

New Walkway Cover

# Alamance Elementary School

Guilford County Schools

3600 Williams Dairy Road

Greensboro, NC 27406

Commission # 12-33    October 15, 2012

(Revised: December 05, 2012)



**Guilford**  
**County Schools**

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Greensboro, N.C. 27405-7700

Set Number: \_\_\_\_\_

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**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 000115 DRAWINGS ACCOMPANYING THESE SPECIFICATIONS**

General Construction

<u>Sheet:</u>	<u>Title:</u>
A1	PARTIAL SITE PLAN
A2	SECTIONS AND DETAILS
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End of Section

Guilford County Board of Education  
**INSTRUCTIONS TO BIDDERS**

1. CONTRACTOR'S LICENSES. - All applicable state and local licenses will be required.

2. BUILDING PERMITS - Will be the responsibility of the successful contractor.

3. INSURANCE

**a. Workers' Compensation Insurance**

The Contractor will maintain during the life of his contract Workers' Compensation insurance for all of his employees employed at the site of the project, and, in case any work is sub-let, the contractor shall require the sub-contractor similarly to provide Workers' Compensation insurance for all the latter's employees employed at the site of the project, unless such employees are covered by the protection afforded by the contractor.

**b. Public Liability Insurance**

The Contractor will maintain public liability insurance covering his liability for bodily injury and property damage which may arise from his operations, contractual obligations, products and completed operations, as well as operations performed by independent contractors, in not less than the following amounts:

1. A combined single limit (CBL) of \$1,000,000 each occurrence, or
2. A \$1,000,000 limit for Bodily Injury Liability, and \$1,000,000 limit for Property Damage Liability.

**c. Automobile**

The contractor will maintain Automobile Liability Insurance, to include liability coverage, covering all owned, hired, and non-owned vehicles used in conjunction with the contract. The minimum combined single limit will be \$150,000 bodily injury and property damage, \$150,000 uninsured/underinsured motorist, and \$1,000.00 medical payment.

An occurrence form of policy will be required, and the certificate of insurance submitted by the Contractor must be personally signed by a resident licensed agent of each of the companies listed on that form.

**c. Certificate of Insurance**

Each contractor shall furnish the Owner a certificate of insurance showing that the required insurance coverages are carried by the Contractor. The certificate of insurance should show the Guilford County Board of Education, Greensboro, NC, as additional insured, and list the project for which coverage is applicable. All insurance carriers shall be licensed to do business in North Carolina or approved to issue insurance coverage by the Commission of Insurance of North Carolina.

The Certificate of insurance shall include substantially the following provision: The insurance policies to which this certificate refers shall not be altered or canceled until after ten (10) days written notice of such cancellation or alteration has been sent by certified mail to the Guilford County Board of Education, Greensboro, North Carolina.

**d.** The Board of Education reserves the right to reject any carrier of insurance shown in the certificate of insurance by the Contractor on the grounds of poor claim service or financial responsibility.

4. SAFETY - Contractor shall be familiar, and in complete compliance, with OSHA requirements and regulations.

5. EXAMINATION OF CONDITIONS

**a.** Before submitting a bid, each Bidder shall examine the site. He shall familiarize himself with the site conditions and with the specifications. He shall investigate such local conditions as rules and regulations, availability and cost of labor, etc. which may affect the performance of the contract. No allowances will be made for his failure to do so. No consideration will be given at a later time for alleged misunderstanding as to requirements of work, materials to be furnished, or conditions required by nature of the site. Examination of the site shall be after 3:00 p.m. only, and with notification to the school principal. Other times must be arranged by contacting a representative of GCS.

**b.** Items incorrect or obviously omitted from the specifications by oversight or error shall be called to the attention of the Owner's representative, who will send written instructions to all Bidders.

6. QUALIFICATIONS - Bidders must have a successful record of experience in the type of work specified.

Guilford County Board of Education  
**INSTRUCTIONS TO BIDDERS**

7. PAYMENT TO THE CONTRACTOR - Payment will be made in one lump sum thirty (30) days after the work has been successfully completed and every provision of the specifications complied with to the Owner's satisfaction, evidence that all accounts are paid in full and three copies of the warranties and guarantees have been submitted to Owner.
8. FINAL CLEANING
  - a. The contractor shall at all times keep the premises free from accumulation of waste materials
  - b. The Contractor shall be responsible for removing all the construction debris from the premises and disposing of the same at a dump location of his choice
  - c. Restore any grassy areas and replace any sidewalks or pavement damaged during construction.
9. THE BIDDER hereby declares that the only person or persons interested in the proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a Bid or Proposal; and that is in all respects fair and in good faith without collusion or fraud. The Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the specifications for the work and has satisfied himself relative to the work to be performed.
10. THE GUILFORD COUNTY BOARD OF EDUCATION reserves the right to reject any or all bids and to waive any informalities or technicalities. All projects are awarded contingent on the availability of funds.
11. TAXES – PLEASE INCLUDE taxes in bid amount. TAX should be computed on the cost of your MATERIALS ONLY at the current tax rate (7.75% as of 10-01-09). Taxes will be added to purchase orders as a separate item.
12. DEFAULT AND PERFORMANCE BOND - In case of default by the contractor, Guilford County Schools (GCS) may procure the articles or services from other sources and hold the contractor responsible for any excess cost occasioned thereby. GCS reserves the right to require performance bond or other acceptable alternative guarantees from successful bidder without expense to GCS.
13. SUBCONTRACTOR- Subcontractors may not be used unless receiving prior written approval from Guilford County Schools.
14. DISPUTE RESOLUTION -All Construction and Repair projects in the amount of \$15,000 or more are subject to the requirements of NCGS 143-128(f1). A complete copy of the Guilford County Schools Dispute Resolution Procedure is available for review in the Purchasing Department, 501 W. Washington St., Greensboro NC 27401.
15. SPECIAL REQUIREMENTS REGARDING CRIMINAL BACKGROUND
  - A. Criminal Background Investigations of individuals working on school property (sites occupied with students and sites not occupied with students).
  - B. At a minimum, the contractor shall obtain a complete North Carolina statewide criminal background investigation for all employees and subcontractors who will work on this project, covering a period for the last seven (7) years. In the event that the contractor or subcontractor is from out of state, the criminal background investigation shall be broadened to include their home state, as well as the state of North Carolina as outlined above. The company providing such information must be recognized by local law enforcement agency as qualified to do so. All costs associated with these criminal background checks is the responsibility of the contractor.

Each prime contractor will be responsible for all their employees and all of their subcontractors working under them.

Guilford County Board of Education  
**INSTRUCTIONS TO BIDDERS**

On sites that are occupied with students and staff, a daily sign-in sheet will be presented by each prime contractor to the principal and SRO – Student Resource Officer by 9:00 a.m. each morning. If there is no SRO – provide to the Principal. This list will contain the name of each person on site and the company they work for.

- C. Any individual with the following criminal convictions or pending charges will **NOT** be permitted on any school project or property.
  - 1. Child Molestation or Abuse or indecent liberties with a child;
  - 2. Rape;
  - 3. Any Sexually Oriented Crime;
  - 4. Drugs: Felony use, possession or distribution;.
  - 5. Murder, manslaughter or other death related charge; or
  - 6. Assault with a deadly weapon or assault with intent to kill.
- D. Any individual with a prior conviction or pending charges contained in the aforementioned list, shall be banned (not allowed) from any school project or property.
- E. Each person on site must wear a plastic laminated identification badge that identifies the name of the company and the person's name. These badges are to be computer produced at a font large enough to be clearly visible. All costs associated with these criminal background checks is the responsibility of the contractor. The ID badge template will be made available to the successful prime contractors at the Pre-Construction Meeting.
- F. Guilford County Schools, may, at any time, request verification of criminal background investigation for any employee or subcontractor on school property.



**GUILFORD COUNTY SCHOOLS**  
**ADDITIONAL INSTRUCTIONS & GENERAL REQUIREMENTS FOR INFORMAL**  
**CONSTRUCTION**

**REQUIRED WORK SCHEDULE**

**Prior to beginning work, the contractor is to provide a schedule that defines the construction effort.** Work is to be completed as per the approved project schedule, unless revised by the Guilford County Schools (GCS) Maintenance or Facilities Department. Work may begin when a **Notice to Proceed** is given. The NTP may be a phone call from a GCS Maintenance or Facilities Department Representative, with a verbal PO number, followed by a written notice to proceed and/or actual PO.

**PERMITS**

The Contractor is responsible for obtaining all required permits and for having and insuring all applicable certification requirements are met prior to the start of the work. The cost of any required permits is also the responsibility of the Contractor.

**ASBESTOS:** The Contractor is advised that no representation is made by the Owner that the work site is completely free of asbestos-containing materials. Reasonable steps have been taken by the Owner to identify any such asbestos-containing materials; however, the Contractor is hereby notified that if any suspect materials are encountered, the following steps are to be taken:

- Stop work immediately.
- Rope off the work site to prevent anyone from contacting suspect materials.
- Contact the Owner and describe what was found.
- Comply with requirements of 29 CFR Part 1926 Occupational Safety and Health Standards for the Construction Industry.

**SITE CONDITIONS, UNDERGROUND UTILITIES**

It is the responsibility of the Contractor to become familiar with the specific conditions at the worksite. The Contractor is responsible for locating and marking all public and private underground utilities. Once marked, it is the Contractor's responsibility to maintain markings for reference. If the Contractor damages any underground utility, the Contractor must arrange for repair of the damage at their cost.

The Contractor must also isolate the work site as much as possible from students/public by means of ropes, fencing, barricades, etc.

**DIGGING:** All digging shall be done Monday-Friday from the hours of 7:00 am until 4:00pm UNLESS other times are approved by project manager.

**SOIL DISRUPTION**

1. The Contractor will ensure that all holes are refilled and compacted (minimum 95%) in 6" intervals and the area disrupted by his effort is leveled and re-seeded.
2. The Contractor shall avoid driving across sidewalks, grass or other non-vehicular areas. Where vehicular access cannot be avoided, the Contractor shall be responsible for repairing and reseeding these areas to the Owner's satisfaction. The Contractor shall notify the school principal or GCS representative prior to crossing non-vehicular areas.

## **TRASH**

All trash, construction debris, etc, should be removed from the site daily or stored safely in a container belonging to the contractor.

## **DAMAGES**

**Damages.** The contractor is responsible for repairing all damages his organization causes to any GCS property during the performance of the work.

## **CHANGE ORDERS**

When unforeseen conditions require modifications to the Contract, the Contractor must propose changes by submitting a request for a change to the Owner (GCS). This request must include the following:

1. A statement outlining the reasons for the change and the effect of the change on the contract total cost and time for completion. The request is to provide a detailed description of the proposed change.
2. A list of required products, quantities needed, and unit cost, with the total amount of purchases to be made.
3. Applicable taxes, delivery charges, equipment rental, and amounts of trade discounts

The GCS representative must accept the proposed changes and give a notice to proceed to the Contractor prior to any Change Order work being performed. This notice may be either verbal or written; **HOWEVER, verbal change orders are only authorized for amounts of \$500.00 or less.**

## **PROJECT DELAYS**

**The Contractor will be responsible for contacting the GCS PM when a delay is anticipated.** The PM will evaluate the cause and make a recommendation to his/her supervisor if the delay justifies an extension of time in completing the project. If the delay is deemed warranted and an extension is granted, the PM shall notify the Contractor in writing.

## **PROJECT DEFAULT**

If the Contractor defaults or neglects to carry out the work in accordance with the project specifications or fails to provide adequate manpower, material, or resources within 48 hours of written notice of default by Owner, GCS may correct such deficiencies, or provide adequate manpower, material, and resources (including supplementing the Contractor's workforce). In such cases, an appropriate change order shall be issued deducting from current or future payments due the Contractor to include the actual cost of correcting such deficiencies, or providing adequate manpower, material, and resources including all other expenses GCS incurs. GCS may withhold payments to the Contractor until the cost of correction is determined. If payments due to the Contractor are not sufficient to cover such amounts, the Contractor's surety shall pay the difference to GCS.

## **LIQUIDATED DAMAGES**

**If the Contractor fails to meet the project completion date, liquidated damages at the rate of \$150.00 per day per unit will apply for each day beyond the original/revised completion date. When Liquidated Damages apply, the amount will first be deducted from the amount billed by the Contractor.**

## **INSPECTIONS**

The contractor is to notify the GCS Maintenance or Facilities Department project manager of all inspection dates and times involving the services of all certifying agencies.

The contractor shall determine, within the specified contract period, when work is completed and ready for owner's acceptance inspection. At the acceptance inspection, the GCS representative will, if warranted, record a list of discrepancies that will be used to identify work that is incomplete or not in accordance with the specifications. **This list of discrepancies is to be known as the punch list.** At conclusion of the final inspection, the owner (**Guilford County Schools**) shall make the following determination:

- That the project is complete and accepted.
- That the project is accepted subject to resolution of the punch list. Correction of work not in accordance with specifications or determined to be unacceptable shall begin within 48 hours after receipt of notice from the owner or inspector and shall be pursued to completion.
- That the project is not accepted and another date for a final inspection will be identified.

## **WORKSITE CONDUCT**

The contractor shall at all times obey the rules and restrictions of the Guilford County Board of Education pertaining to conduct while on school property. **NO TOBACCO PRODUCTS, ALCOHOLIC BEVERAGES OR WEAPONS ON SCHOOL PROPERTY.**

Due to the commitment to a drug and alcohol free workplace, it is also the policy of the Guilford County Schools that the work environment shall be free of the presence of alcoholic beverages or unlawful controlled substances and that contractor's employees shall perform their job assignment(s) safely, efficiently, and without the adverse influence of alcohol or controlled substances. Therefore, the school system prohibits all employees from possessing, using, manufacturing, dispensing, selling, distributing, or being under the influence of illegal drugs and from the use, sale, distribution or possession of drug paraphernalia. All employees are prohibited from unlawfully possessing, using, manufacturing, dispensing, selling, distributing, or being under the influence of alcohol.

## **SPECIAL REQUIREMENT**

When on GCS property, the contractor and all persons performing work for him shall wear some form of identification showing the company name or logo, either by identification badge or by clothing (shirts, uniforms, hats) with the company name or logo.

**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 002113 INSTRUCTIONS TO BIDDERS**

1. **FINAL TIME FOR RECEIVING PROPOSALS:**  
2:00 P.M. local time, on Wednesday, December 19, 2012.
2. **PLACE FOR RECEIVING PROPOSALS:**  
Guilford County Schools Purchasing Department, 501 West Washington Street, Greensboro, NC 27401.
3. **PLACE FOR OPENING PROPOSALS:**  
Guilford County Schools Purchasing Department, 501 West Washington Street, Greensboro, NC 27401.
4. **PROPOSALS RECEIVED BEFORE TIME OF OPENING:**  
Will remain unopened until time for receiving bids.
5. **PROPOSALS RECEIVED AFTER TIME FOR OPENING:**  
Will not be accepted.
6. **OPENING OF PROPOSALS:**  
Privately opened.  
Tabulations will be sent to all bidders.
7. **EXAMINATION OF DRAWINGS AND DOCUMENTS:**  
Should a bidder find discrepancies in, or omissions from, the drawings or documents, or should he be in doubt as to their meaning, he should at once notify the Architect, who will send written instructions to all bidders. Neither the Owner nor the Architect will be responsible for any oral instructions.
8. **EXAMINATION OF THE SITE:**  
Before submitting a proposal, each bidder should visit the site of the work, fully inform himself as to all existing conditions and limitations, and shall include in the proposal a sum to cover all items included in the contract.
9. **PREBID MEETING:**  
A MANDATORY prebid meeting will be held at the site of the work at **10:00 AM local time, on Wednesday, December 12, 2012.** Attendees will assemble and check in at the office prior to the meeting.
10. **QUESTIONS AND CLARIFICATIONS:**  
Bidders will have until **5:00 PM local time, on Friday, December 14, 2012** to submit questions to the Guilford County Schools Purchasing Officer in charge of the project for clarification and inclusion in a project addendum to be issued to all bidders.
11. **ADDENDA:**  
Any addenda issued and received during the time of bidding shall be included and acknowledged in the proposal and in closing a contract, they will become a part thereof.
12. **ACCEPTANCE OR REJECTION OF PROPOSALS:**
  - A. The competency and responsibility of bidders and their proposed subcontractors will be considered in making the award. The Owner does not obligate himself to accept the lowest or any other bid.
  - B. The Owner reserves the right to hold proposals for 30 days before award or rejection, and to reject any or all bids.
13. **PAYMENTS:**  
Refer to the GCS Instructions to Bidders for payment terms.

