

## **DIVISION 2 - SITEWORK**

### **SECTION 02050**

#### **DEMOLITION**

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

###### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
- B. Related Sections:
  - 1. 01001 - Basic Requirements
  - 2. 02110 – Site Clearance

###### **1.2 SECTION INCLUDES**

- A. The site has been cleaned to some degree by the Owner since the survey was done but there may still be some items that need to be removed as the site is being prepared for construction. In general, the Contractor will be responsible for the removal of all remaining debris that is on the current site within the project limits prior to placing any fill or foundations including but not limited to remaining plant material, trees stumps and roots, loose rotted or decayed material, debris, bricks, broken concrete, abandoned utilities, pipes, and any other items that are unwanted or in the way of the new project construction within the project limits.

###### **1.3 WORK TO BE DONE BY OTHERS**

- A. Work to be done by the Avoyelles Parish School Board.
  - 1. None.
  - 2. The scope of work in this project does not include furnishings. Furnishings shown on plans are strictly to represent the use of the spaces and to facilitate the location of lighting and power outlets and flooring.

###### **1.3 SUBMITTALS**

- A. Shop Drawings and Schedule: Describe demolition, removal procedures, sequence and schedule.

###### **1.4 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for demolition of structure, safety of adjacent structures, dust control, service utilities, and discovered hazards.

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

Not Used

##### **PART 3 EXECUTION**

###### **3.1 PREPARATION**

- A. Provide, erect, and maintain temporary barriers and security devices.
- B. Notify adjacent owners of work that may affect their property, potential noise, utility outage, or disruption. Coordinate all

work with the Avoyelles Parish Police Jury, The Avoyelles Parish Health Department, the Town of Mansura, and the Avoyelles Parish School Board.

- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring.
- D. Protect existing landscaping materials that are not to be demolished.
- E. Protect existing site amenities that are not to be demolished or removed.
- F. Erect and maintain weatherproof airtight closures for exterior openings.
- G. Erect and maintain temporary partitions to prevent spread of dust, odors and noise to permit continued Owner occupancy. (Not applicable).
- H. Protect existing items that are not indicated to be removed.

### 3.2 DEMOLITION REQUIREMENTS

- A. Conduct operations with minimum interference to public or private accesses.
- B. Maintain protected egress and access at all times. Do not close or obstruct roadways sidewalks without permits.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify authority having jurisdiction and Architect/Engineer.

### 3.3 UTILITIES DEMOLITION

- A. Disconnect and cap and identify designated utilities.
- B. Demolish components indicated in an orderly and careful manner.
- C. Backfill areas excavated caused as a result of demolition. Use Type of fill specified in Section 02200.
- D. Rough grade and compact areas affected by demolition to maintain site grades and contours.

### 3.4 SELECTIVE DEMOLITION

- A. Demolish and remove components in an orderly and careful manner, in sequence as indicated on Drawings.

### 3.5 CLEAN UP

- A. Remove demolished materials from site as work progresses at the direction of The Town of Mansura, Louisiana and the Avoyelles Parish Police Jury.
- B. Leave areas of work in clean condition.

END OF SECTION - 02050

## **DIVISION 2 – SITE WORK**

### **SECTION 02100**

#### **SITE PREPARATION**

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

##### **1.01 SECTION INCLUDES:**

- A. Cleaning site of debris, grass, trees and other plant life in preparation for site excavation work.
- B. Protection of existing structures, trees or vegetation indicated on the contract documents to remain.
- C. Stripping topsoil from areas that are to be incorporated into the limits of the project and where so indicated on the construction drawings.

##### **1.02 RELATED SECTIONS**

- A. Section 02200 - Earthwork
- B. Section 02270 - Slope Protection and Erosion Control
- C. Construction Drawings

##### **1.03 ENVIRONMENTAL REQUIREMENTS**

- A. Construct temporary erosion control systems as directed by the engineer to protect adjacent properties and water resources from erosion and sedimentation.
- B. In the event that site work on this project will disturb five (5) or more acres, the contractor shall NOT begin construction without a "National Pollution Discharge Elimination System" (NPDES) or LaDEQ permit governing the discharge of storm water from the construction site for the entire construction period. The permit requires a "Storm Water Pollution Prevention Plan" (SWP<sup>3</sup>) to be in place during construction that includes monitoring of storm water flows during construction.

