

*project development  
Plans and specifications*

## **Design and Construction Procedures**

*post construction  
directory of agencies*

Revised October 2007



Division of School Support – School Planning  
6319 Mail Service Center, Raleigh, NC 27699-6319  
Voice 919-807-3554 Fax 919-807-3558  
<http://www.schoolclearinghouse.org>



# Foreword

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Providing public school facilities that support and enhance efforts of children to learn and of teachers to teach is a continuing challenge to local school administrative units across our state. Research clearly indicates a relationship between the school facility and climate, order, and safety that can result in positive benefits to the educational endeavor. Creating a physical environment conducive to safety and success for every child is a goal we all share.

Many school administrators and school facilities designers are involved infrequently in the process of planning and building facilities and are, therefore, not fully familiar with the nuances of moving through the process in orderly and efficient sequence. This publication should prove particularly helpful when addressing current and emerging facilities needs. We hope you find it useful.



Howard N. Lee, Chair  
State Board of Education



June St. Clair Atkinson, State Superintendent  
North Carolina Department of Public Instruction

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Inquiries or complaints should be directed to:  
the Office of Curriculum and School Reform Services  
6307 Mail Service Center  
Raleigh, NC 27699-6307  
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# *Acknowledgments*

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## *Introduction*

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Local boards of education and school facilities designers, in meeting classroom facilities needs pursuant to GS 115C-521, can experience confusion and frustration with the myriad of requirements and regulations encountered in the construction and renovation processes. This may be particularly true in school systems not regularly engaged in building programs. Reviews, certifications and approvals that can ensure safe and sanitary environments for learning can also result in expensive delays in project completion, where due care and planning are not exercised.

This publication identifies a number of procedures, regulations, and agencies associated with the construction of school facilities and provides information that can expedite logical and efficient planning. Since both regulations and agencies tend to change with time, the contents of the guide should not be assumed to be all-inclusive, but rather current examples based upon recent school construction experiences in the state.

Since final responsibility for meeting all applicable codes and other regulations rests with the owner, a directory of agencies is included in the Appendix. In addition, staff with the School Planning Section of the Department of Public Instruction may be reached at (919) 807-3554 for consultation.

## *Using the publication*

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This publication sets forth typical procedures for the planning and construction of public school facilities. It is neither comprehensive nor all-inclusive, but promotes an initial awareness of procedures, regulations, and agencies associated with the design and construction processes. The information herein in no way supersedes federal, state or local codes or regulations.

As facilities planning is initiated, the related section(s) of the publication should be consulted for procedures that are suggested or that may be required during each phase of the project, through completion. Additionally, early involvement of design professionals who are accustomed to dealing with regulatory agencies can significantly reduce the possibility of unnecessary delays. Agency representatives, identified in the Appendix, should be consulted regarding specific requirements and approval processes.

## *School Planning on the Web*

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Many, more detailed guidelines and publications are available for download and printing on the school planning website: <http://www.schoolclearinghouse.org>

## Review of Projects by NC DPI School Planning

### Types of Projects We Review

All New Construction, Renovations, Additions

New athletic fields, grandstands, press box, field houses, concession stands, dugouts, etc.

New and Relocated Modular classroom units, ramps, steps, walkways, etc. including foundations

Repair or replacement of structural systems

New “dropped ceiling” in existing schools

Replacing Windows or Doors

Demolition of existing *school* building

Reroofing, over-roofing

Relocating partitions; adding or deleting doors

New Parking or Drives

Technology system, security system, CCTV, etc.

Improvements required by ADA

Change-out of plumbing fixtures or change in type of fixtures

New domestic water heating system, or upgrade

New HVAC systems; new boilers; new chillers; changes in type of system; demo and replacement of air distribution system, etc.

Upgrade or redesign HVAC control system

New energy conservation system

Complete replacement of exist HVAC or plumbing piping systems; extension of existing system

Major components of Power Distribution System

New lighting systems (interior or exterior)

Any new system affecting health, or welfare of students or personnel such as fire suppression, emergency power generation, etc.

### Types of Projects We Do Not Review

*Demolition of buildings other than school buildings*

*Roof patching or maintenance.*

*Any repair or maintenance, such as replacing flooring, patching walls, repainting, etc.*

*Repairing asphalt, potholes, etc. or resurfacing existing*

*Upgrades of fire alarms, other existing systems*

*Additions of simple ramps, etc. or signage*

*Plumbing replacements in-kind; replace faucets or other minor components*

*Water heater replacement with same type and size.*

*HVAC equipment replacement in-kind; small air handling or condensing units (5 ton or less); air diffusers and grills; fan, heaters, etc.*

*Replacement of HVAC control components*

*Repair of existing insulation*

*Repair of existing piping*

*Adding electrical outlets to existing systems*

*Replacing or adding lighting fixtures to existing systems*

*Replacement of isolated safety components with new elements meeting code and similar to existing.*

## *Project development phases*

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G.S. 115C-521 requires that before a board of education invests any money in any new building, it will first develop plans based upon consideration of the State Board of Education's *North Carolina Public School Facilities Guidelines*, submit those plans to the State Board for its review and comments, and review the plans based upon consideration of the comments it receives from the State Board. The School Planning Section in the Division of School Support has been designated the State Board's representative in that process.

For purposes of complying with the intent of this statute, A new building is interpreted to include new schools, additions to existing schools, and major renovations; small building projects such as workforce development shops, athletic facilities, field houses, greenhouses, concession stands, press boxes, weight rooms, storage facilities, and bleachers; and modular buildings. Consultation with School Planning staff during each of the project development phases, including educational programming and specifications, is expected.

### **Schematic Design**

The designer should consult with the owner to review the program described in the educational specifications and to establish project requirements. The designer should confer with consultants on the feasibility of various systems (structural, mechanical, electrical, etc.) for meeting functional and spatial requirements and any special conditions of the educational program. It is essential that consultants for site work, building systems, and other related areas be involved early in the planning process.

A schematic design submittal should include, as a minimum:

1. A location map, north point, dimensions for site boundaries, acreage, information about ownership and uses, and potential uses of adjacent property.
2. A scaled site plan showing facility location and size in relation to existing buildings, walks, roads, utilities, etc. The designer should be responsible for examining existing conditions and reviewing as-built drawings related to the project. Emphasis should be placed on early determination of the adequacy of utilities services and whether on-site utilities systems will be required.
3. A general description of the project that is based on the designer's studies and that indicates construction materials, framing system, and mechanical, electrical, and plumbing systems.
4. An indication of whether the site is located in a municipal watershed area or flood plain or involves wetlands.