**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 002113 INSTRUCTIONS TO BIDDERS (CONTINUED)**

**14. FIRE INSURANCE:**

As a condition precedent to effectuation of the contract, furnish certificate of coverage of fire insurance for all the work performed by this contract.

**15. TIME FOR COMPLETION:**

- A. The work included under this contract to be substantially complete no later than **April 15, 2012.**
- B. If the Contractor is delayed at anytime in the progress of his work by changes ordered in the work; abnormal weather conditions; or any causes beyond the Contractor's control or any other causes deemed justifiable by the Architect, then the contract time shall be reasonably extended in a written Change Order from the Architect.
- C. The Contractor is to notify the Architect within one day of any delays caused by conditions beyond his control. A written report shall be submitted with the Contractor's application for payment each month listing all requests for contract time extensions for that month. No extensions in time will be allowed if not handled in this manner.

**16. USE OF SITE:**

- A. The Contractor will have access and control of the area of work for construction purposes during normal business hours Monday through Friday when classes are not in session, and on weekends and holidays. Access is possible at other times but must be approved by the site administrator and the Guilford County Schools Facilities Department. Owner must have use of the facility throughout the construction period. Utilities will be provided by the Owner and must be kept in operation during business hours.
- B. Daily work hours are normally limited to the hours between 7:00 AM and 6:00 PM, Monday through Friday, work hours other than these times should be cleared in advance with the Owner's Representative. When the school is in session, work hours will be limited to daytime hours after 3:00 PM, nights, holidays, and weekends unless prior approval is obtained from the school principal. Weekend work and extended work day hours may be permissible with written permission of the Owner. The use of generators, mechanical equipment, and other work items generating noise are to be limited to times outside normal school hours, unless approved by the Owner.

**17. PREPARATION OF PROPOSALS:**

To be entitled to consideration, proposals must be made in accordance with the following instructions:

- A. Proposals shall be made upon the proposal form provided by the Owner, and all blank spaces in the forms shall be filled; numbers shall be stated both in writing and in figures; the signature shall be long hand; and the completed forms shall be without interlineation, alteration, or erasure.
- B. Proposals shall not contain any recapitulation of the work to be done. No oral, telegraphic, or telephonic proposals or modifications will be considered.

**18. MINORITY AND WOMEN OWNED BUSINESS (MWBE) PROGRAM:**

Guilford County Schools Board of Education promotes full and equal access to business opportunities with Guilford County Schools (GCS). Minority and women owned businesses as well as other responsible vendors shall have a fair and reasonable opportunity to participate in GCS business opportunities.

Prime suppliers (i.e., those who deal directly with GCS) should support GCS MWBE Program by making an effort to engage minority and women owned businesses as subcontractors for goods and services to the extent available. GCS has a goal of 12.46% participation. The proposal should address efforts to meet the goal. If there are additional questions, please contact Tammie Hall, at 336-335-3297 or email hallt6@gcsnc.com.

**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 002113 INSTRUCTIONS TO BIDDERS (CONTINUED)**

**19. PROPOSALS:**

Proposals may be transmitted to the Owner by either of the following methods:

- A. Hand Delivery:  
Address to Owner and deliver enclosed in a sealed opaque envelope marked as follows:

**"New Walkway Cover  
Alamance Elementary School  
Guilford County Schools  
3600 Williams Dairy Road  
Greensboro, North Carolina 27406"**

Include North Carolina Contractor's license on envelope.

End of Section

# GUILFORD COUNTY SCHOOLS

## 2012-2013 Traditional Calendar

**AUGUST 12**

MON	TUE	WED	THU	FRI
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
☐	☐	☒	☒	☒
27	28	29	30	31

**SEPTEMBER 12**

MON	TUE	WED	THU	FRI
3	4	5	6	7
▲	10	11	12	13
17	18	19	20	21
24	25	26	27	28
			●	

**OCTOBER 12**

MON	TUE	WED	THU	FRI
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30	31		
	GP46	☒		

**NOVEMBER 12**

MON	TUE	WED	THU	FRI
			1	2
5	6	7	8	9
	☒			
12	13	14	15	16
▲				
19	20	21	22	23
		○	▲	▲
26	27	28	29	30

**DECEMBER 12**

MON	TUE	WED	THU	FRI
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28
▲	▲	▲	○	○
31				
○				

**JANUARY 13**

MON	TUE	WED	THU	FRI
	1	2	3	4
	▲	☐ I-1		
7	8	9	10	11
14	15	16	17	18
				GP44
21	22	23	24	25
▲	☐ I-2			
28	29	30	31	

**FEBRUARY 13**

MON	TUE	WED	THU	FRI
				1
4	5	6	7	8
11	12	13	14	15
			●	
18	19	20	21	22
☐ I-3				
25	26	27	28	

**MARCH 13**

MON	TUE	WED	THU	FRI
				1
4	5	6	7	8
11	12	13	14	15
		●		
18	19	20	21	22
25	26	27	28	29
			GP46	▲

**APRIL 13**

MON	TUE	WED	THU	FRI
1	2	3	4	5
○	○	○ I-9	○ I-8	○ I-7
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30			

**MAY 13**

MON	TUE	WED	THU	FRI
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31
▲				

**JUNE 13**

MON	TUE	WED	THU	FRI
3	4	5	6	7
				GP44
10	11	12	13	14
☒ I-4	☐ I-5	☐ I-6	☐ I-10	○ I-11
17	18	19	20	21
24	25	26	27	28

☐	Workday* (8)	▲	Holiday (11)
○	Vacation (10)	●	Early release day for students, training for staff (4)
■	First/Last Day for Students		
☒	Mandated Workday (6)		
<p>! Will become student days if other days are missed due to inclement weather. Makeup days will be taken in the order indicated.</p>			
<p>There are 180 Student Days in the Guilford County Schools Calendar</p>			
<p>* Annual leave may be taken</p>			

**Guilford County Schools**  
**2012-2013 Traditional Academic Calendar**

August 20	Optional Teacher Workday*
August 21	Optional Teacher Workday*
August 22	Mandated Workday
August 23	Mandated Workday
August 24	Mandated Workday
August 27	FIRST DAY OF SCHOOL
September 3	Labor Day Holiday
September 20	Early Release Day for students, training for staff
October 17	Early Release Day for students, training for staff
October 30	First Grading Period Ends (GP 46)
October 31	Mandated Teacher Workday
November 6	Mandated Teacher Workday
November 12	Veterans Day Holiday
November 21	Vacation
November 22, 23	Thanksgiving Holiday
December 24-January 2	WINTER BREAK FOR STUDENTS
December 24-26	Holiday
December 27, 28, 31	Vacation
January 1	Holiday
January 2	Optional Teacher Workday* (I-1)
January 18	Second Grading Period Ends (GP 44)
January 21	Martin Luther King Jr. Holiday
January 22	Optional Teacher Workday* (I-2)
February 14	Early Release Day for students, training for staff
February 18	Optional Teacher Workday* (I-3)
March 13	Early Release Day for students, training for staff
March 28	Third Grading Period Ends (GP 46)
March 29	Holiday
April 1-5	SPRING BREAK FOR STUDENTS
April 1-2	Vacation
April 3-5	Vacation (I-9, I-8, I-7)
May 27	Holiday
June 7	Fourth Grading Period Ends (GP 44)
June 7	LAST DAY FOR STUDENTS
June 10	Mandated Workday (I-4)
June 11	Optional Teacher Workday (I-5)*
June 12	Optional Teacher Workday (I-6)*
June 13	Optional Teacher Workday (I-10)*
June 14	Vacation (I-11)

I days will become student days if other days are missed due to inclement weather.

Makeup days will be taken in the order indicated.

\*Annual leave may be taken on these days.



**AFFIDAVIT-MINORITY PARTICIPATION  
INFORMAL CONSTRUCTION CONTRACTS**

The Guilford County Board of Education is committed to providing equal opportunities for participation in all aspects of the Guilford County Schools contracting and purchasing programs including, but not limited to, participating in procurement contracts for, materials, services, construction and repair work activities, and lease agreements in the Guilford County Schools. The Board of Education actively seeks to identify qualified minority, handicapped, and women-owned business enterprises so as to widen opportunities for participation as providers of goods and services, increase competition and ensure the proper and diligent use of public funds.

**(NOTE: THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL)**

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder. Apparent low bidder shall submit this affidavit even if there is **no** minority participation. Contract shall be awarded upon receipt of affidavit.

**Portion of the Work to be performed by Minority Firms**

\_\_\_\_\_ I do hereby certify that on the  
(Name of Bidder)

\_\_\_\_\_ (Project Name)

Project ID# \_\_\_\_\_ Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the firms listed below.

Attach additional sheets if required

Name and Phone Number	Minority Category	Work Description	Dollar Value

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

**AFFIDAVIT B**  
**Intent to Perform Contract with Own Workforce**

County of \_\_\_\_\_

Affidavit of \_\_\_\_\_  
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the \_\_\_\_\_  
\_\_\_\_\_ contract.  
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

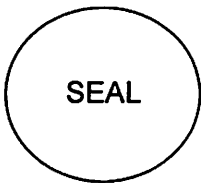
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_



State of North Carolina, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

Form of Proposal  
New Walkway Cover

# Alamance Elementary School

Guilford County Schools  
3600 Williams Dairy Road  
Greensboro, North Carolina 27406

Bidder: \_\_\_\_\_

Date: \_\_\_\_\_

The undersigned, as Bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is / or named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company, or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and the contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be preformed.

The Bidder proposes and agrees if this proposal is accepted to contract with the Guilford County Board of Education (Owner), in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the fabrication and delivery of the project "New Walkway Cover, Alamance Elementary School, Guilford County Schools, 3600 Williams Dairy Road, Greensboro, North Carolina 27406" in full and complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the Owner, with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and other contract documents, for the sum of:

Single-prime contract:

**BASE BID:**

\_\_\_\_\_

**Dollars**        \$ \_\_\_\_\_

A breakdown of this proposal into material and labor costs is as follows:

Labor Cost \$ \_\_\_\_\_ Material Cost \$ \_\_\_\_\_

Sales Tax for Materials \$ \_\_\_\_\_

-----

**TIME FOR COMPLETION:**

The bidder further proposes and agrees hereby to commence work under this contact upon receipt of a purchase order and a written notice to proceed from the Architect, and shall substantially complete all work on or before XXXXXXXXXXXX XX, 2012.

**ADDENDA:**

The following addenda were received and used in computing this bid:

	Date	Initial		Date	Initial
Addendum No. 1:	_____	_____	Addendum No. 4:	_____	_____
Addendum No. 2:	_____	_____	Addendum No. 5:	_____	_____
Addendum No. 3:	_____	_____	Addendum No. 6:	_____	_____

RESPECTIVELY SUBMITTED this \_\_\_\_\_ day of \_\_\_\_\_, 200 \_\_\_\_.

\_\_\_\_\_  
(Name of firm or corporation making bid)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Owner/Partner/President/Vice President)

WITNESS: (Proprietorship/Partnership)

Address: \_\_\_\_\_

By: \_\_\_\_\_

License No. \_\_\_\_\_

Federal ID No. \_\_\_\_\_

ATTEST: (Corporation)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Corp. Secretary or Asst. Secretary Only)

(CORPORATE SEAL)

**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 007200 GENERAL CONDITIONS**

1. The "General Conditions of the Contract for Construction", AIA Document A201, 2007 Edition; Articles 1 thru 14 inclusive are hereby made a part of the contract documents to the same extent as if herein written out in full.
2. Copies of this document may be purchased from the American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20066.
3. Copies of this document are available for inspection in the Architect's office and may be reviewed upon request.
4. Where any article is supplemented under Section 007300, the AIA provisions of such article shall remain in effect and the supplemental provisions shall be considered as added hereto.
5. Where any article is amended, voided, or superceded under Section 007300, the AIA provisions of such article not so specifically amended, voided, or superceded shall remain in effect.

**DIVISION 00. PROCUREMENT AND CONTRACTING REQUIREMENTS**

**SECTION 007300 SUPPLEMENTARY GENERAL CONDITIONS**

**ARTICLE 1:**

The Supplementary General Conditions are to supplement, or amend the "General Conditions of the Contract" and intended to address job specific issues.

**ARTICLE 2. CONTRACTORS LIABILITY INSURANCE:**

Refer to the enclosed "GUILFORD COUNTY BOARD OF EDUCATION INSTRUCTIONS TO BIDDERS" for necessary insurance requirements.

**ARTICLE 3. PROPERTY INSURANCE 11.3:**

Builders risk insurance shall be purchased by the Contractor.

**ARTICLE 4. TIME FOR COMPLETION:**

- A. The Contractor shall commence all work to be performed under this contract upon receipt of a Purchase Order from the Guilford County Schools and shall fully complete all work hereunder no later than **April 15, 2012**.
- B. If the Contractor is delayed at anytime in the progress of his work by changes ordered in the work; abnormal weather conditions; or any causes beyond the Contractor's control or any other causes deemed justifiable by the Architect, then the contract time shall be reasonably extended in a written Change Order from the Architect.
- C. The Contractor is to notify the Architect and the Owner within one day of any delays caused by conditions beyond his control. A written report shall be submitted with the Contractor's application for payment each month listing all requests for contract time extensions for that month. No extensions in time will be allowed if not handled in this manner.

**ARTICLE 5. SPECIFICATION EXPLANATION:**

- A. These specifications are of the abbreviated or "streamlined" type and include incomplete sentences. Omissions of works or phrases such as "the contractor shall", "in conformity therewith", "shall be", "as noted on the drawings", "according to the plans", "a". "the", and "all" are intentional. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" appears on the drawings.
- B. All references to known standard specifications shall mean and intend the latest edition of such specifications.

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 011100 SCOPE OF WORK**

**PART 1 - GENERAL**

1.01 Work covered by the contract documents:

- A. Work under this contract consists of furnishing labor, materials, and equipment necessary to perform the following work, which includes, but is not limited to:
- B. Division 02 Existing Conditions:  
Demolition:
  - 1. Remove and replace existing pressure treated decking boards as necessary to install new canopy columns and concrete footings.
  - 2. Remove sections of existing concrete walkway as noted on the drawings for installation of the new walkway cover footings and storm drainage.
- C. Division 03 Concrete:  
Walkway cover column footings.
- D. Division 07 Caulking & Sealants:  
Caulking and sealants associated with new walkway cover installation.
- E. Division 10 Specialties:  
Walkway coverings.
- F. Division 31 Earthmoving:  
Fine grading, excavation, and fill.
- G. Division 32 Exterior Improvements:  
Seeding for areas disturbed or adjacent areas damaged by the installation of the new work.
- H. Division 33 Utilities:
  - 1. New PVC storm piping and drains.
  - 2. Corrugated drain piping concealed under decking.