The contractor shall be totally responsible for conducting the storm water management practices in accordance with the NPDES or LaDEQ permit and for any enforcement action taken or imposed by Federal or State agencies, including the cost of fines, construction delays and remedial actions resulting from the contractor's failure to comply with all provisions of the NPDES permit.

##### **1.04 JOB CONDITIONS**

- A. Conditions existing at time of inspection for bidding purposes will be maintained by owner in so far as practical.
- B. Variations to conditions or discrepancy in actual conditions as they apply to site preparation operations are to be brought to the attention of the owner prior to the commencement of any site work.

PART 2 PRODUCTS      Not Used

PART 3 EXECUTION

3.01 PREPARATION

Verify that existing plant life and clearing limits are clearly tagged, identified and marked in such a manner as to insure their safety throughout construction operations.

3.02 PROTECTION

- A. Locate and identify existing utilities that are to remain and protect them from damage.
- B. Protect trees, plant growth and features designated to remain.
- C. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep any roadways daily or as required by the governing authority. At such times as deemed necessary by the owner, dust control shall be provided with sprinkling systems or equipment provided by the contractor.
- D. Protect benchmarks, property corners and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same.

3.03 CLEARING

- A. Clear areas required for access to site and execution of work.
- B. Unless otherwise indicated on the drawings, remove trees, shrubs, grass, other vegetation, improvements, concrete slabs, foundations, paving and sidewalks or obstructions interfering with installation of new construction. Removal includes digging out stumps and roots. Depressions caused by clearing and grubbing operations are to be filled to subgrade elevation to avoid water ponding. Satisfactory fill material shall be placed in horizontal layers not exceeding 8" loose depth, and thoroughly compacted per fill requirements of this section and Section 02200.
- C. Remove grass, trees, plant life, stumps and all other construction debris from the site to a dumpsite that is suitable for such material according to state laws and regulations.

3.04 TOPSOIL EXCAVATION

- A. Strip topsoil from areas that are to be filled, excavated or re-graded to such a depth that it prevents intermingling with underlying subsoil or questionable material.
- B. Cut heavy growths of grass from areas before stripping and remove with the rest of the cleared vegetative material.
- C. Topsoil shall consist of organic surficial soil found in depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones and other objects over 2" in diameter, weeds, roots, and other objectionable material.
- D. Stockpile topsoil in storage piles in areas where directed. Construct storage piles to freely drain surface water. Dispose of unsuitable topsoil as specified for waste material, unless otherwise specified by owner.

END OF SECTION 02100

## **DIVISION 2 - SITEWORK**

### **SECTION 02200**

### **EARTHWORK**

#### **PART - GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Remove topsoil and stockpile for later reuse. Remove excess from site.
- B. Excavate subsoil and stockpile for later reuse. Remove excess from site.
- C. Excavate for Building, trenches for utilities.
- D. Grade and rough contour site.
- E. Backfilling building perimeter, site, utilities.
- F. Fill under slabs-on-grade.
- G. Compaction requirements.
- H. Finish grade subsoil.
- I. Place, level, and compact topsoil.
- J. Protection, modification and/or installation of utilities as sitework progresses paying particular attention to grade changes and any necessary staging of work.
- K. Cutting, filling and grading to required lines, dimensions, contours and proposed elevations for proposed improvements.
- L. Scarifying, compaction, drying and removal of unsuitable material to ensure proper preparation of areas for fills or proposed improvements.