5. Single-line drawings of the floor plan, to include mechanical and electrical rooms, service areas, and the like.
6. For existing schools, provide:
  - A. Floor plans of the main floors that indicate elevations and the construction date and type for each building. Proposed new buildings should also be shown on these drawings.
  - B. A site plan which shows existing walkways; developed areas for parking, athletics, play; and roads. Existing water supply lines, overhead tank and well locations, and storm drainage and sewage disposal systems should be shown, as should proposed new systems for the project.

A site that involves development in a 100-year flood plain must comply with local ordinances. Questions should be addressed to the N.C. Division of Emergency Management, National Flood Insurance Program Branch at (919)733-5392.

For information about construction and maintenance of highway turn lanes, access roads, or parking areas for school buses, contact the N.C. Department of Transportation division engineer for your area. A directory is included in the Appendix.

## **Design Development**

Based upon review comments from the schematic design submittal, the designer and consultants should jointly prepare economic and energy studies for systems being considered for the project. Two or more structural, electrical, and mechanical systems that are feasible for the project should be considered, with the best-suited systems being selected. The soil investigation report should be submitted with all other reports and studies made for the project.

The design submitted, which should be based upon these reports and specific project requirements, should include as a minimum:

1. Site plans showing topographic information, horizontal and vertical control points, general elements of drainage and sedimentation control, utilities requirements, and other site data furnished on the previous submittal. Include accessible routes to parking and play fields.
2. Outline specifications describing materials and systems.
3. Scaled architectural floor plans with cross sections at appropriate points to show elevations, wall sections, and ceiling heights.
4. Room finish schedules showing material types for floors, walls, and ceilings.

5. Structural drawings and data, to include:
  - A. Soil boring logs from the sub-surface exploration investigation report and allowable soil bearing pressure and live loads used in the design.
  - B. A foundation plan showing basic elements of the foundation and additional details and information necessary to delineate the types, sizes, and probable depths of special foundations such as piles or caissons.
  - C. Typical floor and roof framing plan that shows types, sizes, and spacing of principal members.
  - D. The location of reinforced shear walls, bracing, and moment frames, braced frames with additional details and information necessary to describe the method of lateral load resistance.
  
6. Mechanical drawings that show basic equipment layouts and locations of heating, ventilating, and air conditioning systems; a schematic of temperature control systems; and diagrammatic sketches of air, hot water and/or steam systems, and chilled and condenser water systems.
  
7. Plumbing drawings that show water supply source, waste disposal termination, and general development of the plumbing system.
  
8. Electrical drawings that show basic equipment, fixtures, and locations of electrical system power distribution components, to include primary service circuits, transformers, main switch gear, motor control centers, power and branch circuit panels, and a plan detail of the switchboard giving dimensions to comply with National Electrical Code 110-16. Show locations of data equipment closets, etc.

To ensure the construction of new schools and renovations that are energy efficient, all energy-consuming systems, including heating, ventilating, and air conditioning, should be designed based upon the *Energy Guidelines for School Design and Construction* (N.C. Department of Public Instruction, School Planning Section) or similar criteria, pursuant to G.S. 115C-521.

## **Construction Documents**

After consideration of the review comments from the design development submittal, the designer will prepare working drawings and specifications setting forth the project in detail and prescribing work to be done. The documents should specify materials, finishes, and workmanship; mechanical and electrical systems; special equipment; site work and utilities services and connections; and sample construction contracts. Design calculations for all systems are maintained in reproducible form by the designer, for submittal upon request. Energy-use data are to be provided. Include the Building Code Summary data sheet.

Specifications and contract documents should be prepared on 8.5" x 11" paper and bound in the following order:

- Notice to Bidders
- Table of Contents
- Instructions to Bidders and General Conditions
- Supplementary General Conditions, including MBE guidelines
- Technical Specifications
- Form of Proposal
- MBE Appendices A-D
- Sample construction contract(s) with associated bond forms

For contracts where special excavation and/or foundations will be required, the specifications should include the designer's estimated bid quantity of material(s) involved. Such material(s) quantities may include, as examples, mucking (cubic yards), caisson earth and rock excavation (cubic yards), piling (lineal feet), or rock excavation (cubic yards). In each case, a corresponding unit price should be quoted in the Form of Proposal for final adjustment of quantities actually encountered. The designer's estimates should be based upon the sub-surface investigation reports, field conditions, and other information obtained locally.

It is recommended that the Certificate of Review from the School Planning Section be obtained prior to advertisement for bids. Contracts should not be signed prior to completion of the review process and issuance of a Certificate of Review.

Seals and signatures of the designers and dates of signing should be on each sheet of the construction drawings and on the title sheet of the specifications. As a general rule, seals appropriate to architecture or engineering should appear on drawings related to those respective fields of design.

## *Plans and specifications*

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Plans and specifications for all school construction projects should be reviewed and/or approved by designated local and state agencies prior to the solicitation of bid proposals. All projects, in this context, is interpreted to include new schools, additions and renovations to existing schools, small building projects, and modular buildings. The following are representative examples of agencies and the functions they perform related to the review or approval of plans and specifications for school construction projects.

### **North Carolina Department of Public Instruction: School Planning**

School Planning encourages design review meetings to expedite the formal review process. Plans and specifications are reviewed against the *North Carolina Public Schools Facilities Guidelines* for appropriateness for the educational program; structural and functional soundness, safety, and sanitation; and long-term cost efficiency (G.S.115C-521c). Plans are reviewed against the *Energy Guidelines for School Design and Construction* for building design and operation that take into account local conditions in an effort to reduce the impact of operation costs on local and state budgets (G.S.115C-521c).

Where a new building is to be constructed to replace an existing building, an analysis that compares the costs and feasibility of building the new building with those of renovating the existing building and clearly indicates the desirability of building the new building is required. Upon receipt by School Planning, a copy is submitted to the North Carolina Historical Commission (G.S.115C-521c). A packet entitled *Feasibility and Cost Analysis*, available from School Planning, can be helpful in expediting the analysis but is not required.