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 013323 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES**

**PART 1 - GENERAL**

- 1.01 Section Includes:
- A. Requirements for information to be provided in submittals.
  - B. Submittal procedures for shop drawings, product data, manufacturer's installation data and samples.
- 1.02 Related Requirements in other Sections:
- A. Product options and substitutions (Section 016000).
  - B. Definitions and additional responsibilities of parties (General Conditions).
  - C. Requirements of individual Sections of Specifications.
- 1.03 Shop Drawings:
- A. Shop Drawings are drawings, sketches, diagrams, or other data prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. The use of manufacturer's standard catalog details without modification is prohibited.
  - B. Present in a clear and thorough manner. Title each shop drawing with Project name and number, identify each element of drawings by reference to sheet number and detail.
  - C. Identify field dimensions; show relation to adjacent or critical features of work or products.
  - D. Details shall indicate materials to be used by product identification and their relation to as-built conditions. Show all fasteners including size, length, and spacing. Generic details of the membrane manufacturer may be submitted for information but will not be accepted as shop drawings.
- 1.04 Product Data:
- A. Product Data are illustrations, standard schedules, performance capabilities and charts, instructions, brochures, diagrams and other information furnished to illustrate a material, product, or system for some portion of the Work.
  - B. **Submit only pages which are pertinent;** mark each copy of standard printed data to identify pertinent products, referenced to Specification section and Article number. Show reference standards, and performance characteristics; finishes; dimensions; and required clearances.
  - C. Modify manufacturer's standard drawings and information in order to provide information specifically applicable to the work of this Contract. **Delete information not applicable.**
- 1.05 Samples:
- A. Label each sample to clearly identify material and function, and specific specification section which is applicable.
  - B. Samples shall be in triplicate, one to be retained by the Architect, one to be returned to the Contractor and one to be placed on file in the Contractor's field office for comparison to the materials delivered.
- 1.06 Contractor Review:
- A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.
  - B. Coordinate submittals with requirements of work and of Contract Documents. All submittals shall be transmitted to the Architect/Engineer in ample time to prevent delays in the work. Shop drawings shall be submitted in advance of start of work of this project.
  - C. Sign or initial each sheet of shop drawings and product data, and each sample label to certify compliance with requirements of Contract Documents. Notify Architect in writing at time of submittal, of any deviations from requirements of Contract Documents.
  - D. Do not fabricate products or begin work which requires submittals until return of submittal with Architect/Engineer acceptance.
- 1.07 Submittal Requirements:
- A. All Shop Drawings, Project Data, and Samples shall be submitted to the Architect/Engineer, through the Contractor, for review.
  - B. All Shop Drawings for the initial submission shall be submitted in the form of one reproducible copy (sepia media) and two prints for each sheet required. After the Architect/Engineer's review, this reproducible will be returned to the Contractor. Should printed catalog data be required with the submission, four copies shall be submitted. Two copies will be retained by



**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 013323 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES (CONTINUED)**

- the Architect who will forward one copy to the Owner, and the remainder will be returned to the Contractor.
- C. Transmit submittals in such sequence to avoid delay in the work or work of other contracts. All such submittals must be accompanied by a transmittal letter indicating:
- PROJECT NUMBER AND TITLE  
VENDOR'S OR MANUFACTURER'S NAME  
LIST OF SHOP DRAWINGS NUMBERS, TITLES & QUANTITIES OF EACH
- D. Provide 4" x 4" blank space on each submittal for Contractor and Architect/Engineer stamps.
- E. Apply Contractor's stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of work and Contract Documents.
- F. Coordinate submittals into logical groupings to facilitate interrelation of the several items.
- G. Number of Submittals Required:
1. Shop Drawings: Submit to the Architect/Engineer one (1) reproducible on mylar film and two (2) bluelines.
  2. Product Data: Submit the number of copies which the Contractor requires, plus two (2) additional copies to the Architect/Engineer, one of which will be forwarded to the Owner.
  3. Samples: Submit the number stated in each specification section but in no case less than two (2) samples shall be submitted.
- H. Submittals Shall Contain:
1. The date of submission and the dates of any previous submissions.
  2. The Project title and number.
  3. Contract identification, including names of Contractor, Supplier and Manufacturer.
  4. Identification of the product, with the Specification section number.
  5. Field dimensions, clearly identified as such.
  6. Relation to adjacent or critical features of the work or materials.
  7. Applicable standards, such as ASTM or Federal Specification numbers.
  8. Identification of deviations from Contract Documents.
  9. Identification of revisions on resubmittals.
  10. Contractor's stamp "For Approval Only". All submittals not so stamped will not be accepted for review.
  11. Contractor's stamp certifying review of submittal by the Contractor.
- 1.08 Resubmittals:
- A. When corrections are necessary and a resubmittal is not requested, two copies of corrected "field use" drawings will be forwarded to the Architect/Engineer for file purposes. Where resubmittal is requested, the Contractor shall make all corrections required by the Architect/Engineer and shall resubmit accordingly.
- B. Make resubmittals under procedures specified for initial submittals; identify changes made since previous submittal.
- C. Shop Drawings and Product Data:
1. Revise initial drawings or data, and resubmit as specified for the initial submittal. Clearly indicate any changes which have been made other than those requested by the Architect/Engineer.
  2. When stamped for construction, submit two (2) reproducibles to the Architect/Engineer.
- D. Samples: Submit new samples, as required, for initial submittal.
- 1.09 Architect/Engineer Duties:
- A. Review submittals with reasonable promptness and in accordance with schedule. Transmittal turnaround time shall be approximately seven (7) days after receipt by Architect/Engineer.
- B. Affix stamp and initials or signature, and indicate requirements for resubmittal, or approval of submittal.
- C. Return submittals to Contractor for distribution or for re-submission.

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 013323 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES (CONTINUED)**

1.10 Owner's Duties:

- A. Approval or acceptance of Shop Drawings, Product Data or Samples will not preclude the rejection of the completed Work. After approval, no change in brand or make will be permitted unless agreed to in writing by the Owner. The Owner reserves the right to require submission of examples of any materials whether or not required by the Contract Documents.
- B. The Owner's review of Shop Drawings, Product Data or Samples shall not relieve the Contractor from its responsibility for complying with the Drawings and Specifications, for the accuracy of the Work, nor for the furnishing of all materials required for the Work.

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 014300 QUALITY CONTROL**

**PART 1 - GENERAL**

- 1.01 The General Contractor shall maintain quality control over products, services, site conditions, and workmanship, to produce work of specified quality.
- 1.02 The General Contractor shall arrange with material and equipment manufacturers and representatives, if required or requested by the Architect/Engineer, to provide qualified personnel to instruct installers, the Owner's maintenance personnel, and any other parties designated by the Owner on the proper handling, installation, and maintenance of materials and equipment used on this project.
- 1.03 Contractor shall provide a complete set of Drawings, shop drawings, and Specifications at a designated location on the project at all times for the use of all parties.
- 1.04 Telephone:
- A. The Contractor shall provide at this expense, a job telephone, mobile telephone, cell telephone, or pager for project communications for the duration of the contract.
  - B. Local calls shall be paid by the General Contractor, toll calls shall be paid by the party making the call.
- 1.05 Emergency Call List:  
The Contractor shall supply the Owner with an Emergency Call List of the Contractor's Supervision responsible for contacting Contractor's personnel in emergencies. The Contractor shall furnish and maintain pagers for the Contractor's Supervision. The Contractor shall be responsible for designating its supervision which will carry the pagers.
- 1.06 PROGRESS SCHEDULE:
- A. The Contractor shall prepare and deliver to the Owner a Progress Schedule satisfactory to the Owner covering all Work on the Project within twenty (20) days after a written Notice to Proceed or of the Contract Date. The Progress Schedule shall describe, in written form, the general step-by-step procedure of Work.
  - B. The Progress Schedule shall show the date when the operation of each Specification Section is to begin and is to be completed and the dollar value to be completed each month. Each Progress Schedule, after the first submission, shall incorporate a progress graph comparing the percent of the total work actually completed by the Contractor against that anticipated by the Progress Schedule. The Progress Schedule shall be updated bimonthly unless the Owner requires more frequent revision, in CPM format.
  - C. If the Contractor at any time knows or has reason to believe that the delivery of any item of material or equipment or the shortage of qualified labor or delays caused by others or the occurrence of any other difficulty may cause a delay in carrying out the approved order of Work of the Progress Schedule, the Contractor shall notify the Architect in writing within three (3) days of acquiring such knowledge, but in any event, within three (3) calendar days of the commencement of the delay.
- 1.07 Work found to be in violation of the specifications, or not in conformance with acceptable construction practices, shall be subject to rejection including complete removal and replacement with new material at the Contractor's expense.
- 1.08 Discrepancies:  
If during the performance of the Work, the Contractor discovers errors or discrepancies in the Drawings or Specifications, then the Contractor shall promptly bring these to the attention of the Architect/Engineer in writing which shall promptly reconcile such errors or discrepancies. The Owner will not be liable for any costs incurred by the Contractor due to such errors or discrepancies if the Contractor proceeds with the Work in question without the written approval of the Architect/Engineer.
- 1.09 Pre-construction, progress, and coordination Meetings:
- A. Pre-construction conference:  
Prior to commencement of construction, a pre-construction conference shall be scheduled at the site by the Architect and the Owner. The following parties shall be represented: General Contractor and his Job Superintendent, Owner's Representative, major Sub-Contractors, and the Project Architect/Engineers.
  - B. Construction progress and coordination meetings:
    - 1. Frequency:  
At a maximum, bi-weekly progress and coordination meetings are to be

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 014300 QUALITY CONTROL (CONTINUED)**

- 2. scheduled and held at the project site.  
Attendees:  
The following parties shall be represented at all project meetings:  
General Contractor and his Job Superintendent, Owner's Representatives,  
subcontractors, manufacturers, suppliers, Project Designers, and other  
concerned parties.
- 3. Minutes:  
The Architect shall record significant discussions and agreements achieved.  
Distribute the meeting minutes to everyone concerned, including the project  
designers and the Owner's Representative within 2 days of the meeting.  
Transmission via email in PDF format will be acceptable.

**PART 2 - PRODUCTS**                      Not Used.

**PART 3 - EXECUTION**                      Not Used.

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 015000 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

**PART 1 - GENERAL**

- 1.01 Utilities/Equipment:
- A. Use of existing utilities, power and/or water will be furnished by the Owner for his work. Necessary connections to be by the Contractor.
  - B. Should usage become excessive, as determined solely by the Owner's representative, the Contractor shall pay City rates for the utility usage.
- 1.02 Ventilation:  
Provide, as required, facilities to maintain specific storage conditions as described within this specification and as recommended by materials manufacturers for use in construction.
- 1.03 Sanitary Facilities:  
The Contractor shall provide and maintain adequate sanitary temporary toilets, located where directed for accommodations of all persons engaged on the work. Toilets shall be equipped with temporary water closets.
- 1.04 Construction Aids:
- A. Contractor shall provide power lifts, scaffolding and ladders for access to high work areas at all times during construction. Scaffolding and ladders shall meet all OSHA safety requirements. Contractor shall provide ladders for access to all adjacent work areas. Existing facilities of the Owner outside the area of construction may not be used for storage during construction.
  - B. Construction cranes shall be permitted on site only at times approved by the facility manager.
- 1.05 Use of Site:
- A. The Contractor shall be permitted access to the facility during the school year in the afternoon and evenings after class, weekends, holidays, teacher work days, summer break, and other times as allowed by the school principal until the project completion date. The Guilford County Schools academic calendar is included in these specifications for reference. Access to other buildings on the site necessary for the completion of his work must be approved by the facility manager.
  - B. The Owner should be advised at least 24 hours prior to commencement of any work which could affect facility operations.
  - C. Utilities that effect use of the facility by the Owner are to be kept in operation, accidental damage to existing systems designated to remain operational must be corrected immediately by the Contractor after notification has been given to the Architect and the Owner. If damages are not corrected in a timely manner, the Owner reserves the right to make the necessary repairs and deduct this expense for the contract amount.
- 1.06 Cleaning During Construction:
- A. The Contractor shall at all times, maintain the Owner's premises, property, and the Project site in a neat and orderly condition, free from accumulations of waste materials and rubbish during entire Project period. During the execution of the Work, adjoining areas shall not be littered or obstructed any more that necessary for the performance of the Work. The Contractor shall have the responsibility for removing and disposing of all cartons, crates, trash and all flammable waste materials from the Work areas and for complying with all codes and regulations pertaining to the disposal of debris.
  - B. Residue and debris from construction operations shall not be allowed to accumulate and shall be removed from the Site and disposed of daily, unless prior arrangement is made with the Architect/Engineer and the Owner's Representative.
  - C. Project debris and litter shall be disposed of in Contractor's dumpsters. The use of the Owner's trash bins and dumpsters is prohibited.
- 1.07 Project Safety:
- A. It will be the Contractor's responsibility to maintain strict project safety standards and at all times take extreme caution to protect the safety of the public.
  - B. No unattended ladders may be left in place.
  - C. Area around all work must be roped-off with clear, highly visible, warning signs posted.
  - D. Protective measures must be maintained in all areas where work will be occurring that could endanger the safety of the public.
  - E. Scheduled times for deliveries, crane operation, and removal of debris will need to be

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 015000 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS (CONTINUED)**

- coordinated with the local facility managers in order to cause the least amount of disturbance to facility activities.
- 1.08 Project Security:  
The Contractor shall be responsible for scheduling and coordination all work to prevent damage to the existing building by inclement weather, or by unauthorized entry during unoccupied periods and shall, where necessary, to control and prevent such damage or entry, install temporary closures for openings.
- 1.09 Protection of Facilities:
- A. The Contractor shall be responsible for guarding against fires and shall provide suitable and adequate fire extinguishers and first aid kits conveniently located at the Site. Competent operators shall be in attendance at all times any equipment is subject to use. Fire extinguishers shall be minimum of 20 ABC. All extinguishers shall have current inspection tags, current inspection, and shall be visible at all times.
- B. The Contractor is responsible for providing all necessary scaffolding, chutes, canvas tarpaulins, or other measures required to protect the walls, parapets, and other property noted to remain from damage, soiling, staining, etc.
- 1.10 Daily Work Hours:  
Limitations:
- A. Daily work hours are normally limited to the hours between 3:00 PM and 8:00 PM after school, Monday through Friday, work hours other than these times should be cleared in advance with the school and the Owner's representative. Weekend work and extended work day hours may be permissible with written permission of the Owner. Normal 7:00 AM thru 6:00 PM work hours are possible after the end of the school year on June 07, 2012. The use of generators, mechanical equipment, and other work items generating noise are to be limited to times outside normal school hours, unless approved by the Owner.
- B. Contractor shall, at all times, take all reasonable precautions to avoid disturbing the school system students and staff, and shall utilize all reasonable efforts to keep all noise, inconvenience or other disturbance to an absolute minimum.
- C. The Contractor may be asked to suspend work at times that are critical to the Owner's operation of this facility. The Owner will notify the Contractor of upcoming events ahead of time. Claims for contract time extension or costs associated with work suspension will be considered if not declared by the Owner prior to the submission of bids for construction.
- 1.11 Worker Conduct:
- A. If the conduct or performance of any of the Contractor's personnel, Sub-Contractor, material vendor or any other person performing work for the Contractor, or is otherwise on the Owner's property as a result of the Contractor's work, is improper, inappropriate, or is not in strict accordance with the Contract Documents, the Contractor shall remove such persons from the Work.
- B. Personnel wearing clothing with obscene designs or profane language will be asked to change clothes or be required to leave the site.
- C. The use of all obscene language is prohibited.
- D. Contractors personnel are prohibited from having firearms or drugs in their possession while on the Owner's property.
- E. It is the school system's policy that the use of tobacco products while on school property is prohibited.
- 1.12 Worker Identification:  
Contractor's and sub-contractor's personnel are to wear identity badges identifying the company by which they are employed at all times while on the site of the work.