##### **1.2 RELATED SECTIONS**

- A. Section 02100 - Site Preparation
- B. Section 02223 - Excavation, Backfill and Compaction for Pavement
- C. Section 02227 - Aggregate Materials
- D. Construction Drawings
- E. Geotechnical Engineering Report dated February 2012

##### **1.3 REFERENCE STANDARDS**

- A. American Society for Testing and Materials (ASTM) latest edition.
- B. D 422 Method for Particle Size Analysis of Soils
- C. D 698 Test for Moisture-Density Relations of Soils Using 5.5 lb. (2.5 kg) Rammer and 12-inch (304.8 mm) Drop (Standard Proctor)
- D. D 1556 Test for Density of soil in Place by the Sand Cone Method

- E. D 1557 Test for Moisture-Density Relations of Soils Using 10-lb (4.5 Kg) Rammer and 18-inch (457 mm) Drop (Modified Proctor)
- F. D 1559 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
- G. D 2167 Test for Density of Soil in Place by the Rubber Balloon Method
- H. D 2216 Laboratory Determination of Moisture content of Soil
- I. D 2487 Classification of Soils for Engineering Purposes
- J. D 2922 Tests for Density of Soil and Soil- Aggregate in Place by Nuclear Methods (Shallow Depth)
- K. D 3017 Test for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- L. D 4318 Test for Plastic Limit, Liquid Limit, and Plasticity Index of Soils
- M. C 25 Chemical Analysis of Limestone, Quicklime and Hydrate Lime
- N. C 110 Physical Testing for Quicklime and Hydrated Lime, Wet Sieve Method
- O. C 618 Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
- P. C 977 Quicklime and Hydrated Lime for Soil Stabilization
- Q. American Association of State Highway and Transportation Officials (AASHTO) latest edition
- R. T 88 Mechanical Analysis of Soils

#### 1.4 QUALITY ASSURANCE

- A. Independent Testing Laboratory selected and paid by owner, shall be retained to perform construction testing on site. Frequency of tests will be as follows:
  - 1. In cut areas: Not less than one compaction test for every 5,000 square feet.
  - 2. In fill areas: Same rate of testing for each 8" lift (measured loose).
- B. If compaction requirements are not complied with at any time during construction process, remove and recompact deficient areas until proper compaction is obtained at no additional expense to owner.
- C. The following tests shall be performed on each type of on-site or imported soil material used as compacted fill as part of construction testing requirements.
  - 1. Moisture and Density Relationship: ASTM D 698 or ASTM D1557.
  - 2. Mechanical Analysis: AASHTO T-88
  - 3. Plasticity Index: ASTM D 4318
- D. Field density tests for in-place materials shall be performed according to one of the following standards as part of construction testing requirements.
  - 1. Sand-Cone Method: ASTM D 1556
  - 2. Balloon Method: ASTM D 2167
  - 3. Nuclear Method: ASTM D 2922 (Method B-Direct Transmission)
- E. Independent Testing Laboratory shall prepare test reports that indicate test location, elevation data, and test results. Owner, architect, and contractor shall be provided with copies of reports within 96 hours of time test was performed. In event that any test performed fails to meet these Specifications, owner and contractor shall be notified immediately by independent testing laboratory.

- F. All costs related to retesting due to failures shall be paid for by the contractor at no additional expense to owner. Owner reserves the right to employ an Independent Testing Laboratory and to direct any testing that is deemed necessary. Contractor shall provide free access to site for testing activities.

## 1.5 SUBMITTALS

- A. Submit a sample of each type of off-site fill materials that is to be used at the site in an airtight, 10 lb container for the testing laboratory.
- B. Submit the name of each material supplier and specific type and source of each material. Any change in source throughout the job requires approval of the owner or engineer.
- C. For use of fabrics or geogrids, a sample and "cut sheet" shall be submitted for approval by the Owner.

## 1.6 PROTECTION

- A. Protect trees, shrubs, lawns and other features remaining as portion of final landscaping.
- B. Protect benchmarks, existing structures, fences, roads, sidewalks, paving and curbs.
- C. Protect above or below grade utilities that are to remain.
- D. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
- E. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.
- F. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- G. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- H. Grade excavation top perimeter to prevent surface water run-off into excavation.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Excavated and re-used material for subsoil fill as specified herein (outside limits of building pads only).
- B. Aggregate fill as specified in Section 02227.
- C. Imported select material – silty-clayey sands (SM-SC), low plasticity sand clays (CL) or clayey sands (SC) having a liquid limit less than 40 and a plasticity index between 8 and 20.
- D. Topsoil fill as specified in Section 02100.
- E. Acceptable stabilization fabrics and Geogrids:
  - 1. Amoco Propex 2006
  - 2. Beltech Style 980
  - 3. Contech C300
  - 4. Mirafi 600X Contech C300
  - 5. Hanes (Terra Tex) HD