Upon completion of its review of plans and specifications, School Planning will forward its comments to the local board of education for consideration (G.S.115C-521c). Upon receipt of the board's responses to its comments (if required) or upon completion of the review process, School Planning will issue a Certificate of Review, which is valid for a period of one year. If construction is not begun within one year, a subsequent review should be requested.

### **North Carolina Department of Insurance, Office of the State Fire Marshal or the Local Building Inspector**

If the project entails *new* construction greater than 20,000 square feet, reviews are required by the Office of the State Fire Marshall. For all renovations and projects less than 20,000 square feet of *new* construction, reviews are performed by the Local Building Inspector. Plans are reviewed for conformance with the North Carolina State Building Code. Approval must be obtained for all construction projects, to include additions and renovations. Plans and specifications should be submitted with a Building Code Summary Sheet. Plans should be

reviewed at each design phase.

**Office of the State Fire Marshal**  
**Engineering Division**  
**North Carolina Department of Insurance**  
322 Chapanoke Road, Suite 200  
Raleigh, NC 27603  
919-661-5880  
919-662-4414 (fax)

## **North Carolina Department of Environment and Natural Resources**

### **CONNECTIONS TO WASTEWATER SYSTEMS**

Note: Construction contracts may not be signed until the wastewater treatment system is permitted.

**Public Systems** Contact the Division of Water Quality regional office for regulations and recommendations pertaining to systems under DWQ=s jurisdiction.

**School-owned Systems that Discharge to the Land Surface or Surface Waters**  
Contact the Division of Water Quality regional office for regulations and recommendations pertaining to systems under DWQ=s jurisdiction.

**On-Site Systems for Subsurface Treatment and Disposal** The Environmental Health Section of the local health department shall be contacted, prior to the repair of an existing system or the design of a new system, to conduct necessary investigations and soil and site evaluations and to provide recommendations during planning stages.

The local health department shall be contacted for initial permit issuance or renewal of permits for new or existing systems. Approval of plans and specifications by the On-site Wastewater Section of the Division of Environmental Health 2728 Capital Blvd. 1642 Mail Service Center Raleigh NC 27699-1642 (919) 733-2895 may be required prior to permit issuance by the local health department. No construction permits for new or expanded facilities may be issued until all such applicable permits have been issued. Note that renewal and compliance are contingent upon proper operation and maintenance by a certified operator, whose reports of inspection and other monitoring shall have been submitted to the appropriate agencies (e.g. the local health department or DWQ=s Groundwater Section).

Because of the potentially extended review and approval process, designers are encouraged to complete and submit this portion of the project during the early design phases.

### **SCHOOL CAFETERIAS: SANITATION REQUIREMENTS**

The sanitation requirements of 15A NCAC 18A .2600 (Rules Governing the Sanitation of Restaurants and Other Food-Handling Establishments) and 15A NCAC 18A .2400 (Rules Governing the Sanitation of Public, Private, and Religious Schools) must be met before construction may begin.

A complete set of final working drawings for A permitted food service establishments must be submitted for approval to the Environmental Health Services Section of the Division of Environmental Health (see Directory of Agencies in Appendix) by the architect or engineer, prior to commencement of construction. Site plans should show the locations of dumpsters or containerized systems used to store garbage, and all related cleaning facilities. Upon approval, plans will be forwarded by the Environmental Health Services Section to the local health department for comments and permitting. Small concession stands, etc, shall be submitted to the local health inspector for approval.

### **OTHER SANITATION REQUIREMENTS**

If Pre-K programs are anticipated, comply with childcare sanitation rules published by the Dept. of Environment and Natural Resources, Environmental Health Services Section: “15A NCAC 18A .2800 Rules Governing Sanitation of Child Day Care Facilities” In addition, Licensure through the Division of Child Development of the North Carolina Department of Health and Human Services will be required. A portion of this process will require a building code inspection of existing facilities for compliance with the day care provisions of the building code.

### **SOIL SEDIMENTATION AND EROSION CONTROL**

The provisions of North Carolina General Statutes 113A-50 through -66 and the Rules and Regulations of the North Carolina Sedimentation Control Commission require that protection from erosion and sedimentation be established and maintained during construction, under most conditions. Two sets of drawings and specifications for any project that involves land-disturbing activity that is greater than one acre in size should be provided the Land Quality Section regional office (see Directory of Agencies in Appendix) for review and approval not less than 30 days prior to the commencement of land-disturbing activities.

Statutory requirements include:

1. Protection is required in any instance in which land is disturbed (e.g. by grading, filling, excavating, etc.).
2. Protection for land-disturbing activities along a lake or natural watercourse is required.
3. Slopes are to be protected.
4. The person engaged in or conducting the land-disturbing activities is responsible for maintaining the erosion and sedimentation measures and/or other

facilities

5. The Commission shall have the right to enter onto any property--public or private--for the purposes of investigation or inspection.

## **WATER SUPPLY SYSTEMS**

Verify if sprinklers and/or standpipes will be required as a part of the fire protection system. If so, perform flow and volume tests for adequacy. Determine if pumps and/or storage tanks will be required.

**Public** If possible, obtain water from an approved public water supply source, such as a municipal, county, sanitary district or community system.

**School-owned** When it is not possible or economically feasible to connect to a public water source, it will be necessary for the school to establish its own system. School-owned water supply systems shall comply with Section .0203 PUBLIC WELL WATER SUPPLIES of the *Rules Governing Public Water System*, which is available from the state Public Water Supply Section, 1634 Mail Service Center, Raleigh, NC 27699-1634 919-733-2321 Fax 919-715-4374

To expand an existing groundwater supply system or to establish a new system, contact the regional health office of the Department of Environment and Natural Resources, Environmental Health Division. A field representative will instruct the architect or engineer on procedures and assist in the location of a well site. Upon request, a representative will inspect the site and issue a well site approval.

After plans have been developed for the system, the engineer shall submit three sets of drawings and specifications with an Application for Approval Form, to the Public Water Supply Section, 1634 Mail Service Center, Raleigh, NC, 27699-1634, 919-733-2321 Fax 919-715-4374. Upon approval of the plans, the branch will return one set to the applicant, forward one set to the regional health office of the Public Water Supply Section, and maintain one set in its permanent files. Note that there is a plan review fee required.