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

**DIVISION 1. GENERAL REQUIREMENTS**

**SECTION 01500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS (CONTINUED)**

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 016000 PRODUCT REQUIREMENTS**

**PART 1 - GENERAL**

- 1.01 Products:
- A. Products include materials, equipment and systems.
  - B. Comply with specifications and referenced standards as minimum requirements.
  - C. Do not use materials and equipment removed from existing structure, except as specifically required or allowed by Contract Documents.
- 1.02 Co-Operation:
- A. The Contractor and all Sub-Contractors shall co-ordinate their work with all adjacent work and shall cooperate with all trades to facilitate general progress of their work.
  - B. It is the responsibility of all the Contractors to keep the Architect and the Owner fully informed of work schedules and to contact the Architect and the Owner at least 24 hours prior to commencement of any phase of work that may affect any of the Owners on site activities.
- 1.03 Workmanship:
- A. Work shall be performed by persons qualified to produce workmanship and quality specified.
  - B. The Job Foreman shall provide full-time supervision. Job Foreman must speak and communicate in English. At no time shall mechanics and laborers be left on-site without supervision of the Job Foreman without notifying the Architect/Engineer.
  - C. The Contractor shall appoint a suitably qualified and competent Superintendent/Project Manager to supervise all of the Work on site. Where the extent of the Work is such that a full time Superintendent/Project Manager is not justified, the Contractor's Foreman is to be appointed to oversee the Work of the others, attend Owner's meetings and to be the Contractor's representative on site for the purpose of making on-site decisions.
- 1.04 Personnel:
- A. If the conduct or performance of any Subcontractor, material-vendor or any other person or entity performing Work under a contract or agreement with the Contractor is improper or is not in strict accordance with the Contract Documents, the Contractor shall terminate the contract or agreement of such Subcontractor, material-vendor, person or entity and remove it from the Work. The Contractor shall have the responsibility of ensuring that a termination provision setting for the foregoing agreement is included in each contract, purchase order, Subcontract or service agreement into which it enters with respect to the Work.
  - B. If the conduct or performance of any of the Contractor's personnel is improper or is not in strict accordance with the Contract Documents, the Contractor shall remove such persons from the Work.
- 1.05 Materials:
- A. All materials shall be new and of the quality specified. Workmanship shall be of the highest caliber of the particular trade involved. Also, except as exceeded or qualified by the Specifications, workmanship shall be as stipulated in written standards of recognized organizations of institutes of the respective trades.
  - B. Should the Specifications and Drawings fail to particularly describe the material or kind of goods to be used in any place, then it shall be the duty of the Contractor to make inquiry of the Architect/Engineer for what is best suited. The material that would normally be used in this place to produce first quality finished Work shall be considered a part of the Contract.
  - C. Materials as required by this Contract shall be provided by one manufacturer for each item unless specified otherwise or unless exception is made by the Architect/Engineer.
  - D. Materials Containing Asbestos:  
No materials containing asbestos are to be used on this project. If the Contractor encounters any such materials other than what is noted on the drawings or in the specifications for removal, or if any such materials are submitted for approval, he should at once contact the Architect who will authorize removal or replacement.
- 1.06 Manufacturer's Instructions:  
Work shall be performed in accordance with the Material Manufacturer's specifications or as modified by Contract Documents. Conflicts between these specifications and the Materials



**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 016000 PRODUCT REQUIREMENTS (CONTINUED)**

- Manufacturer's specifications shall be brought to the attention of the Architect/Engineer prior to beginning construction. Work as relates to conflict shall not proceed until conflicts are satisfactorily resolved by Architect/Engineer.
- 1.07 Transportation and Handling:
- A. Transport products by methods to avoid product damage. Deliver all materials with Manufacturer's labels intact and legible.
  - B. Provide equipment and personnel to handle products by methods to prevent damage.
  - C. Timing of deliveries of materials to the site to be coordinated with the Owner.
- 1.08 Storage and Protection:
- A. Store any material susceptible to water damage in clean, dry, weather tight condition in a manner to protect against loss, damage, and wetting. On site storage of materials to be coordinated with the Owner's representative. Wet materials shall be marked, rejected for installation, and removed from the Site.
  - B. Materials subject to moisture intrusion and damage shall be stored on clean, dry, and raised platforms so as to prevent wetting or moisture absorption and yet provide sufficient ventilation to prevent condensation. These materials shall be covered so as to be completely weathertight. Factory-applied wrapping shall be unacceptable as the sole means of protection.
  - C. Any materials which when subject to moisture intrusion may have a detrimental effect on the installation of the roofing system, shall be stored as indicated Item 1.07B.
  - D. Materials that are damaged in any way or indicate moisture content above equilibrium shall be rejected as unacceptable.
  - E. Contractor shall employ all means possible to protect the remaining Owner's Facilities from water intrusion. All materials used in the protection of the facilities shall be approved roofing membrane materials. The use of Visqueen, duct tape, or other similar materials by the Contractor is not acceptable for temporary protection.
- 1.09 Product Options:
- Contractor Product Selection:
- A. Products specified only by referenced standard: Any product meeting that standard.
  - B. Products specified by naming several manufacturers: Products of any named manufacturer meeting specifications.
  - C. Products specified by naming one or more manufacturers and "or as approved"; Submit a request for substitution in accordance with Item 1.10 of this Section.
- 1.10 Substitutions:
- A. After award of the contract and prior to commencing work, the Architect/Engineer will consider requests from the Contractor for substitutions. Substitutions will then be considered only when a product becomes unavailable due to no fault of the Contractor.
  - B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
  - C. A substitution request constitutes a representation that the Contractor:
    - 1. Has investigated the proposed product and determined that it meets or exceeds, in all respects, specified product.
    - 2. Shall provide the same warranty for substitution as for specified product.
    - 3. Shall coordinate installation and make other changes which may be required for work to be complete in all respects.
    - 4. Waives claims for additional costs which may consequently become apparent.
  - D. Substitutions will not be considered when they are indicated or implied on Shop Drawings or Product Data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
  - E. Samples of proposed substitutions shall be submitted with the request for substitution. Shop Drawings will not be considered for review on materials which have not been completely checked and stamped by the Contractor and, if substitutions, have not been previously submitted as called for in Section 013323.
  - F. The Architect/Engineer will determine acceptability of proposed substitution and will notify the Contractor of acceptance or rejection in writing within a reasonable time.

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 016000 PRODUCT REQUIREMENTS (CONTINUED)**

**PART 2 - PRODUCTS**            Not Used.

**PART 3 - EXECUTION**        Not Used.

End of Section

**DIVISION 01. GENERAL REQUIREMENTS**

**SECTION 017000 EXECUTION AND CONTRACT CLOSEOUT**

**PART 1 - GENERAL**

- 1.01 Closeout Procedures:
- A. A final inspection shall be conducted at the completion of the project at a time and date acceptable to the Architect, Owner, and Contractor. The final inspection shall be attended by the General Contractor, Owner's Representative, the Architect, Consulting Engineer, primary Sub-Contractors, and other designated persons.
  - B. The results of the inspection conducted by these parties, shall be recorded by the Architect. Items found to be incomplete or not in accordance with the contract documents shall be noted and a written punchlist forwarded to the Contractor for remedial action. The Owner shall also receive a copy of the punchlist.
  - C. Contractor shall remedy any and all deficiencies prior to final acceptance by the Architect.
- 1.02 Final Cleanup:  
Remove waste and surplus materials, rubbish, and construction facilities from the site.
- 1.03 Closeout Documentation:
- A. Project Record Documents:
    - 1. At termination of work, the Contractor shall submit one set of record drawings for approval by the Architect and submission to the Owner at the completion of the project.
    - 2. These drawings shall note the location of capped utilities, active utilities encountered during demolition in the area of work, or other such information which could be of use during the construction of the future elementary school to be located at this site.
    - 3. Submit "as built" documents with letter of transmittal indicating date, project number, Contractor's name and address, list of documents, and signature of Contractor. "As-built" documents must be submitted prior to Owner releasing final payment for project.
  - B. Guaranties/Warranties:
    - 1. Provide copies of all contractor's and manufacturer's guaranties and warranties requested properly executed in triplicate.
    - 2. Guaranties and warranties shall state name of project, location, name of Owner, name of Applicator, and date of substantial completion and final acceptance. Date of substantial completion and final acceptance will be as determined by the Architect for the entire project.
  - C. Contractor's Final Application and Certificate for Payment (AIA Document G702) or approved equivalent in triplicate, properly executed and notarized.
  - E. Contractor's Affidavit of Release of Liens (AIA Document G706A) in triplicate.
  - F. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706) in triplicate.
  - G. Consent of Surety to Final Payment (AIA Document G707) to be submitted if performance bond was required, in triplicate.

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

End of Section

**DIVISION 02. SITE WORK**

**SECTION 024100 DEMOLITION**

**PART 1 - GENERAL**

- 1.01 Section Includes:  
Work of this Section includes demolition and removal of all materials shown on Drawings and as specified herein within boundaries of work.
1. Demolish and remove in its entirety the following items:
    - A. Existing pressure treated wood decking boards to be removed and replaced as necessary to install new walkway cover columns and footings.
    - B. Existing sections of concrete walkway necessary to install new walkway cover footings and underground storm water piping.
    - C. Miscellaneous items not listed above which must be removed for completion of the work.
  2. Removal of all debris from the site.
  3. Obtain necessary permits and comply with all local ordinances for demolition work and disposal of construction debris.
  4. Provide temporary partitions and dust barriers for noise, dust control and protection, existing construction to remain, and equipment.
  5. Cap and identify exposed utilities, connect utilities to remain as shown on the drawings.
  6. Security and safety measures, to include guardrails, barricades, roping, and safety tape around the area of work. Post warning signs as necessary to discourage unauthorized entry by the public in the areas of demolition.
- 1.02 Submittals:
- A. Submit a copy of all permits and certificates required for work of this Section.
  - B. Submit demolition procedures and operational sequence for review and acceptance by the Owner. These procedures shall include the following:
    1. Description of methods and equipment to be used.
    2. Schedule of coordination of utility services.
    3. Methods to be used for disposal of debris.
    4. Scheduled hours of work to be approved in advance by the Owner.
- 1.03 Protection:
- A. Safety measures and methods shall be used to protect personnel and property which is to remain undisturbed.
  - B. Schedule all work to cause minimum disturbance to facility operations. Advise the Owner 48 hours prior to beginning any work which could affect facility operations.
  - C. Do not interfere with use of the existing facility. Maintain free and safe passage to and from all areas normally trafficked by students, staff, and visitors.
  - D. Use approved methods to provide dust control during demolition.
  - E. Provide protection to adjacent construction and equipment not a part of this project from damage, and other areas where work is in progress.
  - F. Salvageable items noted for reuse shall be protected from damage, other items noted for salvage for the Owner, shall be turned over to him.
  - G. Contractor shall schedule and coordinate work to prevent damage to the existing building by un-authorized entry during unoccupied periods, and shall, where necessary, to control and prevent such damage or entry, install temporary closures for openings.
  - H. The Contractor is responsible for the protection of all public sidewalks that border the site. Any damage is to be repaired by removing damaged sections and replacement.
- 1.04 Existing Services:
- A. The Contractor shall disconnect and remove utility services only under the direction of the Owner. All temporary disconnection of the permanent services, prior to removal of the services in and to a structure to be demolished, shall be planned and authorized by the Architect/Engineer and the Owner.
  - B. Place markers to indicate location of disconnected services. Indicate service lines and capping locations on Project records.
  - C. Provide new connections and tie-ins to the utilities in the building as shown on the drawings.
- 1.05 Job Conditions:
- A. Condition of Structures: The Owner assumes no responsibility for the actual condition of

**DIVISION 02. SITE WORK**

**SECTION 024100 DEMOLITION (CONTINUED)**

areas to be demolished.

1. Bidders for this work shall make such investigations as they deem necessary to arrive at a contract price.
  2. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner in so far as practicable.
- 1.06 Site Examination: The Contractor shall visit the site as necessary prior to beginning any work and examine all existing equipment and other conditions that might affect his work.

**PART 2 - PRODUCTS**

- 2.01 Salvaged Materials:
- A. Any structures or items noted to be salvaged will be designated as such and shall be removed in a manner that will prevent breakage or undue damage. Material or parts of structures which are to be salvaged, such as lumber, pipe, brick, concrete, etc., shall be removed in the manner directed by the Owner and stacked at the Site for future use.
  - B. Materials or parts of structures which, in the opinion of the Owner, are not salvageable, or which are designated as surplus by the Owner, shall be disposed of at locations off the job site as approved by the Owner.
- 2.02 Demolition Equipment: Equipment shall be selected for demolition operations which will not damage existing building components. Vibratory or percussion equipment shall be avoided whenever possible or whenever it will inflict damage to adjacent materials.

**PART 3 - EXECUTION**

- 3.01 Preparation:
- A. Maintain exit requirements.
  - B. Erect and maintain measures as required to prevent spread of dust, fumes and smoke to other parts of the building. On completion, remove partitions and repair damaged surfaces to match adjacent surfaces.
  - C. Carry out demolition work to cause as little inconvenience to adjacent occupied building areas as possible.
- 3.02 Temporary Shoring and Bracing:
- A. The Contractor shall be responsible for providing shoring and/or bracing for any building component from which support is removed during construction operations.
  - B. Shoring and bracing shall be designed to support the dead load of the shored element and any anticipated construction loads.
  - C. Shoring and bracing shall be installed at locations which will not overstress or damage existing structural members.
- 3.03 Demolition:
- A. All demolition shall be performed in accordance with applicable codes and regulations of authorities having jurisdiction.
  - B. Demolish in an orderly and careful manner as required to accommodate new work, including that required for connection to the existing building. Protect existing structural members, flooring to remain, and adjacent partitions.
  - C. Repair all demolition performed in excess of that required, at no cost to the Owner.
- 3.04 Removal:
- A. Remove from site contaminated or dangerous materials encountered and dispose of by safe means so as not to endanger health of workers and public.
  - B. Remove demolished materials, debris, dust, tools and equipment from site upon completion of work. Leave site in a condition acceptable to the Architect and the Owner's Representative..
  - C. Transport all materials removed from demolished area and dispose of off-site. Off-site disposal shall be subject to agreement and provisions to be arranged and authorized by Architect, in accordance with local ordinances.
- 3.05 Repair:  
All damage done to existing structures that are to remain shall be repaired to the satisfaction of the Architect and the Owner's Representative. Any unsightly places shall be cleaned up and the site left in a neat and orderly condition.

