrate is in proper condition for platform installation. Do not proceed to install until all necessary corrections have been made.

3.2 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.

C. Install crossover platform with traditional stair or alternating tread stair if applicable, securing with 2 bolts and handrail clamps.

END OF SECTION 055100

SECTION 075750 - COATED ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes coated roofing system.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties.

B. Samples: For each type of required roofing product.

1.3 QUALITY ASSURANCE

A. Manufacturers Qualifications: Provide primary products by a single manufacturer, which has produced this type of product successfully for not less than 20 years.

B. Installer Qualifications: A qualified installer who is approved, authorized, or licensed by roof coating manufacturer for installation of manufacturer's product.

C. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to coated roofing including, but not limited to, the following:

    a. Four representative areas of roofing to inspect and discuss conditions, penetrations, and other preparatory work to be performed.
    b. Review required submittals, both completed and yet to be completed.
    c. Review and finalize construction schedule related to roofing work, and verify availability of materials, equipment and facilities needed to consistently made progress and avoid delays.
    d. Review weather and forecasted weather conditions.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.5 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing work to be performed according to coated roofing manufacturer's written instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. GAF Materials Corporation; TOPCOAT® Seam Free™ Roof System (Basis-of-Design).

a. Topcoat Flashing Grade.
b. Topester Reinforcing Fabric.
c. Topcoat Flashing Grade.
d. Topcoat Membrane Base Coat.
e. Topcoat Membrane Finish Coat.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions under which coated roofing will be applied, with Installer present, for compliance with requirements. Begin installation only after unsatisfactory conditions have been corrected and substrates are dry.

3.2 SURFACE PREPARATION

A. Clean and prepare substrate according to coated roofing manufacturer's written instructions. Provide clean, dust-free, dew-free, and dry substrate for coated roofing application.

B. Remove grease, oil, form-release agents, curing compounds, and other contaminants from substrate.

C. Cover and mask adjoining surfaces not receiving coated roofing to prevent overspray or spillage affecting other construction. Close off roof drains, removing roof-drain plugs when no work is being done or when rain is forecast.

D. Prime substrate as recommended by coated roofing manufacturer.

E. Fill, cover, or tape joints and cracks in substrate that exceed a width of 1/4 inch (6 mm). Remove dust and dirt from joints and cracks before applying coating.

3.3 COATING APPLICATION

A. Apply coating system according to roof coating manufacturer's written instructions.

END OF SECTION 075750