## **WETLANDS** (See also U.S. Army Corps of Engineers.)

Any school site involving wetlands requires Section 401 water quality certification. Questions regarding certification should be directed to the Wetlands Unit of the Division of Water Quality: 1650 Mail Service Center · Raleigh, NC 27699-1650 · 733-1786 (see Directory of Agencies in the Appendix). Inquiries concerning field location of streams, ditches, and ponds should also be directed to the Wetlands Unit.

## **FLOOD INSURANCE**

### **National Flood Insurance Program Branch**

### **North Carolina Division of Emergency Management**

North Carolina Department of Crime Control and Public Safety

4713 Mail Service Center

Raleigh, N.C. 27699-4713

Location:

116 W. Jones Street

Raleigh, N.C.

(919)733-3867

## **North Carolina Department of Transportation**

General Statute 136-18(17) authorizes the Department of Transportation to provide to school systems certain services related to the operation of public school buses. In general, where a new school is being constructed, the Division of Highways will pave and maintain bus driveways to DOT standards and stabilize (gravel) and maintain bus parking lots. It is important to note that turn lanes required before the issuance of driveway permits are the responsibility of the owner. The designer should consult with the local engineer of DOT before site purchase if possible, on preliminary driveway locations turn lane requirements, on site car queuing and other matters.

## **North Carolina Historical Commission**

The General Statutes of North Carolina prohibit a board of education from investing any construction money in a new school building to replace an existing school building unless it submits to the State Superintendent of Public Instruction an analysis that: 1) compares the feasibility and costs of building the new building and of renovating the existing building; and 2) clearly indicates the desirability of building the new building. The State Superintendent is required to forward such analyses to the North Carolina Historical Commission.

The School Planning Section of the Department of Public Instruction provides, upon

request, feasibility and costs analysis forms which may be used to conduct and submit the required analysis. All analyses, regardless of format, should be forwarded to School Planning, which acts as designated agent for the State Superintendent. Review of analyses can be expedited by the inclusion of: 1) an address and location map for the existing building; 2) a site plan showing the placement of the existing and proposed buildings; 3) a floor plan of the existing building; and 4) a photograph of the exterior of the existing building.

## **United States Army Corps of Engineers**

The Corps of Engineers is responsible for wetlands delineation and the issuance of Section 404 permits. For any school site that involves wetlands, contact the regulatory field office of the U.S. Army Corps of Engineers (contact DENR Water Quality Section first for subsequent Corps of Engineers certification) for site inspection and permit issuance. To expedite permit issuance, it is recommended that the applicant employ an independent engineer to delineate wetlands prior to requesting confirmation by a C.O.E. field representative.

Contact the Water Quality Section of the Department of Environment and Natural Resources= for Section 401 water quality certification. The Corps of Engineers cannot issue a Section 404 permit until D.W.Q issues a Section 410 certification.

## *Post-construction*

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### **Property Accounting**

Upon completion of the project, the designer should update property accounting records for the project in an 11" x 17" format. Drawings should conform to the project as finally constructed and should be submitted in reproducible form to the owner within 60 days of the final acceptance date. School Planning should be consulted for the suggested format and for information that should be included.

### **Prototype School Designs**

Designs for new schools may be submitted to the School Planning Section of the North Carolina Department of Public Instruction for inclusion on the North Carolina School Designs Clearinghouse web site. Submittal procedures closely approximate those for property accounting purposes. The Clearinghouse may be accessed at <http://www.schoolclearinghouse.org>

## Purchase and Installation of Modular Units

### **BASIC UNITS (Freestanding, single or doublewide temporary, relocatable classroom or toilet units)**

The General Statutes for permanent, site-built structures must also be followed when taking bids for the purchase of these units. Formal or informal bidding procedures (depending on dollar value) must be followed. Refer to School Planning's *Selected Laws Relating to the Construction and Repair of Public School Facilities in North Carolina*.

Units must meet requirements of the current edition (with amendments) of the NCSBC, Volume 1 for educational occupancy; applicable plumbing, mechanical, and electrical codes and other legal requirements; and local zoning ordinances. Shop drawings for each unit must bear the Approval Stamp from a third-party certification agency approved by the Department of Insurance. Manufacturers must be approved for commercial construction by the DOI's Manufactured Building Section. Listings of approved third-party certification agencies and approved modular manufacturers are available from the Department of Insurance.

Wind and other locale-specific code provisions must be met. Fossil fuel-fired heating devices should not be used. Units meeting functional, safety, and code requirements will generally be consistent with School Planning review guidelines.

### **SITE-SPECIFIC PROCEDURES (new and relocated units)**

The following should be provided to School Planning for review and comment and to the local building inspector for approval and permitting.

1. Site plans showing:
  - a. Proposed locations for units and any joining of multiple units
  - b. Distances to both student and staff toilets (200-foot maximum)
  - c. Adequate number of toilet facilities, as required by building code for the entire campus. (May require the addition of modular toilet units.)
  - d. Electric feeders, disconnects, etc., as required by code
  - e. Plumbing service
  - f. Telephone, intercom, MATV, computer and other electronic systems.
  - g. Smooth-surface walks (preferably covered) from permanent buildings to meet accessibility code.
  - h. Confirmation that units are constructed by a DOI-approved manufacturer and certified by an approved third-party agency.

2. Foundation plans showing:

- a. Footings and foundations (piers). Permanent concrete footings must be provided and grouted or surface-bonded piers are required. Bottom of footings must be below the frost line.
- b. Locations, numbers and spacing of up-lift tie-downs or other means of wind anchorage
- c. Locations and framing for steps and ramps to meet accessibility code.

Other connections to permanent buildings should be indicated. Though not required by code, School Planning recommends two-way intercom systems, computer networking, telephone systems, and MATV connections between all units and the permanent school structures.

The above procedures are applicable to relocation of existing modular units as well as purchase and installation of new ones.

## **Pre-engineered Structures and Modular Building Components**

Pre-engineered structures or systems used for school projects, such as metal building systems, modular building components or systems, more than two modular units joined together and grandstands or bleachers, are subject to design review by School Planning. Structural designs are often incomplete when bid documents are completed, although general layouts and other information necessary to conduct architectural reviews are included. Conditional certificates of review that allow mobilization and site preparation to begin prior to completion of final structural designs can be issued following review of bid documents.

Project reviews are completed and certificates of review issued upon certification to School Planning that foundations and other structural systems have been designed by or reviewed and approved by structural engineers for the projects. General Statute 133-1 prohibits project designers being employed by or having financial interest in manufacturers or suppliers of pre-engineered structures.