**DIVISION 02. SITE WORK**

**SECTION 024100 DEMOLITION (CONTINUED)**

End of Section

**DIVISION 03. CONCRETE**

**SECTION 032000 CONCRETE REINFORCEMENT**

**PART 1 - GENERAL**

- 1.01 Section Includes:  
Reinforcement for cast-in-place concrete (including bars, welded wire fabric, ties, and supports) as shown on Drawings, and as specified herein.
- 1.02 Related Sections:  
Cast-in-place concrete (Section 033000).
- 1.03 Quality Assurance:
- A. Reference Standards:
    - 1. Standard References:
      - A. Current edition of the following references shall apply to work of this Section. Suffixes indicating date of issue are omitted from reference numbers used in the text of this Section.
      - B. Publications of the American Concrete Institute:
        - 1. ACI 117 "Standard Tolerances for Concrete Construction and Materials"
        - 2. ACI 301 "Specification for Structural Concrete for Buildings."
        - 3. ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures."
        - 4. ACI 318 "Building Code Requirements for Reinforced Concrete."
      - C. Publications of the CRSI:  
"Manual of Standard Practice."
  - B. Building Code: North Carolina Building Code-Latest revision with all current amendments.
- 1.04 Submittals:
- A. Shop Drawings:
    - 1. Submit shop drawings in accordance with Section 01340.
    - 2. Shop drawings shall be in accordance with ACI 315.
    - 3. Show placing plans, bending details, and bar lists.
    - 4. Show details, bar clearances, notes, and necessary information for placing of reinforcing steel.
- 1.05 Delivery, Storage, Handling:
- A. Reinforcing steel shall be delivered to Project Site properly tagged, bundled, and ready to place.
  - B. Reinforcing steel delivered to Project Site (and not immediately placed in forms), shall be protected from mud, excessive rust-producing conditions, oil, grease, or distortion. Reinforcing steel shall be stored off ground, on heavy timbers.
  - C. Use all necessary precautions to maintain identification after bundles are broken.

**PART 2 - PRODUCTS**

- 2.01 Materials:
- A. Reinforcing Bars: New, deformed bars, conforming to ASTM A615(S1), or smooth bars at concrete floor repair, Grade 60; as required on Drawings.
  - B. Welded Wire Fabric: Welded wire fabric shall be electrically-welded wire fabric of cold-drawn wire of gauge and mesh shown on Drawings, or as required. Fabric shall conform to ASTM A185, Grade 60 or Grade 70 and shall be furnished in rolls or prefabricated sheets for all slab-on-grade and concrete topping slabs.
  - C. Steel Bar Mats: Shall conform to ASTM A184. Steel bars conforming to ASTM A615(S1), Grade 60.
  - D. Tie wire shall be 16 gauge, or heavier, black annealed wire.
  - E. Accessories:  
Fabricate from concrete, metal, plastic or other approved materials.
- 2.02 Fabrication:
- A. Reinforcing steel shall be fabricated to shapes and dimensions indicated on Drawings,

**DIVISION 03. CONCRETE**

**SECTION 032000 CONCRETE REINFORCEMENT (CONTINUED)**

- and in compliance with applicable provisions of ACI 315 and ACI 318.
- B. Bars shall be bent cold in shop. No bars shall be bent in field, unless specifically indicated on Drawings.
  - C. Fabrication of reinforcing steel prior to review and approval of shop drawings by Architect shall be solely the responsibility of the Contractor.

**PART 3 - EXECUTION**

- 3.01 General Requirements for Reinforcing:
  - A. Reinforcing shall be free from scale, loose rust, mud, or coatings which will reduce bond to concrete.
  - B. Bars with kinks or bends not shown on Drawings shall not be placed. Heating of reinforcing for bending or straightening will not be permitted.
  - C. Minimum concrete cover for reinforcing shall be as shown on Drawings.
- 3.02 Placing of Reinforcement:
  - A. Tolerances: Bars shall be placed to the following tolerances:
    - 1. Concrete cover to formed surfaces: + one-quarter inch.
    - 2. Top bars in concrete slab:  $\pm$  one-quarter inch.
    - 3. Clearance to vertical form surface:  $\pm$  one-quarter inch.
  - B. Spacing of Bars:

Minimum clear distance between parallel bars shall be equal to nominal diameter of bar. In no case shall clear distance between bars be less than 1", nor less than one and one-third times maximum size of coarse aggregate.
  - C. Accessories:
    - 1. In footings in earth, support reinforcing with precast concrete blocks. Tie reinforcing securely to prevent displacement. Blocks shall be thoroughly wetted prior to placing concrete.
    - 2. Nails shall not be driven into form work to support reinforcement.
    - 3. Space bar supports in accordance with ACI 315, ACI 301 and CRSI Manual of Standard Practice.
  - D. Securing Reinforcement:
    - 1. Reinforcing bars shall be supported and wired together to prevent displacement by construction loads, or by placing of concrete, beyond tolerances as set forth herein before.
    - 2. Any and all disturbances of reinforcement from any cause whatsoever shall be corrected fully prior to placing of concrete. Damaged bar-supports and spacers shall be repaired, or shall be removed and replaced.
    - 3. Bars shall not be bent after being embedded in hardened concrete, unless indicated so on Drawings.
    - 4. When required or approved, welding of reinforcing steel shall conform to AWS D1.4. Do not weld at bend in a bar. Welding of cross bars shall not be permitted unless authorized by Architect.
- 3.03 Field Quality Control:

Review of Placement of Reinforcing Steel:

  - A. Architect shall be given advanced notice of not less than 24 hours prior to placing concrete to allow review of reinforcing steel.
  - B. Architect shall be given notice required hereinbefore, and shall be given opportunity to review (for correction) placement of reinforcing steel before placing of concrete. Any concrete placed without approval of the Architect or the Owner's Representative will be subject to rejection.
  - C. Inspection of placement of reinforcement in a section will be made only after placement is complete for that section to be poured.
  - D. Such inspections shall not relieve Contractor of his responsibility to provide work in accordance with requirements of Contract Documents. Such inspections are for purpose of minimizing errors in field work.

End of Section



**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

- 1.01 Section Includes:
- A. Cast-in-place concrete as shown on drawings, and as specified herein.
  - B. In general, this work includes providing cast-in-place concrete consisting of Portland Cement, fine and coarse aggregate, selected admixtures, mixing, transporting, and placing, as specified herein.
  - C. This Section further includes testing, related items of quality control, and evaluation of concrete strength.
- 1.02 Related Sections:  
Concrete reinforcement (Section 032000).
- 1.03 Quality Assurance:
- A. References:  
Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used).
    - 1. American Concrete Institute (ACI)
    - 2. American Society for Testing and Materials (ASTM)
  - B. Standard References:  
Current edition of the following standard references shall apply to the work of this Section as indicated. Suffixes indicating issue date are omitted from reference numerals elsewhere in text. Concrete work shall comply with the following standards and codes except as indicated otherwise on Drawings or herein.
    - 1. ACI 301 "Specifications for Structural Concrete"
    - 2. ACI 302 "Guide for Concrete Floor and Slab Construction"
    - 3. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"
    - 4. ACI 305 "Hot Weather Concreting"
    - 5. ACI 306 "Cold Weather Concreting"
    - 6. ACI 309 "Recommended Practice for Consolidation of Concrete"
    - 7. ACI 311 "Recommended Practice for Concrete Inspection"
    - 8. ACI 318 "Building Code Requirements for Reinforced Concrete"
  - C. Building Code: North Carolina Building Code - Latest edition with all current amendments.
  - D. Ready-mixed concrete production facilities shall be certified by the National Ready-Mixed Concrete Association, or the Producer shall demonstrate, to the satisfaction of the Architect, ability to comply with this Section.
- 1.04 Submittals:
- A. Submittals shall be in accordance with Section 01340.
  - B. Submit copies of the proposed design mix for each class of concrete specified herein.
  - C. Submit four copies of records of concrete placements showing exact location of placement, date of placement, quantity of placement, and class of concrete placed. Submit to Architect each week.
  - D. Submit Manufacturer's printed technical and performance data on admixtures proposed for use on Project.
  - E. Submit certificates required herein.

**PART 2 - PRODUCTS**

- 2.01 Acceptable Manufacturers:
- A. Concrete Admixtures:
    - 1. Euclid Chemical Co., Cleveland OH
    - 2. Master Builders Co., Cleveland OH
    - 3. Sika Corporation, Lyndhurst NJ
- 2.02 Materials:
- A. Portland Cement: Shall conform to ASTM C150, Type I. Only one brand of cement shall be used except when authorized in writing by Architect.
  - B. Fly Ash: Fly ash shall have a high fineness and low carbon content and shall meet the

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

requirements of ASTM C618, "Specification for Fly Ash and Raw or Calcined Natural for use in Portland Cement Concretes for Class F, except that the loss of ignition shall be less than 3% and all fly ash shall be a classified processed material. Fly ash shall be obtained from one source for the concrete delivered to the project. Complete chemical and physical analysis of each carload of fly ash shall be submitted to the Architect (10) days prior to use for each carload delivered. Concrete mixes proportioned with fly ash shall have no more than 20% cement (by weight) replaced by fly ash.

- C. Fine Aggregate: Shall be clean, sharp, natural sand; free from loam, clay, lumps, or other deleterious substances.
- D. Course Aggregates for Concrete:
  - 1. For Normal Weight Concrete: Shall conform to ASTM C33.  
Coarse Aggregate: Shall be clean, uncoated aggregate containing no clay, mud, loam or foreign matter; and processed from natural rock or stone.
  - 2. For Semi-lightweight Concrete: Shall conform to ASTM C330, sand/lightweight aggregate.  
Shall be clean, uncoated aggregate containing no clay, mud, loam or foreign matter.
  - 3. Aggregate size shall not be larger than one-fifth of narrowest dimension between sides of forms, one-third of depth of slabs, nor three-fourths of minimum clear spacing between individual reinforcing bars.
- E. Water: Shall be clean, fresh, free from oil, organic matter or other deleterious substances.
- F. Concrete Admixtures:
  - 1. Shall be produced by acceptable manufacturers. Do not use admixtures which have not been incorporated and tested in mixes accepted for use on Project, unless authorized otherwise in writing by Architect. Admixtures shall be "Chloride Free" and shall not contain more chloride ions than are present in municipal drinking water.
  - 2. Air-entraining Admixtures: Shall conform to ASTM C260, Vensol Resin Type.
  - 3. Water-reducing Set-controlling Admixtures: Shall conform to ASTM C494, Type A (water-reducing). Shall be Eucon WR-75, Pozzolith 200N or Plastocrete 160.
  - 4. High Range Water-reducing Admixtures (Super-plasticizer): Shall conform to ASTM C494, Type F. Shall exceed ASTM C666 for freeze/thaw durability.  
Manufacturers shall be Euclid or Sika.
  - 5. Retarders: Shall conform to ASTM C494, Type D. Shall be Eucon Retarder-75, Pozzolith 100XR, or Plastiment.
  - 6. Non Corrosive Accelerators: Shall conform to ASTM C494, Type C or E. Shall be non-chloride, non-corrosive, and contain no more chloride ions than are present in municipal drinking water.
    - A. Admixture manufacturer must have long-term non-corrosive test data from an Independent Testing Laboratory of at least a year's duration using an acceptable accelerated corrosion test method such as using electrical potential measures.
  - 7. Provide certification of compliance of admixtures with applicable ASTM standards, in writing to Architect when submitting design mixes. Provide certification of chloride ion content.
- G. Forms:
  - 1. Plywood, exterior grade, DFPA, Class II, B-B.
  - 2. 5/8 Inch, 5 ply minimum.
- H. Form Oil:  
Non-staining mineral oil.
- I. Saw Joint Filler:
  - 1. Semi-rigid, self-leveling epoxy. Material shall have the following properties:

<u>Property</u>	<u>Value</u>
Solids content (by wt)	100%
Hardness (Shore D)	50 min
Tensile strength	400-500 psi

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

- Adhesion to concrete 180-230 psi
2. "Sikadur 51SL" as mfd. by Sika Corporation, Lyndhurst NJ.
- J. Joint Sealer for Isolation Joints:  
Joint sealer shall be an epoxy base or polyurethane base with a minimum shore A hardness of 35. The joints shall not be sealed sooner than 30 days after the slab placement.
- K. Bonding Compounds:
1. An aqueous resin emulsion formulated in a polyvinyl base; rewettable. (For use in areas not subject to moisture only).
  2. One of the following:  
"EucoWeld" as mfd. by Euclid Chemical Co.  
"Weldcrete" as mfd. by the Larsen Co.
- L. Epoxy Adhesive:
1. Two component, 100% solids, 100% reactive compound conforming to ASTM C881. For use on damp or dry surfaces.
  2. One of the following:  
"Euco Epoxy No. 452MV or No. 620" as mfd. by Euclid Chemical Co.  
"Sikadur Hi-Mod" as mfd. by Sika Chemical Co.
- 2.03 Mix Designs:
- A. Prepare design mixes for each class of concrete used in accordance with ACI 318 . Prepare mixes by either laboratory trial batches or field experience. Do not begin concrete production until mixes have been reviewed by Architect.
1. Design mix cost shall be paid by the Contractor.
  2. Submit written reports to Architect of each proposed mix for each class of concrete prior to start of work.
  3. Design mixes shall include a cover letter prepared by a Registered Engineer of an approved independent Testing Laboratory (on company letterhead of laboratory) certifying compliance of design mix with appropriate ACI procedure and list all materials and proportions required for design mix (including specific gravity, fineness modulus and unit weight).
  4. Design mixes utilizing fly ash shall use 50% by weight of fly ash to determine water/cement ratios.
- B. Laboratory Trial Batches:
1. Laboratory trial batches shall be prepared, batched and tested by an approved independent Testing Laboratory.
  2. When laboratory trial batches are used to select concrete proportions, prepare specimens in accordance with Section 4.4 of ACI 318. Prepare test specimens in accordance with ASTM C192, and conduct strength tests in accordance with ASTM C39.
  3. Establish a curve showing relationship between water/cement ratio or cement content and compressive strength, with at least 3 points representing batches which produce strengths above and below that required. Use not less than three specimens tested at 28 days, to establish each point on the curve.
  4. The proposed design mix shall achieve a compressive strength of 1200 psi greater than the specified strength. This overdesign shall be increased to 1400 psi for concrete strengths greater than 5000 psi.
- C. Field Experience Method:
1. When field experience methods are used to select concrete proportions, establish proportions as specified in ACI 318, Section 4.3.
  2. Strength data for establishing standard deviation will be considered suitable if concrete production facility has certified records consisting of at least 30 consecutive tests in one group or the statistical average for 2 groups totaling 30 or more tests, representing similar materials and project conditions. Data shall be less than 12 months old.
- D. Standard Deviation:  
Standard deviation of design mix shall be in accordance with ACI 318, Section 4.3.1.
- E. Concrete for all design mixes shall be proportioned to result in maximum slumps specified

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

in Section 2.05 for concrete without super-plasticizer unless otherwise permitted by Architect (in writing).