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Identify required lines, levels, contours and datum.
- B. Locate and identify existing utilities that are to remain and protect them from damage.
- C. Notify utility companies to remove and/or relocate any utilities that are in conflict with the proposed improvements.
- D. Protect plant life, lawns, fences, existing structures, sidewalks, paving and curbs from excavating equipment and vehicular traffic.
- E. Protect benchmarks, property corners and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same.
- F. Remove from site material encountered in grading operations that, in opinion of owner, is unsuitable or undesirable for backfilling, subgrade or foundation purposes. Dispose of in a manner satisfactory to owner. Backfill areas with layers of suitable material and compact as specified.
- G. Prior to placing fill in low areas, such as previously existing ditches, perform following procedures:
  - 1. Drain water out by gravity with ditch having flow line lower than lowest elevation in low area. If drainage cannot be performed by gravity ditch, use adequate pump to obtain same results.
  - 2. After drainage of low area is complete, remove mulch, mud, debris, and other unsuitable material by using acceptable equipment and methods that will keep natural soils underlying low areas dry and undisturbed.
  - 3. If material is found to be unsuitable, all unsuitable material shall be removed from site.

### 3.2 EXCAVATION FOR FILLING AND GRADING

- A. Classification of Excavation: Contractor by submitting bid acknowledges that he has investigated the site to determine type, quantity, quality, and character of excavation work to be performed. Excavation shall be considered unclassified common excavation.
- B. Perform excavation using capable, well-maintained equipment and methods acceptable to owner and governing agencies.
- C. When performing grading operations during periods of wet weather, provide adequate drainage and ground water management to control moisture of soils.
- D. Shore, brace, and drain excavations as necessary to maintain safe, secure, and free of water at all times.
- E. Excavated material is unacceptable as fill within the paving area.

### 3.3 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded. Remove excess topsoil not being reused from site.
- B. Do not excavate wet topsoil.
- C. Stockpile topsoil to depth not exceeding 8 feet. Cover to protect from erosion.

### 3.04 FILLING AND SUBGRADE PREPARATION

- A. Fill areas to contours and elevations shown with unfrozen materials.
- B. Place fill in continuous lifts specified herein.
- C. Refer to Section 02223 for filling requirements for pavements. Fill under building pads shall be at least 3 feet thick, beginning at 0.5 feet below finished floor elevation.



- D. Areas exposed by excavation or stripping and on which subgrade preparations are to be performed shall be proof rolled to detect any areas of yielding material. Proofrolling shall be accomplished by making a pass with a fully-loaded tandem-axle dump truck, or approved equivalent. Areas of failure shall be excavated and recompacted as stated above. Care shall be taken to not overload soils; pumping of soft material shall be avoided.
- E. Place geofabric directly on smooth graded native subgrade prior to placement of any fill. Install in accordance with manufacturer's instructions.
- F. Fill materials used in preparation of subgrade shall be placed in lifts or layers not to exceed 8" loose measure and compacted to a minimum density of 95% of optimum density, in accordance with ASTM D 1557, at a moisture content of not less than 1% below and not more than 3% above the optimum moisture content.
- G. Material imported from off-site shall be capable of producing a CBR (California Bearing Ratio) value equal to or above the pavement design subgrade CBR value of 10 as indicated on the Drawings.

### 3.5 INSPECTION

- A. Verify source of fill material is approved.
- B. Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations.
- C. Verify areas to be backfilled are free of debris, snow, ice, or water, and ground surfaces are not frozen.
- D. Verify underground tanks are anchored to their own foundation to avoid flotation after backfilling.

### 3.6 MAINTENANCE OF SUBGRADE

- A. Finished subgrades and subbase shall be verified to ensure proper elevation and conditions for construction above subgrade.
- B. Protect subgrade and subbase from excessive wheel loading during construction, including concrete trucks and dump trucks.
- C. Remove areas of finished subgrade or subbase found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of select material. Surface of subgrade or subbase after compaction shall be hard, uniform, smooth, stable, and true to grade and cross-section.