## **Buildings for Charter Public Schools**

School Planning is required to review and provide comments for all plans for additions and renovations to public school facilities, as well as for construction of new public school facilities, for local school administrative units. While G.S.115C-238.29E(f) exempts charter public schools from that process, School Planning offers equivalent services, upon request, as technical assistance and support to chartering entities or to potential applicants.

G.S.115C-238.29F(a) states,≡A charter school shall meet the same health and safety requirements required of a local school unit.≡ Such requirements are functions of state and local

building codes and are administered by the North Carolina Department of Insurance and local building inspection agencies, respectively.

## Public School Building Contracts

**CHANGES TO G.S.143-128** The following changes to requirements for public building contracts over \$500,000 were made in 1998 and apply only to school building projects.

1. When bids are solicited under *both* the single-prime and separate-prime systems, a school system may select *either* the lowest single-prime bidder *or* the lowest set of separate-prime bidders, based upon its evaluation of the bids.
2. Single-prime bids must identify the plumbing, HVAC, and electrical subcontractors *and* provide the respective bid prices for each subcontractor=s work.
3. A subcontractor *may not* bid more (but may bid less) under the single-prime system than the amount bid as a separate prime contractor.
4. Separate-prime bids *must be received* three hours prior to single-prime bids, but all bids should be opened at the same time.
5. Each contractor *must* submit an affidavit with their bid that they have made a good-faith effort to meet the minority business goals required by G.S.143-128(f). MBE requirements remain the same--only the requirement for an affidavit is added.
6. Construction Management *at Risk* is also an approved method of construction. Recommendations and forms are being developed for use with this method. Contact School Planning for assistance.

**MINIMUM NUMBERS OF BIDS** Bids may not be opened unless at least three competitive bids are received in one of the following combinations. Refer to “Selected Laws Pertaining to School Construction” for additional information on dollar limits for formal/informal bids, use of an architect, etc.

1. Three sets of single prime bids or three complete sets of separate-prime bids ( three each of general construction, plumbing, HVAC, and electrical).
2. Three single-prime bids *plus* one general construction bid under the separate-prime system.
3. Two single-prime bids *plus* one *complete* set of separate-prime bids
4. One single-prime bid *plus* two *complete* sets of separate-prime bids.

If the minimum number of bids has not been received, a school system *must* re-advertise. After the resultant bids are received, bids may be opened and contracts awarded with a minimum of one complete set of separate-prime bids *or* one single-prime bid.

## **RESOURCES**

1. Cash management and accounting, including disbursement and tracking of funds, are provided by the Financial Services and School Business Divisions. Contact Sarah Harris at (919) 807-3636.
2. The Superintendents Bond Advisory Council, comprising local school superintendents, meets periodically to review progress and provide oversight to the process. Contact Dr. Ben Matthews at (919) 807-3500.
3. Although the Office of State Construction does not have regulatory powers over public school construction, many of their publications and guides can be useful for reliable information on bidding and contracts, life cycle cost analysis, Historically Underutilized Business (HUB/MBE) participation, etc. These materials can be found on their web site located at <http://www.nc-sco.com>



# Appendix

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**DIRECTORY OF AGENCIES RELATED TO PROCEDURES  
FOR THE DESIGN AND CONSTRUCTION OF PUBLIC SCHOOL FACILITIES**

**SCHOOL PLANNING SECTION**  
**Financial and Personnel Services: School Support Division**  
**North Carolina Department of Public Instruction**  
**301 North Wilmington Street, Raleigh, NC 27601-2825**  
**6319 Mail Service Center, Raleigh, NC 27699-6319**  
**Phone: (919) 807-3554 Fax: (919) 807-3558**

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Steven Taynton, AIA, Chief  
(919) 807-3560  
staynton@dpi.state.nc.us

Pam Ray, Office Manager  
(919) 715-1981  
pray@dpi.state.nc.us

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**STAFF**

Roger Ballard, RA, Consulting Architect  
(919) 807-3565  
rballard@dpi.state.nc.us

Architectural plan review

Daniel Boyette, Statistical Research Analyst  
(919) 807-3556  
dboyette@dpi.state.nc.us

Local bond statistics; construction costs  
Qualified Zone Academy Bonds  
(QZABs), website

Bob Bryan, P.E., Consulting Engineer  
(919) 807-3564  
bbryan@dpi.state.nc.us

Electrical plan review; code issues

Long Chang, P.E., Consulting Engineer  
(919) 807-3563  
lchang@dpi.state.nc.us

Structural plan review; Literary Loan  
Fund and State Bond Funds

Johnny Clark, P.E., Consulting Engineer  
(919) 715-3182  
jclark@dpi.state.nc.us

Mechanical plan review; indoor air  
quality, acoustics, sustainability

Greg Flynn, RA, Consulting Architect  
(919) 807-3562  
gflynn@dpi.state.nc.us

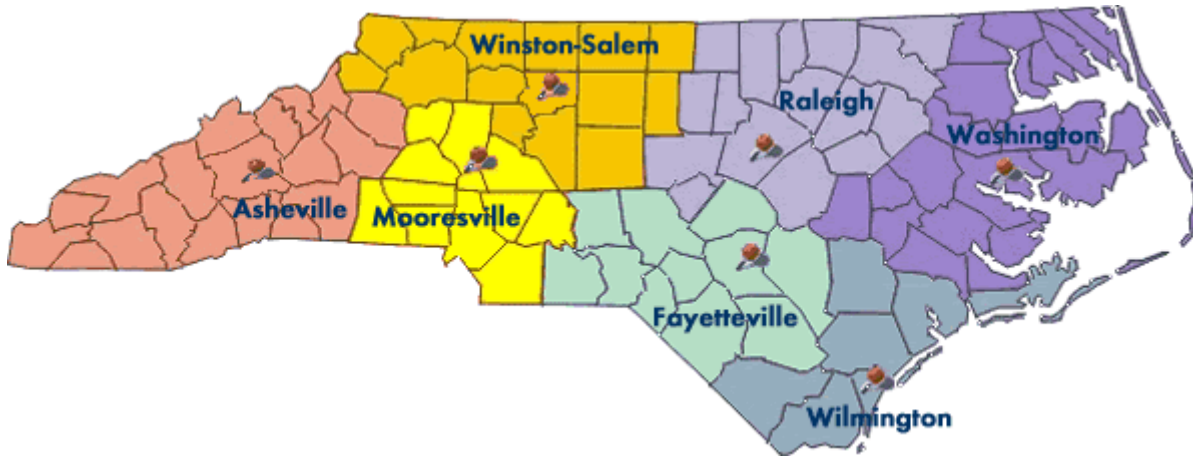
Clearinghouse; architectural  
plan review, sustainability, website