- F. Design mixes shall be proportioned and tested using maximum specified slump, air entrainment, and a minimum concrete temperature of 80 degree F.
  - G. Prepare design mixes with required admixtures (except superplasticizer). If more than one admixture is used in a mix, certify compatibility of admixtures.
  - H. Contractor shall be responsible for providing concrete mixes of acceptable workability to provide required appearance, durability, and watertightness.
  - I. Consistency and Composition: The concrete shall be of such consistency that it can be worked readily into the corners and angles of the forms and around reinforcement without permitting materials to segregate, or free water to collect on the surfaces. Within the limiting requirements, adjust the consistency of the concrete as may be necessary to produce mixtures which will be placeable with reasonable methods of placing and compacting.
  - J. Concrete subject to freezing and thawing shall have a maximum water/cement ratio of .50 by weight. Concrete subject to deicers and/or required to be watertight shall have a maximum water-cement ratio of 0.45.
  - K. Concrete mixes shall be designed with minimum pounds of cement/cu. yd. as follows: 450 lbs. for 3000 psi and 530 lbs. for 4000 psi.
  - L. The use of fly ash in air-entrained concrete is prohibited.
  - M. All interior slabs shall have a maximum air content of 3%.
- 2.04 Use of Admixtures:
- A. Admixtures shall be used in strict accordance with Manufacturer's printed instructions. Design mix shall be proportioned using the proposed admixtures. Use admixtures only with written approval of Architect unless specified herein.
  - B. Air-entraining admixtures shall be used for all concrete exposed to freezing and thawing, or subjected to hydraulic pressure. The following proportions of air shall be used: 4.5% to 7.5% for normal weight concrete.
  - C. Use water-reducing admixtures in strict compliance with Manufacturer's printed directions.
  - D. Use amounts of admixtures as recommended by Manufacturer for climatic conditions prevailing at time of placing. Adjust quantities of admixtures as required to maintain quality control.
  - E. Calcium chloride, in any form, or admixtures containing more than 0.05% chloride ions shall not be used in any concrete. Admixtures containing thiocyanate will not be permitted.
- 2.05 Concrete Mixing:
- A. All concrete shall be ready-mix concrete, shall comply with requirements of ASTM C94, and shall be as specified herein unless otherwise noted. During hot weather or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 will be required as follows:
    - 1. When air temperatures are between 80 degree F. and 90 degree F., reduce mixing and delivery time from one and one-half hours to one hour.
    - 2. When air temperatures are above 90 degree F., reduce mixing and delivery time from one and one-half (1-1/2) hours to forty-five (45) minutes.
    - 3. Redosage of concrete with high-range water-reducing admixture may be used with prior approval of Architect as to methods and procedures.
  - B. Compressive Strengths:
    - 1. Concrete shall have the following 28 day compressive strengths:
      - A. Slabs on grade.....3000 psi
      - B. Reinforced.....3000 psi
    - 2. For slabs-on-grade, provide minimum flexural strength of 650 psi at 28 days and 550 psi at 14 days.
  - C. Unit Weights:
    - 1. Normal Weight Concrete: Shall have an air dry unit weight not in excess of 150 p.c.f.
    - 2. Structural Lightweight Concrete: Shall have an air dry unit weight not in excess of 120 p.c.f.

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

- D. Slumps:
  - 1. Concrete shall be proportioned to give the following slumps at point of placement:
    - A. Concrete with high range water-reducing admixture:
      - 1. Before addition of Plasticizer.....min. 2", max. 3"
      - 2. After addition of Plasticizer.....min. 5", max. 7"  
max. 4" for slab-on-grade
    - B. All other concrete.....min. 2", max. 4"  
max. 3" for slab-on-grade
  - 2. All Concrete mixes for use in concrete walls, piers, columns, slabs on grade, and supported slabs shall be prepared using a high-range water-reducing admixture in addition to any other required admixture. All pumped concrete and concrete containing fiber reinforcement shall contain super-plasticizer.
- E. Workability:
  - 1. Concrete without super-plasticizer:
    - A. The addition of water at the job site will be permitted as specified herein only.
    - B. Concrete delivered to Site with a slump greater than maximum slump specified shall be rejected and disposed of off Owner's property.
    - C. Water shall not be added to concrete such that design water/cement ratio is exceeded.
    - D. Concrete producer shall furnish delivery tickets for each load stating the maximum amount of water that may be added without exceeding the required water/cement ratio.
    - E. Addition of water at Site for concrete mix with insufficient slump and for slump less than maximum specified herein, will be allowed only by a qualified Concrete Technician. Addition of water to concrete mix by any other person or persons other than the qualified Concrete Technician will not be permitted.
  - 2. Concrete with super-plasticizer:  
The addition of admixture for concrete mix with insufficient slump and for slump less than maximum specified herein, will be allowed only by a qualified Concrete Technician. Addition of plasticizer to concrete mix by any other person or persons other than the qualified Concrete Technician will not be permitted.  
Concrete delivered to Site with a slump greater than maximum slump specified shall be rejected and disposed of off Owner's property.
- F. Maintain equipment in proper operating condition, with drums cleaned before changing of each batch. Schedule delivery of trucks in order to prevent delay of placing after mixing.
- G. Concrete Producer shall furnish delivery tickets with each load. Tickets shall conform to requirements of ASTM C94, and shall certify contents of load.

**PART 3 - EXECUTION**

- 3.01 Pre-placement Inspection:
  - A. Before placing concrete, the formwork installation, reinforcing steel, and items to be embedded or cast-in shall be complete. Notify other crafts involved in ample time to permit installation of their work; cooperate with other trades in setting such work, as required.
  - B. Notify Architect upon completion of installation of all reinforcing and other items in ample time to permit inspection of the work.
  - C. Remove all foreign matter from area to receive new concrete.
  - D. Install underslab fill in accordance with Section 02200.
  - E. Soil at bottom of foundations is subject to inspection by an Independent Testing Laboratory.
- 3.02 Testing:
  - A. The Owner shall retain an independent testing laboratory to perform tests as outlined below, to verify compliance with these specifications, and to submit the results of the tests to the Architect and the Owner. Costs of all testing shall be paid by the Owner.

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

- B. All concrete testing shall be performed by a laboratory meeting the requirements of ASTM E-329, STANDARD RECOMMENDED PRACTICE FOR TESTING AGENCIES FOR CONCRETE USED IN CONSTRUCTION. Accreditation as a Class (1 or II) laboratory by BACTL (Board of Accreditation of Concrete Testing Laboratories, Inc.) Will suffice as evidence of the laboratory meeting these ASTM requirements.
  - C. Procedure shall be in accordance with the testing chapter of ACI-301.
  - D. Sampling fresh concrete: ASTM C172.
  - E. Slump:
    - 1. Make slump test during each pouring in accordance with ASTM C-143.
    - 2. Slump requirements:

Foundations, walls, footings, grade beams	2" - 4".
Slabs, beams, piers, walkways, columns	2" - 3".
  - F. Compressive strength specimens and tests:
    - 1. Two specimens shall be obtained for testing at 28 days for acceptance and two shall be obtained for testing at 7 days for informational purposes.
    - 2. Evaluation of tests shall be in accordance with ACI-318, Section 4.8, except that one sample of four cylinders shall be taken for each 100 cubic yards, or fraction thereof, of each class of concrete placed each day.
- 3.03 Concrete Placement:
- A. Place concrete in compliance with practices and recommendations of ACI 304, or as specified herein.

The addition of super-plasticizer to concrete mixes shall be monitored or performed by a qualified representative of the Testing Laboratory retained by Owner.
  - B. Concrete shall be handled from mixer to place of final deposit as rapidly as practical, by methods which will prevent separation or loss of ingredients, and in a manner which will assure that required quality concrete is obtained.
  - C. Conveying equipment shall be of size and design to insure a continuous flow of concrete at delivery end.
  - D. Concrete shall be deposited continuously, or in layers of such thickness that no concrete will be deposited in concrete which has hardened sufficiently to cause formation of seams or planes of weakness within the section. If a section cannot be placed continuously, construction joints shall be located at points as provided for in Drawings or as approved by Architect. Placing shall be carried on at such a rate that concrete which is being integrated with fresh concrete is still plastic. Deposit concrete as nearly as possible to its final location to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.
  - E. A vibrating screed shall be used for slab-on-grade and supported slabs. Screed concrete which is to receive other construction to proper level to avoid excessive skimming or grouting. Check elevation of forms before and after screeding operation, on both sides of slab.
  - F. Do not use concrete which has become non-plastic and unworkable, which does not meet required quality control limits, or which has become contaminated by foreign material. Remove rejected concrete from Owner's property, and dispose of in an acceptable location.
  - G. Soil at bottom of foundation systems is subject to testing and inspection for soil bearing value by an Independent Testing Laboratory as selected and paid for by the Owner, and as directed by Architect. Place concrete or seal with mud mat immediately after approval of foundation excavations.
  - H. Remove temporary spreaders in forms when concrete placing has reached elevation of such spreaders.
  - I. Concrete shall be worked around reinforcement and embedded fixtures, along surfaces and into corners of form. Vibrators may be used provided they are operated under experienced supervision.
  - J. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding, and tamping. Vibration of forms and reinforcing steel will not be permitted.
  - K. Do not use vibrators to transport concrete inside forms. Insert and withdraw vertically at

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

- uniformly spaced locations not further than visible effectiveness of vibrator. Do not insert vibrators into lower levels of concrete that has begun to set. Use and type of vibrators shall be in accordance with ACI 309.
- L. Do not permit concrete to fall free in excess of 4'-0" except as approved. Place concrete in piers and walls with a tremie.
  - M. Deposit and consolidate concrete in slabs in continuous operation, within limits of construction joints, until placing of entire section is complete.
  - N. Do not use rakes with tines to level or transport concrete.
  - O. Bring surface of slabs to correct elevations with straight-edge and strike off. Use bull-floats, highway straight edge, or darbies to smooth surface, leaving it free of humps and hollows. Do not sprinkle water on plastic surface. Do not disturb surface prior to beginning finishing operation.
  - P. Vibration along edges of forms will be required to prevent honeycomb along edge of slab.
- 3.04 Construction Joints:
- A. Joints not shown on Drawings shall be made at locations that will least impair strength of structure, and shall be approved by Architect prior to construction.
  - B. Roughen surfaces of set concrete at all joints. Clean surfaces of laitance, coatings, loose particles, and foreign matter. Roughen surfaces in a manner to expose bonded aggregate uniformly and to leave no laitance, loose particles of aggregate, or damaged concrete at surface.
  - C. Prepare for bonding of fresh concrete to new concrete that has set (but is not fully cured) as follows:
    - 1. Dampen at joints between foundation systems and walls or columns, but do not saturate. Dampen roughened and cleaned surface of set concrete immediately before placing fresh concrete.
    - 2. At vertical joints in exposed work, saturate roughened and cleaned surface of set concrete; and apply bonding compound as per Manufacturer's printed instructions.
  - D. Conform to slab placement diagrams or pattern layout for placement as shown on Drawings.
  - E. Provide keyways at least 1-1/2" deep in all construction joints in walls, supported slabs, and between walls and foundation systems.
  - F. Provide isolation joints in slabs-on-grade at all points of contact between slabs on ground and vertical surfaces, (such as column pedestals, foundation walls, and masonry walls) and elsewhere as indicated.
  - G. Provide sawn control-joints in slabs-on-grade as shown on Drawings. Use cuts 1/8" wide by 1/4 of slab deep, unless shown otherwise. Control joints shall be cut within 12 hours after concrete is finished, except when mean daily temperature is below 50 degree F, cut within 24 hours. Seal joint with dissipating resin curing compounded sprayed into joint immediately after cutting.
  - H. Fill control and isolation joints with approved joint filler. Fill no sooner than 120 days following placing of concrete.
- 3.05 Cold Weather Placing:
- A. Protect all concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with requirements of ACI 306, and as specified herein.
  - B. When air temperature has fallen to or is expected to fall below 40 degree F., provide adequate means to maintain temperature in area where concrete is being placed at either 70 degree F. for 3 days or 50 degree F. for 5 days after placing. Provide temporary housing or coverings including insulating blankets or polystyrene covered with polyethylene. Keep protection in place and intact at least 24 hours after artificial heat is discontinued. Avoid rapid dry-out of concrete due to overheating, and avoid thermal shock due to sudden cooling or heating. For slab-on-grade, protection shall remain in place a minimum of 5 days.
  - C. When air temperature has fallen to or is expected to fall below 40 degree F., uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 50 degree F. and not more than 60 degree F. at point of

**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

- placement.
- D. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen material. Ascertain that forms, reinforcing steel, and adjacent concrete surfaces are entirely free of frost, snow, and ice before placing concrete.
  - E. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators. Use only specified non-corrosive, non-chloride accelerators.
  - F. Do not place concrete when freezing weather is predicted within 24 hours.
- 3.06 Hot Weather Placing:
- A. Cool reinforcing by wetting sufficiently so that steel temperature will not exceed ambient air temperature immediately before placing concrete.
  - B. Wet forms thoroughly before placing concrete.
  - C. If ambient air and/or subgrade temperature is above 80 degree F. retarders may be used if approved by Architect.
  - D. If ambient air temperature is above 80 degree F., interior slab-on-grade shall not be placed unless roof deck above slab is in place. Provide wind screens when required.
  - E. Concrete with a temperature of 90 degree F. or above shall not be used.
- 3.07 Miscellaneous Concrete Items:  
Provide machine and equipment bases and foundations, as shown on Drawings. Set anchor bolts for machines and equipment with template at correct elevations, complying with certified diagrams or templates of Manufacturer furnishing machines and equipment.
- 3.08 Removal of forms:
- A. Remove forms in accordance with good practice, without damage to concrete to insure complete safety of structure.
  - B. Leave shoring in place until concrete member will safely support its own weight and the loads upon it.
  - C. Consult the Architect/Engineer in case of uncertain conditions.
  - D. Shoring and forms supporting the concrete structure of all floors and roofs shall be kept in place until the concrete has reached a minimum cylinder strength of 3,000 psi (cylinders cured under field conditions).
  - E. Upon removal of forms the Architect will designate which surfaces may be pointed up and how slightly damaged portions of concrete will be patched or replaced.
- 3.09 Finishing:
- A. Remove all exposed tie wires and stapled ends from surfaces to be exposed, rub smooth or cut off fins and rough places, remove all loose concrete, fill honey-combs and other irregularities with cement mortar.
  - B. Do not patch any surfaces until examination has been made and permission given.
  - C. Finishes:
    - 1. Concrete walkways, and pads:  
Light broom finish w/tooled edges.
    - 2. Dusting to absorb surface water will not be permitted.
- 3.10 Curing and Protection:
- A. Protect against frost and rapid drying, keep continuously moist at least five days after placement, if necessary protect with suitable temporary cover, or apply curing compound (do not apply curing compound on concrete to receive plaster or ceramic / quarry tile finish).
  - B. Slabs:  
Apply curing compound for areas to receive vinyl composition tile or carpet. Float finish areas to receive stone, ceramic or quarry tile, damp cure.
  - C. Damage:
    - 1. Use all means necessary to protect cast-in-place concrete materials before, during, and after installation and to protect the installed work and materials of all other trades.
    - 2. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.
- 3.11 Workmanship:  
Concrete work which does not conform to specified requirement (including strength, tolerances,



**DIVISION 03. CONCRETE**

**SECTION 033000 CAST-IN-PLACE CONCRETE (CONTINUED)**

and finishes), shall be corrected and/or replaced as directed by Architect, at Contractor's expense, without extension of time therefore. Contractor shall also be responsible for cost of corrections to any work affected by or resulting from correction to concrete work.