### 3.7 BACKFILLING

- A. Backfill areas to contours and elevations. Use unfrozen materials.
- B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.
- C. Place and compact fill materials in continuous layers not exceeding 8 inches loose depth.
- D. Support pipe and conduit during placement and compaction of bedding fill.
- E. Maintain optimum moisture content of backfill materials to attain required compaction density.
- F. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise.
- G. Make changes in grade gradual. Blend slopes into level areas.

### 3.8 TOLERANCES

- A. Top Surface of Backfilling: Plus or minus one inch.

### 3.9 FIELD QUALITY CONTROL

A New FFA Conference Center  
Coco & Company  
Project # 0225  
3.31.26

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- A. Compaction testing will be performed in accordance with instructions in soils report and/or as shown in the contract drawings.
- B. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

### 3.10 PLACING TOPSOIL

- A. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones. Remove subsoil contaminated with petroleum products.
- B. Scarify subgrade to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.
- C. Place topsoil in areas where seeding, sodding, or planting is scheduled.
- D. Use topsoil in relatively dry state. Place during dry weather.
- E. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.
- F. Remove stone, roots, grass, weeds, debris, and foreign material while spreading.
- G. Lightly compact placed topsoil.
- H. Remove surplus subsoil and topsoil from site.
- I. Leave stockpile area and site clean and raked, ready to receive landscaping.

### 3.11 FINISH GRADING

- A. Grade all areas where finish grade elevations or contours are indicated on Drawings, other than paved areas and buildings, including excavated areas, filled and transition areas, and landscaped areas. Graded areas shall be uniform and smooth, free from rock, debris, or irregular surface changes. Finished subgrade surface shall not be more than 0.10 feet above or below established finished subgrade elevation, and all ground surfaces shall vary uniformly between indicated elevations. Finish ditches shall be graded to allow for proper drainage without ponding and in a manner that will minimize erosion potential.
- B. Correct all settlement and eroded areas within one year after date of completion at no additional expense to owner. Bring grades to proper elevation. Replant or replace any grass, shrubs, bushes, or other vegetation that appears dead, dying or disturbed by construction activities. Refer to Section 02270 for slope protection and erosion control.

END OF SECTION - 02200

## **SECTION 2 – SITE WORK**

### **SECTION 02223**

#### **EXCAVATION, BACKFILLING AND COMPACTING FOR PAVEMENT**

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

###### **1.01 SECTION INCLUDES**

- A. Excavate to line, grade and configuration as shown in the plans and specifications for proposed and future pavement areas.
- B. Fill to line, grade and configuration as shown in the plans and specifications for proposed and future pavement areas.
- C. Compacting fill materials in an acceptable manner as stated herein.

###### **1.02 RELATED SECTIONS**

- A. Section 02200 - Earthwork
- B. Section 02227 - Aggregate Materials
- C. Section 02505 - Paving Base Course
- D. Section 02520 - Portland Cement Concrete Paving
- E. Section 02525 – Concrete Curb and Gutter and Sidewalks
- F. Construction Drawings
- G. Geotechnical Engineering Report dated March 19, 2012 By Geotechnical Testing Laboratory, Inc.

###### **1.03 REFERENCE STANDARDS**

- A. American Society for Testing and Materials (ASTM) latest edition.
  - D 422 Method for Particle Size Analysis of Soils
  - D 698 Test for Moisture-Density Relations of Soils Using 5.5 lb. (2.5 kg) Rammer and 12-inch (304.8mm) Drop (Standard Proctor)
  - D 1556 Test for Density of soil in Place by the Sand Cone Method
  - D 1557 Test for Moisture-Density Relations of Soils Using 10-lb (4.5 Kg) Rammer and 18-inch (457 mm) Drop (Modified Proctor)
  - D 1559 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
  - D 2167 Test for Density of Soil in Place by the Rubber Balloon Method
  - D 2216 Laboratory Determination of Moisture content of Soil
  - D 2487 Classification of Soils for Engineering Purposes
  - D 2922 Tests for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - D 3017 Test for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - D 4318 Test for Plastic Limit, Liquid Limit, and Plasticity Index of Soils
  - C 25 Chemical Analysis of Limestone, Quicklime and Hydrated Lime
  - C 110 Physical Testing for Quicklime and Hydrated Lime, Wet Sieve Method
  - C 618 Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
  - C 977 Quicklime and Hydrated Lime for Soil Stabilization