Ken Phelps., RA, School Planning Consultant  
(919) (919) 807-3561  
kphelps@dpi.state.nc.us

Educational program review; PSBCF,  
Lottery; school merger

## DENR REGIONAL OFFICES

There are seven Regional Offices of the Department of Environment and Natural Resources. The Regional Offices perform the Department's duties on a local level. Department employees are located near the public and around counties that we serve. Use the map below to locate the Regional Office serving your county. Because **solid waste** and **hazardous waste** regions differ, please check the corresponding link to find the office serving you.



Effective November 1, 2006, all visitors will need to present photo ID at the Customer Service Desk upon sign in.

### Asheville Regional Office

2090 U.S. Highway 70  
Swannanoa, NC 28778  
(Courier 12-59-01)  
828/296-4500  
FAX 828/299-7043

### Fayetteville Regional Office

System Building,  
225 Green St., Suite 714  
Fayetteville, NC 28301-5094  
(Courier 14-56-25)  
910/433-3300  
FAX 910/486-0707

### Mooresville Regional Office

610 East Center Ave.  
Mooresville, NC 28115  
(Courier 09-08-06)  
704/663-1699  
FAX 704/663-6040

### Raleigh Regional Office

Mail to:  
1628 Mail Service Center  
Raleigh, NC 27699-1628  
Location:  
3800 Barrett Drive  
Raleigh, NC 27609  
(Courier 52-01-00)  
919/791-4200  
FAX 919/571-4718

### Washington Regional Office

943 Washington Square Mall  
Washington, NC 27889  
(Courier 16-04-01)  
252/946-6481  
FAX 252/975-3716

### Wilmington Regional Office

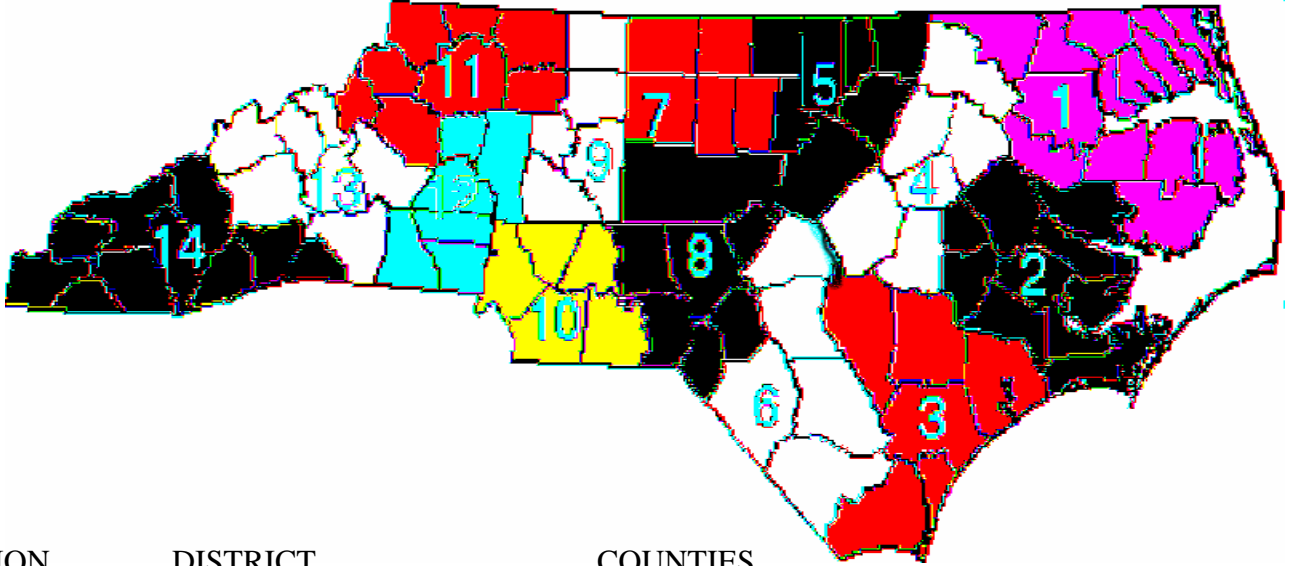
127 Cardinal Drive Extension  
Wilmington, NC 28405  
(Courier 04-16-33)  
910/796-7215  
FAX 910/350-2004

### Winston-Salem Regional Office

585 Waughtown Street  
Winston-Salem, NC 27107  
(Courier 13-15-01)  
336/771-5000  
Main FAX 336/771-4631  
Water Quality  
Main FAX 336/771-4630

**DIVISION OF HIGHWAYS  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

Counties by Division and District -



<u>DIVISION</u>	<u>DISTRICT</u>	<u>COUNTIES</u>
1	1	Camden; Currituck; Dare; Gates; Pasquotank; Perquimans
	2	Bertie; Hertford; Northampton
	3	Chowan; Hyde; Martin; Tyrrell; Washington
2	1	Beaufort; Pitt
	2	Carteret; Craven; Pamlico
	3	Greene; Jones; Lenoir
3	1	Onslow; Pender
	2	Duplin; Sampson
	3	Brunswick; New Hanover
4	1	Edgecombe; Halifax
	2	Nash; Wilson
	3	Johnston; Wayne
5	1	Wake
	2	Durham; Granville; Person
	3	Franklin; Vance; Warren
6	1	Robeson
	2	Cumberland; Harnett
	3	Columbus; Bladen

7	1	Alamance; Orange
	2	Guilford
	3	Caswell; Rockingham
8	1	Chatham; Randolph
	2	Lee; Hoke; Moore
	3	Montgomery; Richmond; Scotland
9	1	Davidson; Rowan
	2	Davie; Forsyth; Stokes
10	1	Stanly; Cabarrus
	2	Mecklenburg
	3	Anson; Union
11	1	Alleghany; Surry; Yadkin
	2	Caldwell; Avery; Watauga
	3	Wilkes; Ashe
12	1	Cleveland; Gaston; Lincoln
	2	Alexander; Catawba; Iredell
13	1	Burke; McDowell; Rutherford; Mitchell
	2	Buncombe; Madison; Yancey
14	1	Transylvania; Henderson; Polk
	2	Haywood; Jackson; Swain
	3	Cherokee; Clay; Graham; Macon