End of Section

## **DIVISION 07. MOISTURE PROTECTION**

### **SECTION 079200 CAULKING AND SEALANTS**

#### **PART 1 - GENERAL**

- 1.01 At areas of new work.
- 1.02 Interior:
- A. General use.
  - B. Where noted on drawings.
- 1.03 Other caulking to make building watertight in areas of renovation.
- 1.04 Submittals:  
Furnish manufacturer's specifications / recommendations / installation instructions for each type material required. Include manufacturer's published data, letter of certification, or certified test laboratory report indicating each material complies with requirements and intended generally for applications shown.
- 1.05 Warranty:  
Furnish a written warranties as specified below, covering loss of adhesion or cohesion, deterioration, leaking, and other defects. In addition, warrant that material has been installed according to manufacturer's written specifications.  
Prior to the start of work, the Manufacturer shall provide a full-time employee to verify that materials are suitable for intended applications, will provide long-term adhesion, and are compatible when dissimilar materials intersect or contact one another. No claims for additional costs shall be allowed because of changes of sealants required to comply with the provisions of this paragraph.
- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
  - B. Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period. Warranty Period: Two years from date of Substantial Completion.
  - C. Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period. Warranty Period: 10 years from date of Substantial Completion.
  - D. Warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
    - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
    - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
    - 3. Mechanical damage caused by individuals, tools, or other outside agents.

#### **PART 2 - PRODUCTS**

- 2.01 All items:
- A. Oakum joint filler:
    - 1. Untreated hemp or jute fiber rope, free of oil / tar / and / or other compounds which might stain surfaces, contaminate joint walls, or not be compatible with sealants.

**DIVISION 07. MOISTURE PROTECTION**

**SECTION 079200 CAULKING AND SEALANTS (CONTINUED)**

- 2. Hand packed, dry spun.
  - B. Sealant backer rod:  
Compressible rod stock of polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam, or other flexible / permanent / durable / non-absorptive material recommended for compatibility with sealant by sealant manufacturer.
  - C. Joint primer / sealer:  
Provide type of joint primer / sealer recommended by the sealant manufacturer for the joint surfaces to be primed or sealed.
- 2.02 General use, exterior:

- A. Silicone Sealant Compound:
  - 1. Compound shall be a single-component, silicone-based sealant. Cured sealant shall have the following physical properties:

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Tensile Strength	ASTM D412	170 psi
Tear Strength	ASTM D624	27 psi
Hardness (Shore A)	ASTM D642	30 (min)
Peel Strength	MIL-S-8802D	32 lb/in.

- 2. Sealant shall meet or exceed all requirements of MIL-S-8802 and FS-TT-S-001543A.
- 3. One of the following:
  - A. "Dow Corning 795" as manufactured by Dow Corning Corp., Midland MI 48640.
  - B. "Silpruf 2000" as manufactured by General Electric Construction Products.
  - C. "Pecora 864" as manufactured by Pecora
  - D. "CRL 95C" as manufactured by CR Lawrence
- 4. Color shall be as approved by Designers and Owner.

**PART 3 - EXECUTION**

- 3.01 Installation:
- A. Clean surfaces to be caulked, free from mortar and other foreign matter.
  - B. Allow surfaces to dry before caulking.
  - C. Fill surfaces deeper than 3/4 inch with oakum or compressible backer rod for elastomeric sealants, packed tight.
  - D. Force compound into joints and recessed with gun having nozzle of proper size and at sufficient pressure to fill joints to depths shown; if not shown, as recommended by sealant manufacturer but within following general limitations, measured at center of bead:
    - 1. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but never more than 1/2 inch deep not less than 1/4 inch deep.
  - E. Form concave joints, slightly behind adjoining materials, unless otherwise shown, so compressed units will not protrude from joint.
  - F. Remove excess material.
  - G. Remove stains and soil from other work caused by this work.
  - H. Color selected by architect from a list of manufacturer's full range of colors.

End of Section

## **DIVISION 10. SPECIALITIES**

### **SECTION 107236 WALKWAY COVERINGS**

#### **PART 1 - GENERAL**

- 1.01 Related Documents:  
The bidding requirements, general conditions, supplementary conditions, drawings and requirements of Division 1 specification shall apply to work specified in this section.
- 1.02 Description of Work:
- A. The extent of walkway covers as shown on the drawings and as specified herein.
  - B. Definition:  
Extruded Aluminum Walkway Cover shall consist entirely of extruded aluminum sections (roll-formed not acceptable). System shall consist of heli-arc welded, one-piece rigid structural bents (column and beam assemblies), decking, fascia, accessory items and hardware to provide a complete system.
  - C. Water shall drain from deck into designated beams and out at grade level of columns through weepholes.
  - D. Core drilling of existing concrete necessary to anchor walkway columns.
- 1.03 Related Sections:  
Caulking and Sealants (SECTION 79200).
- 1.04 Submittals:
- A. Shop Drawings: Submit detailed drawings, layout of walkway cover system, bent locations (identify drain columns and wet bents), all mechanical joint locations with complete details, connections, jointing and accessories. Include details of concrete footings and bent anchorage required to resist all loads superimposed on the structure.
  - B. Engineer certification:  
All shop drawing submittals and structural calculations for the walkway cover shall be sealed by a professional engineer registered in the state of North Carolina who professes his discipline to be structural engineering.
  - C. Product Data: Submit manufacturer's product data, specifications, component performance data and installation instructions.
- 1.05 Quality Assurance:
- A. Codes and Standards:  
Comply with provisions of the following except as otherwise indicated:
    - 1. North Carolina State Building Code, latest addition with amendments, if any.
    - 2. AWS (American Welding Society) standards for structural aluminum welding.
  - B. Manufacturer:  
Obtain aluminum covered walkway system from only one (1) manufacturer, although several may be indicated as offering products complying with requirements.
  - C. Installer Qualification:  
Firm with not less than three (3) years experience in installation of aluminum walkway covers of type, quantity and installation methods similar to work of this section.
  - D. Field Measurements:  
Take field measurements prior to preparation of shop drawings and fabrication where possible, to insure proper fitting of work. However, allow for adjustments within specified tolerations wherever taking of field measurements before fabrication might delay work.
  - E. Shop Assembly:  
Preassemble units in shop to greatest extent possible and disassemble as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
  - F. Coordination:

**DIVISION 10. SPECIALITIES**

**SECTION 107326 WALKWAY COVERINGS (CONTINUED)**

Coordinate work of this section with work of other sections which interface with covered walkway system (sidewalks, curbs, building fascias, etc.).

- 1.06 Performance Requirements:
- A. System Performance:  
Provide aluminum covered walkway system that has been designed, produced, fabricated and installed to withstand normal temperature changes as well as live loading, dead loading and wind loading in compliance with International Code Council (as adopted by the State of North Carolina) requirements for geographic area in which work is located and as follows:
    - 1. Live Load: 30 p.s.f. minimum
    - 2. Structural design for wind forces: Comply with ANSI A58.1-1982.
    - 3. Design Wind Velocity: 90 m.p.h.
    - 4. Importance Factor: 1.1.
    - 5. Stability Criteria: North Carolina State Building Code, Section 1604.
  - B. Sizes shown on drawings are to be considered minimum.
  - C. Structure shall be capable of sustaining severe icing, hail, hurricane force winds and supporting a concentrated load such as being walked upon.

**PART 2 - PRODUCTS**

- 2.01 Acceptable Manufacturers:
- A. Dittmer Architectural Aluminum.
  - B. E.L. Burns Company.
  - C. Peachtree Protective Covers, Inc.
  - D. Perfection Architectural Systems, Inc.
  - E. Approved Equal:
- 2.02 Materials:
- A. All aluminum extrusions shall be alloy 6063 heat treated to a T-6 temper.
  - B. Standard finish for all components shall be one of the following:
    - 1. Class 2, clear anodize
    - 2. Factory baked enamel finish, AAMA 2603, standard white or brown.
    - 3. As selected by the architect.
  - C. Columns:
    - 1. Columns shall be radius cornered tubular extrusion of size required by structural engineering design or as shown on the drawings with cutout and internal diverter for drainage where indicated. Circular downspout opening in column not acceptable.
    - 2. Grout Key:  
Provide two 1-1/2 inch (38 mm) diameter holes in column base, one each in opposite sides.
    - 3. Provide clear acrylic protection coat on surfaces in contact with grout.
    - 4. Foam Block-Outs:  
Rigid foam blocks sized as required for column embedment depth and shape.
    - 5. Grout:  
1 part portland cement, 3 parts masonry sand; 2,000 pounds per square inch (13.8 MPa) compressive strength.
  - D. Beams:  
Beams shall be open-top tubular extrusion of size and shape of size required by structural engineering design or as shown on the drawings, top edges thickened for strength and

**DIVISION 10. SPECIALITIES**

**SECTION 107326 WALKWAY COVERINGS (CONTINUED)**

designed to receive deck members in self-flashing manner. Structural ties shall be installed in tops of all beams.

- E. Deck:
    - 1. Deck shall be extruded self-flashing sections interlocking into a composite unit.
    - 2. Closures at deck ends shall be welded plates.
  - F. Fascia:

Fascia shall be manufacturer's standard shape. Size as indicated on the drawings.
  - G. Flashing:

Flashing shall be .040 aluminum (minimum). Any thru-wall flashing to be by others.
  - H. Fasteners:
    - 1. Deck Screws (rivets not permitted): Type 18-8 non-magnetic stainless steel sealed with a neoprene "O" ring beneath 5/8" outside dimension, conical washer.
    - 2. Fascia Rivets: Size 3/16" by 1/2" grip range aluminum rivets with aluminum mandrel.
    - 3. Bolts: All bolts, nuts and washers to be 18-8 non-magnetic stainless steel.
    - 4. Tek Screws: Not permitted.
  - I. Protective Coating:

Aluminum columns embedded in concrete shall be protected by a coating of clear acrylic.
  - J. Warranty:
    - 1. Manufacturer shall warrant the entire system against defects in labor and materials for a period of one (1) year commencing on the date of substantial completion as established in Division One of these specifications.
    - 2. Intention of this warranty is the manufacturer will come onto the job site and do all necessary to effect corrections of any deficiencies.
    - 3. Prima Facie Evidence of defects in labor and material may include but is not limited to, one or more of the following:
      - A. Moisture leaks
      - B. Metal failure including excessive deflection
      - C. Fastener failure
      - D. Finish failure
- 2.03 Fabrication:
- A. Comply with indicated profiles, dimensioned requirements and structural requirements.
  - B. Use sections true to details with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture, free from defects impairing strength and durability.
  - C. Bents:
    - 1. Bents shall consist of shop welded one piece units or field bolted sections with neatly mitered corners.
    - 2. All welding do be done by heli-arc process.
    - 3. Suitable edge preparation shall be performed to assure 100% penetration.
    - 4. Grind welds only where interfering with adjoining structure to allow for flush connection.
    - 5. Field welding is not permitted.
    - 6.. Mechanical joints:
      - A. When size of bents do not permit shipment as a welded unit, concealed rigid mechanical joints may be used.
      - B. Mechanical joints shall consist of stainless steel bolts with a minimum of two (2) bolts per fastening.
      - C. Bolts and nuts shall be installed in a concealed manner utilizing 1/2" thick by 1 1/2" aluminum bolt bars welded to structural members.

**DIVISION 10. SPECIALITIES**

**SECTION 107326 WALKWAY COVERINGS (CONTINUED)**

- D. All such mechanical joints must be detailed on shop drawings showing all locations.
- D. Roof Deck:
  - 1. Extruded aluminum shapes, interlocking self-flashing sections.
  - 2. Interlocking joints shall be positively fastened at 8" o.c. creating a monolithic structural unit capable of developing the full strength of the sections.
  - 3. Fastenings must have minimum shear strength of 350 pounds each.
  - 4. Shop fabricate to lengths and panels widths required for field assembly.
  - 5. Depth of sections to comply with structural requirements. Provide shop induced camber in deck units to offset dead load deflections.
  - 6. Welded dams are to be used at non-draining ends of deck.
- E. Expansion joints, design structure for thermal expansion and contraction. Provide expansion joints as required.
- F. Exposed rivets used to fasten bottom of fascia to deck to have finish to match fascia.
- G. Apply a shop applied dip-coat of clear acrylic enamel to each column end terminating in concrete to insulate from electrolytic reaction. Column ends shall be pierced to "key" grout to bent for maximum uplift protection.

**PART 3 - EXECUTION**

- 3.01 Delivery, Storage and Handling:  
Deliver, store and handle covered walkway system components as recommended by manufacturer. Handle and store in a manner to avoid deforming members and to avoid excessive stresses.
- 3.02 Examination:
  - A. Examine adjacent work for conditions that would prevent quality installation of system.
  - B. Do not proceed until defects are corrected.
- 3.03 Concrete Footings:
  - A. Concrete walkways and turned down footings are to be installed by others.
  - B. Placement of columns and core drilling necessary to anchor the base of the walkway columns shall be arranged by the walkway cover installer.
- 3.04 Field Dimensions:  
Walkway installer shall field confirm bent locations, dimensions and elevations shown on shop drawings prior to fabrication.
- 3.05 Installation:
  - A. Preparation:  
Erection shall be preformed after all concrete, masonry, and roofing work in the vicinity is complete and cleaned.
  - B. Erection: Set roof support frames (bents) into pockets core drilled into the edge of the turn-down along the side of the concrete walkways; set to required elevations, align, plumb and level; and grout in place with 2,000 p.s.i. Portland cement grout. Assure that grout fills all voids and "keys" to columns. Fill downspout units with grout to bottom of discharge level. Install aluminum deflectors after grouting. Follow manufacturer's instructions. Match to finish and elevation of adjacent sidewalks.
  - C. Install roof deck sections, accessories and related flashing in accordance with manufacturer's instructions. Align and anchor roof deck units to structural support frames.
  - D. Drainage:  
Walkway canopies shall drain internally, from fascia/gutter to columns, and be discharged

**DIVISION 10 SPECIALITIES**

**SECTION 10530 EXTRUDED ALUMINUM WALKWAY COVERS (CONTINUED)**

at or near finished grade level. Cantilevered canopies shall be down spouted from fascia/gutter to columns via a 6" x 3" extruded aluminum drain beams and shall discharge at or near finished grade level. Canopies with projections less than 10'0" shall have a minimum of 1/8" per foot pitch and those with projections 10'0" and greater shall have a minimum pitch of 1/4" per foot.

- D. Non-draining columns shall have weep holes installed at the top of the concrete to remove condensation.
  - E. Assemble all components in a neat, workmanlike manner.
- 3.06 Flashing and counterflashing:
- A. Flashings:  
Flashing required between covered walkway system and the adjoining structure to be aluminum, compatible with the construction of the cover.
  - B. Counterflashings:  
Counterflashing required between covered walkway system and adjoining structures to be provided as required.
- 3.07 Cleaning and Protection:
- A. Damaged Units:  
Replace roof deck panels and other components of the work which have been damaged or have deteriorated beyond successful minor repair.
  - B. Cleaning:  
Remove protective coverings at time in project construction sequence which will afford greatest protection of work. Clean finished surfaces as recommended by manufacturer. Maintain in a clean condition during construction.
  - C. Protection:  
Advise protection and surveillance procedures, as required to ensure that work of this section will be without damage or deterioration at time of substantial completion.

End of Section



**DIVISION 31. EARTHWORK**

**SECTION 312000 GRADING, EXCAVATION AND FILL**

**PART 1 - GENERAL**

- 1.01 Section Includes:
- A. General excavation, to produce the grades, lines and levels as indicated for:
    - 1. Canopy column footings.
    - 2. Underground storm drainage.
    - 3. As otherwise indicated on drawings.
  - B. Compressive soil tests for areas that will receive new footings.
  - C. Filling and backfilling for all work herein as required to bring work to required levels.
- 1.02 Related Sections:  
Lawns and Grasses (SECTION 329200).
- 1.03 Quality Assurance:  
Design Criteria and Compaction Standards:  
Required densities of compaction are expressed hereinafter in terms of percentages. Such terms shall mean percentages of maximum density at optimum moisture content, as determined and controlled in accordance with the following:
- 1. Laboratory Test: ASTM D698.
  - 2. Field Test: ASTM D1556, ASTM D2937, ASTM D2922.