- B. American Association of State Highway and Transportation Officials (AASHTO) latest edition  
T 88 Mechanical Analysis of Soils

#### 1.04 QUALITY ASSURANCE

Independent testing laboratory selected and paid by owner shall be retained to perform construction testing on filling operations and subgrade analysis as specified in Section 02200 and as stated herein.

#### 1.05 SUBMITTALS

- A. Shop drawings or details pertaining to excavating and filling for pavement are not required unless otherwise shown on the drawings or specifications or if contrary procedures to the project documents are proposed.
- B. Submit a sample of each type of off-site fill material that is to be used in backfilling in an air-tight, 10 lb. container for the testing laboratory or submit a gradation and certification of the aggregate material that is to be used to the testing laboratory for review.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Common fill material from on-site shall not be used under paved areas.
- B. Select fill material from off-site as specified in Section 02200 and approved by the owner's representative.
- C. Aggregate material as specified in Section 02227.
- D. Acceptable stabilization fabrics and geogrids as stated in Section 02200.

### PART 3 EXECUTION

#### 3.01 PREPARATION

- A. Identify all lines, elevations and grades necessary to construct pavements, curb and gutter, bases, walkways and roadways as shown in the plans and specifications.
- B. Carefully protect benchmarks, property corners, monuments or other reference points.
- C. Locate and identify all site utilities that have previously been installed and may be in danger of damage by grading operations.
- D. Locate and identify all existing utilities that are to remain and protect them from damage.
- E. Over excavate and properly prepare areas of subgrade that are not capable of supporting the proposed systems. These areas shall be stabilized by using acceptable filter fabrics and/or aggregate material placed and compacted as specified.

#### 3.02 EXCAVATION

- A. Excavate roadway and pavement areas to line and grade as shown in the plans and specifications.
- B. Engage all suitable material into the project fill areas as specified in Section 02200.
- C. Unsuitable excavated material is to be disposed of off-site in a manner and location that is acceptable to the Owner. Locations of spoil of this material will be made available adjacent to the site of Contractor desires.

- D. Perform excavation using capable, well maintained equipment and methods acceptable to the owner and the project document requirements.

### 3.03 FILLING AND SUBGRADE PREPARATION

- A. Areas exposed by excavation or stripping shall be prepared as subgrade in accordance with Sections 02100 and 02200.
- B. Fill materials used under pavements shall be placed in lifts or layers not to exceed 8" loose measure and compacted to a minimum density of 95% of maximum density, in accordance with ASTM D 698, at a moisture content of not less than 1% below and not more than 3% above the optimum moisture content.
- C. Fill material under pavements shall meet the requirements as specified in Section 02200.
- D. Material imported from off-site shall have a CBR (California Bearing Ratio) value equal to or above the pavement design subbase CBR value of 8, when compacted to specified minimum values.

### 3.04 COMPACTION

- A. Maintain optimum moisture content of fill materials to attain required compaction density.
- B. All materials shall be tested in accordance with Section 02200.
- C. An independent testing laboratory selected and paid by the owner, shall be retained to perform testing on-site.
- D. Compaction test will be as specified in Section 02200 together with the following for paving areas:
  - 1. In cut areas not less than one compaction test for every 5,000 square feet.
  - 2. In fill areas, same rate of testing for each 8" lift (measured loose).
- E. If compaction requirements are not complied with at any time during construction process, remove and recompact deficient areas until proper compaction is obtained at no additional expense to owner.