**NCDOT DIVISION & DISTRICT ENGINEER LISTING (Revised 5/18/2007)**

DIV	Title	Name	Address / C.S.No / Telephone	DIST	District Engineer	Address	C.S.No.	Telephone
1	Division Engineer	A.W. Roper, PE	113 Airport Dr., Suite 100	1	G.A. Byrum, PE	PO Box 1405 Elizabeth City 27909	10-31-04	(252) 331-4737
	Div. Maint. Engr.	S.D. Baker, PE	Edenton 27932	2	C.W. Bridgers, PE	PO Box 748 Ahoskie 27910	10-12-05	(252) 332-4021
	Div. Constr. Engr.	R.E. Capehart, PE	10-51-02 (Hertford)	3	D.S. Lee, PE	1300 US Hwy 64 W Plymouth 27962	16-15-01	(252) 793-4568
	Div. Oper. Engr.	J.D. Jennings, PE	(252) 482-7977					
2	Division Engineer	C.E. Lassiter, PE	PO Box 1587	1	Vacant	1701 W. 5th St. Washington 27889	16-05-01	(252) 946-3689
	Div. Maint. Engr.	J. Rouse, PE	Greenville 27835	2	J. Peterson, PE	209 S. Glenburnie Rd. New Bern 28560	16-60-04	(252) 514-4716
	Div. Constr. Engr.	B.E. Eatmon, PE	01-44-25	3	P. Hunter, PE	1629 Hwy 258S Kinston 28504	01-23-26	(252) 527-0053
	Div. Oper. Engr.	D.A. Allgood, PE	(252) 830-3490					
3	Division Engineer	H.A. Pope, PE	124 Division Dr.	1	R. Vause, PE	295 Wilmington Highway, Suite A Jacksonville 28540	01-03-31	(910) 346-2040
	Div. Maint. Engr.	D.L. Thomas, PE	Wilmington 28401	2	K.E. Fussell, PE	220 N. Blvd. Clinton 28328	11-31-04	(910) 592-6174
	Div. Constr. Engr.	J.E. Blair, PE	04-11-03	3	A. Law	300 Division Dr. Wilmington 28401	04-11-03	(910) 251-2655
	Div. Oper. Engr.	J.W. Provost, PE	(910) 251-5724					
4	Division Engineer	R.E. Greene, PE	PO Box 3165	1	R.L. Keeter, Jr., PE	PO Box 98 Halifax 27839	07-43-10	(252) 583-5861
	Div. Maint. Engr.	B.W. Lewis, PE	Wilson 27893	2	B. Bass	3013 US 64A Nashville 27866	07-73-07	(252) 459-2128
	Div. Constr. Engr.	W.O. Johnson, PE	01-53-26	3	T.M. Little, PE	2671 US 70W Goldsboro 27530	01-10-01	(919) 731-7938
	Div. Oper. Engr.	J.C. Eatmon, PE	(252) 237-6164					
5	Division Engineer	J.W. Bowman, PE	2612 N. Duke St	1	Vacant	4009 District Dr. Raleigh 27607	51-31-00	(919) 733-3213
	Deputy Div. Engr.	J. Hopkins, PE	Durham 27704	2	T.N. Johnson, PE	815 Stadium Dr. Durham 27704	17-27-03	(919) 560-6854
	Div. Maint. Engr.	B.H. Jones, PE	17-27-03	3	S.D. Winstead, PE	PO Box 205 Henderson 27536	07-23-13	(252) 492-0111
	Div. Constr. Engr.	T.N. Parrott, PE	(919) 560-6851					
	Div. Oper. Engr.	A.B. Whitley, IV, PE						
6	Division Engineer	T.R. Gibson, PE	PO Box 1150	1	C.S. Miller, Jr., PE	PO Box 2157 Lumberton 28359	14-92-03	(910) 618-5546
	Div. Maint. Engr.	K. Murphy, Jr., PE	Fayetteville 28302	2	C. McGee, PE	PO Box 1150 Fayetteville 28302	14-55-24	(910) 486-1496
	Div. Constr. Engr.	T.C. Pittman, PE	14-55-24	3	D. Cox, PE	PO Box 27 Whiteville 28472	04-21-04	(910) 642-3760
	Div. Oper. Engr.	G.W. Burns, PE	(910) 486-1493					
7	Division Engineer	J.M. Mills, PE	PO Box 14996	1	C.N. Edwards, Jr., PE	PO Box 766 Graham 27253-0766	17-40-02	(336) 570-6833
	Deputy Div. Engr.	E.M. Cowan, PE	Greensboro 27415-4996	2	L. Hall	PO Box 14996 Greensboro 27415-4996	02-16-44	(336) 334-3161
	Div. Maint. Engr.	B. Wall, PE	02-16-44	3	H. McDowell, III, PE	PO Box 2513 Reidsville 27323-2513	02-29-27	(336) 634-5644
	Div. Constr. Engr.	P.P. Eason, PE	(336) 334-3192					
	Div. Oper. Engr.	Vacant						
8	Division Engineer	T. Johnson, PE	PO Box 1067	1	R.E. Blakley, PE	PO Box 1164 Asheboro 27203	13-62-07	(336) 629-1423
	Div. Maint. Engr.	J.L. Picklesimer, PE	Aberdeen 28315	2	C.E. Dumas, PE	PO Box 1067 Aberdeen 28315	03-51-05	(910) 944-7621
	Div. Constr. Engr.	J. Olinger, PE	03-51-05	3	K.R. Hedrick, PE	219 Clemmer Road Rockingham 28379	03-80-04	(910) 582-7075
	Div. Oper. Engr.	R. Sproles, Jr., PE	(910) 944-2344					
9	Division Engineer	S.P. Ivey, PE	375 Silas Creek Parkway	1	C.T. Corriher, PE	4770 S. Main St. Salisbury 28147	05-31-01	(704) 639-7560
	Div. Maint. Engr.	D.W. Spainhour, PE	Winston-Salem 27127	2	J.P. Rhyne, PE	375 Silas Creek Parkway Winston-Salem 27127	13-12-04	(336) 703-6600
	Div. Constr. Engr.	K.E. Raulston, PE	13-12-04					
	Div. Oper. Engr.	M.C. Shaffner, PE	(336) 703-6500					
10	Division Engineer	B.S. Moose, PE	716 W. Main St.	1	R. Hearne, PE	615 Concord Rd. Albemarle 28001	03-21-01	(704) 982-0104
	Deputy Div. Engr.	R. Hancock, PE	Albemarle 28001	2	M. Morgan (Acting), PE	7605 District Drive Charlotte 28213	05-13-10	(704) 596-6900
	Div. Maint. Engr.	P.T. Moxley, PE	03-21-01	3	S. Cole, PE	130 S. Sutherland Ave. Monroe 28112	03-05-02	(704) 289-1397
	Div. Constr. Engr.	T. Brooks, PE	(704) 982-0101					
	Div. Oper. Engr.	T. Boland, PE						
11	Division Engineer	M.A. Pettyjohn, PE	PO Box 250	1	B. Whitaker, PE	PO Box 558 Elkin 28621	09-80-02	(336) 835-4241
	Div. Maint. Engr.	C.C. Reinhardt, PE	N. Wilkesboro 28659	2	K. Turner, PE	PO Box 1460 Boone 28607	15-91-02	(828) 265-5380
	Div. Constr. Engr.	T. Beaver, PE	15-13-32	3	D.J. Tetzlaff	PO Box 250 N. Wilkesboro 28659	15-13-32	(336) 903-9146
	Div. Oper. Engr.	W.O. Atkins, PE	(336) 903-9120					
12	Division Engineer	M.L. Holder, PE	PO Box 47	1	G.R. Spangler	PO Box 47 Shelby 28151-0047	06-53-02	(704) 480-2082
	Div. Maint. Engr.	R.D. Chandler, PE	Shelby 28150-0047	2	P. Norman, PE	124 Prison Camp Rd Statesville 28687	09-33-19	(704) 876-3947
	Div. Constr. Engr.	D.C. Grissom, PE	06-53-03	3	J.B. McSwain	1031 E. Gaston St. Lincolnton 28092	09-60-02	(704) 748-2400
	Div. Oper. Engr.	M. Stafford, PE	(704) 480-9020					
13	Division Engineer	J.J. Swain, Jr., PE	PO Box 3279	1	D. McNeal, PE	3931 NC 226S Marion 28752	12-91-02	(828) 652-3344
	Div. Maint. Engr.	E.A. Green, PE	Asheville 28802	2	M. Coates, PE	PO Box 3279 Asheville 28802	12-60-02	(828) 298-2741
	Div. Constr. Engr.	R.A. Tipton, PE	12-60-02					
	Div. Oper. Engr.	K.A. Wilson, PE	(828) 251-6171					
14	Division Engineer	J.B. Setzer, PE	253 Webster Road	1	M.T. Gibbs, PE	4142 Haywood Rd Horse Shoe 28742	06-98-20	(828) 891-7911
	Div. Maint. Engr.	B.C. Burch, PE	Sylva 28779	2	J.L. Woodard, PE	245 Toot Hollow Rd. Bryson City 28713	08-30-03	(828) 488-2131
	Div. Constr. Engr.	J.R. Wilson, PE	08-23-15	3	W.T. Grindstaff, PE	191 Robbinsville Rd. Andrews 28901	08-51-00	(828) 321-4105
	Div. Oper. Engr.	R.E. Moore, PE	(828) 586-2141					
Chief Engineer: W.S. Varnedoe, PE Director of Asset Management: L.D. Love, PE Director of Field Operations: J.G. Nance, PE						1537 Mail Service Center Raleigh 27699-1537 1 South Wilmington Street Raleigh 27601	1537MSC	(919) 733-7621 (919) 733-2330 (919) 715-5662