**PART 2 - PRODUCTS:**

- 2.01 Soil Material:
- A. Fill Material:
    - 1. Material for fill shall be free from roots, wood, or other organic material.
    - 2. Stones larger than 2" maximum dimension shall not be used in fill.
    - 3. Provide suitable excavated material for required fills and backfills. Provide any additional fill material from off Site as necessary to produce required grades, at no additional cost to Owner.
  - B. Granular Backfill: Free-flowing, graded sand or gravel as approved by the Architect.

**PART 3 - EXECUTION:**

- 3.01 Added or Omitted Excavations:
- A. Should the bearing at the levels indicated by found by the Architect to be insufficient, he may order the excavation carried to proper bearings. Such work shall be classified as additional work and the cost thereof shall be determined by unit price as stated in the contract for construction.
  - B. Should proper bearings be found at a depth less than indicated, the Architect may order the omission of excavations. The Contractor shall allow a credit for work omitted by unit price in contract for construction.
- 3.02 Rock Excavation:  
In the excavation, materials that cannot be removed by handwork or power equipment will be considered additional work and will be paid for by Change Order and on the basis of unit prices to be agreed upon prior to commencement of rock removal.
- 3.03. Protection:
- A. Protect all adjacent buildings and work from damage.
  - B. Protect all underground utilities, have area of excavations check for underground utilities prior to commencement.
- 3.04 General Requirements For Excavation:

**DIVISION 31. EARTHWORK**

**SECTION 312000 GRADING, EXCAVATION AND FILL (CONTINUED)**

- A. Provide excavation for new construction as shown on Drawings.
  - B. Earth herein is assumed to be without rock or stone and that unusual subsurface conditions will not be encountered.
  - C. Make cuts to proper depth with proper allowance made for stone fill if required.
  - D. Carry tops of footings at least 16 inches below the finished grade whether or not they are so shown, except where footings rest on rock.
  - E. If rock occurs in areas of excavation, level to a clean, even, hard surface. Remove by the use of pneumatic tools, with precautions taken to avoid damage to adjacent structures.
  - F. Trenches and openings for structures shall be excavated in open cut, from the surface, to required depth, and accurately to grade. Trenches shall be excavated no wider than necessary to work efficiently, and to comply with safety regulations.
  - G. Notify Architect when excavations have reached prescribed depths. No pipe shall be laid, forms constructed, etc., until excavations have been inspected by Architect, and have been specifically approved.
  - H. If requested, have compressive soil tests on areas to receive foundations performed by an independent testing laboratory as selected by the Owner prior to the placement of concrete footings. Provide field reports of compressive soil tests to the Architect, cost of testing to be paid by the Contractor.
  - I. Contractor shall (at all times) take such precautions as are necessary to keep the work free from ground or surface water.
    - 1. Provide pumps of adequate capacity to remove water from excavations.
    - 2. Remove water in such a manner that interference with progress of the work will be avoided.
    - 3. Pipe shall not be laid when condition of trench or weather is unsuitable for such work.
  - J. When material at the bottom of excavation is soft or otherwise unsuitable, it shall be removed to such depth as Architect may require, and shall be replaced with granular material or earth as hereinafter specified and thoroughly compacted. Bottoms of trenches shall be shaped as previously specified.
  - K. Pile excavated material (suitable for backfill or fill) in an orderly manner and at a sufficient distance back from edge of trench or opening to avoid slides or cave-ins. (2'0" minimum clear distance).
- 3.05 Shoring and bracing:
- A. Do all shoring and bracing which is necessary to support adjoining earth, existing structures, or for the protection of the work or workmen.
  - B. Remove as backfilling progresses.
- 3.06 Backfilling:
- A. All excavations shall be backfilled immediately after structures are in place, after having been inspected, and after locations have been recorded. Under no circumstances shall water be permitted to rise in unbackfilled trenches and excavations after structures have been placed.
  - B. Water or aerate as necessary and thoroughly mix to obtain a moisture content which will permit proper compaction.
  - D. Remainder of trench backfill and backfill around structures shall be placed in layers not exceeding 1'-0" in depth, with each layer carefully and thoroughly mechanically tamped. Backfill for trenches shall be compacted to 95 percent maximum density.
  - E. Place fill under building or parking areas under the supervision of the Owner's soils engineer. Copies of field reports of compaction tests to the Architect. Supervision and testing to be paid for by the Owner.

**DIVISION 31. EARTHWORK**

**SECTION 312000 GRADING, EXCAVATION AND FILL (CONTINUED)**

- F. Stones used in backfill shall be distributed throughout the mass.
  - G. Contractor may backfill all trenches with granular material (at his option and at no additional cost to Owner).
  - H. Puddling or water flooding for consolidated backfill material will not be permitted.
  - I. After fill has settled, fill shallow places to proper grades.
- 3.07 Final grading:  
Finished grades indicated are the final grades ready for planting, or actual top of paving or concrete.
- 3.08 Tolerances:
- A. Surface of finished subgrade generally shall be not more than 0.2 foot above or below established grade or approved cross section, with due allowance for topsoil, sod, and pavement depth. Tolerance for areas within 10 feet of buildings, and all areas to be paved shall not exceed 0.15 foot above or below established grade.
  - B. All ditches and swales shall be finished to drain readily. Unless otherwise indicated, subgrade shall be sloped evenly to provide drainage away from building walls in all directions at a grade not less than 1/4" per foot.

End of Section

**DIVISION 32. EXTERIOR IMPROVEMENTS**

**SECTION 329200 TURF AND GRASSES**

**PART 1 - GENERAL**

- 1.01 Section Includes:
- A. Finish grading.
  - B. Furnishing topsoil.
  - C. Soil conditioning.
  - D. Planting and maintenance of lawns.
- 1.02 Guaranty/Warranty:
- A. Guaranty shall include the following:
    - 1. Seeding work, and material under this Section shall be guaranteed through maintenance period, and until next planting season (as defined herein for seeding).
    - 2. If satisfactory stand of grass has not been produced at end of maintenance period, Contractor shall renovate and reseed lawn in unsatisfactory portions immediately (or as soon as weather permits).
    - 3. If satisfactory stand of grass is produced by June 1st of the following year, lawn will be accepted. If stand is not satisfactory or accepted, perform complete replanting during the following planting season in conformance with requirements of this Section.
    - 4. The satisfactory stand of grass shall consist of 80 percent minimum live coverage for seeded grass with no bare spots greater than 3 square feet spaced no closer than 10 feet, the total of which shall not exceed 20 percent of the grassed area.
- 1.03 Delivery, Storage, and Handling:  
Storage: Store lime, fertilizer, and seed in dry area free from dampness and physical abuse.

**PART 2 - PRODUCTS**

- 2.01 Materials:
- A. Topsoil
    - 1. Natural, fertile, friable topsoil, representative of local productive soil, and 90 percent free of clay lumps, or other foreign matter larger than two-inch diameter.
    - 2. Not frozen or muddy; acidity range pH 5-7;
    - 3. Gravel portion (particles larger than 2 mm) shall not exceed 15 percent of total volume.
  - B. Sand: Clean, coarse, well-graded material meeting all of requirements of ASTM C 33 for fine aggregate.
  - C. Coarse Sand: Material free from silt, loam, clay, and organic matter;
  - D. Gravel: Screened, crushed stone or washed gravel, free from clay and silt; No.57 gradation
  - E. Lime: Ground Dolomitic limestone not less than 85 percent total carbonates and magnesium, ground so that 50 percent passes 100 mesh sieve and 90 percent passes 20 mesh sieve. Coarser material will be acceptable, provided specified rates of application are increased proportionately on basis of quantities passing No. 100 mesh sieve.
  - F. Commercial Fertilizer:
    - 1. Delivered in original, unopened containers bearing Manufacturer's guaranteed analysis.
    - 2. Standard Commercial 10-10-10 analysis.
  - G. Peat: Natural residue formed by decomposition of reeds, sedges, or mosses from fresh water site; free from lumps, roots, and stones. Absorbing at least 4 times its dry weight of water. Organic matter not less than 90 percent on dry-weight basis.
  - H. Seed Mixtures: Rebel, Confederate, or Falcon
  - I. Straw Mulch: Threshed straw of oats, wheat, or rye; free from seed of obnoxious weeds; or clean salt hay.

**DIVISION 32. EXTERIOR IMPROVEMENTS**

**SECTION 329200 TURF AND GRASSES (CONTINUED)**

**PART 3 - EXECUTION**

- 3.01 Preparation of Subgrade:
- A. Thoroughly scarify ground to a minimum depth of 6 inches over entire surface to be planted.
  - B. Rake to uniform grade removing all stones, clods, and buried debris.
  - C. Remove all trash and stones exceeding 2 inches in diameter from area to a depth of two inches prior to preparation and planting grass.
- 3.02 Topsoil and Finish Grading:
- A. Spread topsoil (and soil conditioner) over prepared rough grade working in mixture of sand and topsoil.
  - B. Rake area of topsoil to uniform grade so that all areas drain.
  - C. Lightly compact soils before planting grass.
- 3.03 Liming and Fertilizer:
- A. Apply lime uniformly with mechanical spreader to entire area to receive grass. Apply at rate determined from soil test.
  - B. Apply commercial fertilizer, distributing uniformly with mechanical spreader, at rate determined from soil test.
  - C. Work lime and fertilizer into top 3" to 4" of soil.
- 3.04 Seeding:  
Sow grassed areas evenly with mechanical spreader at rate of 2 lbs. per 100 sq. ft. Roll with cultipacker to cover seed, and water with fine spray. (Method of seeding may be varied at discretion of Contractor on his own responsibility to establish a smooth, uniformly grassed area).
- 3.05 Mulching and Protection:
- A. Mulch all areas by spreading uniform, light cover of straw mulch over seeded area. After applying the straw mulch on the grassed areas. Sprinkle area after application of straw.
  - B. Mulch all areas with slope steeper than 20% by placing fiber mulch in strips paralleling slope to completely cover newly seeded areas. Pin mulch to ground with 4-inch long wire-staples at 5-foot intervals immediately after seeding.
- 3.06 Maintenance:
- A. Maintenance Period: Begin maintenance immediately after each portion of lawn is planted. Continue until issuance of Certificate of Final Acceptance of Project.
  - B. Maintenance Operations:
    - 1. Water to keep surface soil moist (to depth of roots of grass seedlings).
    - 2. Repair washed-out areas by filling with topsoil, liming, fertilizing, seeding, and mulching.
    - 3. Replace mulch on banks when washed or blown away; repair fence, as required.
- 3.07 Inspection for Acceptance:  
At end of maintenance period on completed lawn, and on written notice from Contractor, Project Manager will, within 15 days of such written notice, make an inspection of lawn to determine if satisfactory stand of grass has been produced. If satisfactory lawn has not been established, another inspection will be made after written notice from Contractor that lawn is ready for inspection following next growing season.
- 3.08 Clean-Up:  
Completion: On completion of the Work, remove from Site all equipment and other articles used, and leave areas in clean and neat condition.

End of Section

**DIVISION 33. UTILITIES**

**SECTION 334000 SITE DRAINAGE**

**PART 1 - GENERAL**

- 1.01 Work included:
1. Smooth PVC storm drainage piping, suitable for direct burial.
  2. Unperforated corrugated drainage pipe for above ground use where concealed under existing wood decking..
- 1.02 Work included under other sections:  
General Earthwork (Section 312000).

**PART 2 - PRODUCTS**

- 2.01 Excavation.  
See Section 312000 for applicable standards.
- 2.02 Smooth un-perforated plastic drainage pipe:
- A. Smooth PVC, Schedule 40.
  - B. Suitable for direct burial.
- 2.03 Corrugated plastic drainage pipe:
- A. Type C HDPE corrugated unperforated drainage pipe.
  - B. For above ground use under wood decking as required to connect column drains within area of existing wood decks to storm piping.

**PART 3 - EXECUTION**

- 3.01 All excavations of every description and in whatever substances encountered are to be performed to depths indicated on drawings or as otherwise specified. During excavation, material suitable for backfilling shall be piled in an orderly manner a sufficient distance from banks of trench to avoid overloading to prevent slides or cave-ins. All excavated materials not required or suitable for backfill shall be removed and wasted as directed. Surface water shall be prevented from flowing therein by surface flow, seepage or otherwise, shall be removed by pumping or other approved method. Such sheeting, bracing and shoring shall be done as may be necessary for protection of work and for safety of personnel.
- 3.02 Trenches:
- A. To depths required for proper drainage to points indicated on drawings.
  - B. Widths to accommodate pipe and workmen.
  - C. Shore and brace as necessary for protection of work and workmen.
  - D. Lay pipe on solid earth.
  - E. Excavate for hubs.
  - F. Provide brick support under pipe where trenches are too deep or not to proper pitch. Avoid over excavations.
  - G. Earth cover of two feet minimum on exterior.
  - H. Back fill evenly on both sides of pipe simultaneously and in layers of 12 inches, tamp each layer.
- 3.03 PVC Piping:
- A. Placing pipe:
    1. Each pipe shall be carefully examined before being laid. Defective or damaged pipe shall not be used. Pipe shall not be laid in water. All pipe in place shall have been inspected before backfilling.
    2. Pipe laying shall proceed upgrade with spigot ends of pipe pointing in the direction of the flow.

**DIVISION 33. UTILITIES**

**SECTION 334000 SITE DRAINAGE (CONTINUED)**

- B Pipe joints:  
Use solvent recommended by manufacturer. Seat pipe firmly into fittings.
  - C. Movement of construction machinery:  
In compacting by rolling or operating heavy equipment parallel with pipe, displacement of or injury to pipe shall be avoided. Movement of construction machinery over pipe at any stage of the construction shall be at the Contractor's risk. Any pipe damaged thereby shall be repaired or replaced at expense of Contractor.
  - D. Compaction:  
Cohesion less materials include gravels, gravel-sand mixtures, sands, and gravelly sands. Cohesive materials include clayey and silty gravels, gravel-silt mixtures, clayey and silty sands, sand-clay mixtures, clays, silts, and very fine sands. When results of compaction tests for moisture-density relations are recorded on graphs, cohesionless soils will show straight lines or reverse-shaped moisture density curves, and cohesive soils will show normal moisture-density curves.  
Minimum density:  
Backfill over and around the pipe shall be compacted at approved moisture content to the following applicable minimum densities:
    - A. Under streets, parking areas, walkways, concrete and asphalt paving, including adjacent shoulder areas:  
95 percent ASTM C698 maximum density for cohesive material and 95 percent ASTM D698 maximum density of cohesionless material, up to the elevation at which the requirements for pavement sub-grade materials and street.
    - B. Under nontraffic, grassed areas:  
85 percent ASTM D698 maximum density.
    - C. Top layer of subgrade shall be compacted to depth and in accordance with requirements specified in Section 312000 Grading, Excavation and Fill.
- 3.04 HPDE corrugated piping:
- A. Install above ground under existing wood decking with silt and water tight joints.
  - B. Furnish with factory pipe-to-pipe and pipe-to-downspout connections.

End of Section