### 3.05 MAINTENANCE OF SUBGRADE

- A. Finished subgrade and subbase shall be verified to ensure proper elevation and conditions for construction above subgrade.
- B. Protect subgrade from excessive wheel loading during construction including concrete trucks and dump trucks.
- C. Remove areas of finished subbase found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of material. Surface of subbase after compaction shall be hard, uniform, smooth, stable, and true to grade and cross-section.

### 3.06 FINISH GRADING

- A. Finish grading shall be in accordance with Section 02200 and as more specifically stated herein.
- B. Grading of paving areas shall be checked by string line from grade stakes (blue tops) set at not more than 50' centers. Tolerances of 0.10 feet, more or less, will be permitted. Contractor to provide engineering and field staking necessary for verification of lines, grades, and elevations.

END OF SECTION 02223



**DIVISION 2 – SITE WORK**

**SECTION 02227**

**AGGREGATE MATERIALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

Aggregate Materials

**1.02 RELATED SECTIONS**

- A. Section 02100 – Site Preparation
- B. Section 02200 - Earthwork
- C. Section 02222 – Excavation, Backfill and Compaction for Pavement
- D. Section 02270 – Slope Protection and Erosion Control
- E. Construction Drawings
- F. Geotechnical Engineering Report dated March 19, 2012 By Geotechnical Testing Laboratory, Inc.

**1.03 REFERENCE STANDARDS**

- A. American Society for Testing and Materials (ASTM) latest edition.
  - ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
  - ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
  - ANSI/ASTM D1557- Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
  - ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
  - ASTM D2487 - Classification of Soils for Engineering Purposes.
  - ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
  - ASTM D3017 - Test Methods for Moisture Content of Soil and Soil- Aggregate Mixtures.
  - ASTM D4318 - Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- B. American Association of State Highway and Transportation Officials (AASHTO) latest edition.
  - AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 Kg) Rammer and an 18 inch (457 mm) Drop.
  - AASHTO M147 - Materials for Aggregate and Soil-Aggregate.

**1.04 QUALITY ASSURANCE**

Tests and analysis of aggregate material will be performed in accordance with standard ASTM and AASHTO procedures listed herein.

**1.05 SUBMITTALS**

- A. Submit in air tight containers a 10 pound sample of each aggregate or mixture that is to be incorporated into the project

- to the testing laboratory designated by the owner.
- B. Submit the name of each material supplier and specific type and source of each material. Any change in source throughout the job requires approval of the owner and engineer.
  - C. Submit materials certificate to on-site independent testing laboratory that is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. All construction and materials shall meet or exceed the requirements of this section and any state highway department specification section referred to or noted on the drawings that pertain to paving base course design, materials, preparation, and/or execution. All materials shall be as indicated on Drawings and shall comply with applicable state highway specification regarding source, quality, gradation, liquid limit, plasticity index, and mix proportioning. Crushed stone base course material shall meet LDOTD, Section 1003.03(d), or AHD Classification SB-2.

## PART 3 EXECUTION

### 3.01 STOCKPILING

Stockpile on-site at locations indicated by the owner in such a manner that there will be no standing water or mixing with other materials.

### 3.02 BORROW SITES

Upon completion of borrow operations, clean up borrow areas as indicated on the plans in a neat and reasonable manner to the satisfaction of the property owner, the owner and the engineer.

### 3.03 TRANSPORTATION

Off-site materials shall be transported to the project using well maintained and operating vehicles. Once on the job site, all transporting vehicles shall stay on designated haul roads and shall at no time endanger any of the improvements by rutting, overloading or pumping the haul road.

END OF SECTION 02227



**DIVISION 2 – SITE WORK**

**SECTION 02270**

**SLOPE PROTECTION AND EROSION CONTROL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Temporary and permanent erosion control systems.
- B. Slope Protection Systems.

**1.02 RELATED SECTIONS**

- A. Section 02100 - Site Preparation
- B. Section 02200 - Earthwork
- C. Construction Drawings

**1.03 ENVIRONMENTAL REQUIREMENTS**

The contractor shall protect adjacent properties and water resources from erosion and sediment damage throughout the life of the contract.