[https://apps.dot.state.nc.us/srmu/directory/PDF\\_Report/ReportEngListing.aspx](https://apps.dot.state.nc.us/srmu/directory/PDF_Report/ReportEngListing.aspx)

## NORTH CAROLINA GENERAL STATUTES RELATED TO PROCEDURES FOR THE DESIGN AND CONSTRUCTION OF PUBLIC SCHOOL FACILITIES

The following general statutes relate to procedures for the design and construction of public school facilities. Texts of the statutes may be found in the School Planning publication entitled *Selected Laws Relating to the Construction and Repair of Public School Facilities in North Carolina*.

<b><u>STATUTE</u></b>	<b><u>TITLE</u></b>
18C-160 - 161.	North Carolina State Lottery Fund
44A-26	Bonds required.
58-193	Commissioner to inspect State Property; plans submitted.
115C-81(b)	Basic education program
115C-276	Duties of superintendent
115C-426	Uniform budget format (Capital Outlay Fund)
115C-458 - 467	Loans from State Literary Fund
115C-472.5	Computer Loan Revolving Fund
115C-517	Acquisition of sites.
115C-518	Disposition of school property.
115C-521	Erection of school buildings.
115C-524	Repair of school property; use of buildings for other than school purposes.
115C-525	Fire prevention.
115C-531	Capital leases of school buildings and school facilities
115C-546.1; 546.2	Public School Building Capital Funds (ADM, Lottery Funds).
133-1	Employment of architects, etc., on public works when interested in use of material prohibited.
133-1.1	Certain buildings involving public funds to be designed, etc., by architect or engineer.
133-2	Drawing of plans by material furnisher prohibited.
133-3	Specifications to carry competitive items; substitution of materials.
133-4	Violation of chapter made misdemeanor.
136-18	Powers of Department of Transportation.
143-64.31	Procurement of Architectural, Engineering, and Surveying Services.
143-64.33	Written exemption of particular contracts.
143-64.33	Advice in selecting consultants or negotiating consultant contracts.
143-128	Requirements for certain building contracts.
143-129	Procedure for letting of public contracts; purchases from federal government by State, counties, etc.
143-129.1	Withdrawal of bid.
143-130	Allowance for convict labor must be specified.
143-131	When counties, cities, towns and other subdivisions may let contracts on informal bids.
143-132	Minimum number of bids for public contracts.
143-134.1	Interest on final payments due to prime contractors.
143-135	Limitation of application of Article.
160A-20	Installment Financing.