**1.04 COORDINATION**

Coordinate erosion control grassing with required permanent grassing required by erosion control plan.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Quick growing grasses such as wheat, rye or oats.
- B. Hay or straw bales.
- C. Fencing for siltation control as specified on the plans.
- D. Curlex blankets by American Excelsior Company or approved equal.
- E. Bale stakes for each bale shall be a minimum of 4 feet in length and shall be either 2 #4 rebars, 2 steel pickets or 2-2"x2" hardwood stakes driven 1'-6" to 2'-0" into ground.
- F. Temporary mulches such as loose hay, straw, netting, wood cellulose or agricultural silage.
- G. Fence stakes shall be metal stakes a minimum of 8 feet in length.
- H. Hydro-seeding shall consist of mixing and applying seed, commercial fertilizer, water management gel, polyacrylamide tackifier, and mycorrhizal inoculum with paper or wood fiber and water. Seed and commercial fertilizer shall be spread over the area at rates specified in Table 717-1 and Table 718-1 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

**PART 3 EXECUTION**

3.01 PREPARATION

- A. Prepare a site Storm Water Pollution Prevention Plan in accordance with the erosion control plan and submit any variations "for information only" to the Owner.
- B. Deficiencies or changes in the erosion control plan as it is applied to current conditions will be evaluated and implemented as necessary by the Contractor and brought to the attention of the Owner and the Engineer.
- C. Preparation of areas to be hydro-seeded shall be prepared in accordance with Subsection 717.04 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

3.02 EROSION CONTROL AND SLOPE PROTECTION IMPLEMENTATION

- A. Place erosion control systems in accordance with the erosion control plan.
- B. The contractor will be required to incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and practical.
- C. The temporary erosion control systems installed by the contractor shall be maintained to control siltation at all times during the life of the contract. The contractor must respond to any maintenance or additional work ordered by the Owner within a 48 hour period.
- D. Any additional material and work required and authorized by the Owner which is beyond the extent of the erosion control plan shall be paid for by the owner.
- E. Slopes that erode easily shall be temporary seeded as the work progresses with a rye grass application.
- F. Upon acceptance of stabilized slopes and permanent erosion protection measures, the Contractor shall remove all devices and dress areas to the satisfaction of the Owner.
- G. A dispersing agent may be used for hydro-seeding provided the contractor furnishes evidence that the additive will not affect germination. Any mixture containing polyacrylamide tackifier shall not be applied during any rainy weather or when soil temperatures are below 41° F or if the wind speed is above 20 miles per hour. Pedestrian traffic or equipment shall not be permitted to enter areas where hydro-seeding has been applied.

END OF SECTION 02270

## **DIVISION 2 – SITEWORK**

### **SECTION 02282**

#### **TERMITE CONTROL**

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

##### **1.1 SECTION INCLUDES**

- A. Soil Treatment for termite control.

##### **1.2 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### **1.3 SUMMARY OF WORK**

- A. Provide soil treatment under each building for termite control, as herein specified.

##### **1.4 SUBMITTALS**

- A. Product data: Submit manufacturer's technical data and application instructions. Submit Manufacturer's Material Safety Data Sheet (MSDS), Sample Label and other application instructions.

##### **1.5 QUALITY ASSURANCE**

- A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for work, including preparation of substrate and application.
- B. Engage a professional pest control operator, licensed in accordance with regulations of governing authorities for application of soil treatment solution.
- C. Use only termiticide that bear a Federal registration number of the U.S. Environmental Protection Agency.

##### **1.6 JOB CONDITIONS**

- A. Restrictions: Do not apply soil treatment solution until excavating, filling, and grading operations are completed, except as otherwise required in construction operations.
- B. To insure penetration, do not apply soil treatment to frozen or excessively wet soils or during inclement weather. Comply with handling an application instruction of the soil toxicant manufacturer.

##### **1.7 SPECIFIC PRODUCT WARRANTY**

- A. Furnish written warranty certifying that applied soil termiticide treatment will prevent infestation of subterranean termites and, that if subterranean termite activity is discovered during warranty period, Contractor will re-treat soil and repair or replace damage caused by termite infestation.
- B. Provide warranty for a period of five (5) years from date of treatment, signed by Applicator and Contractor.

- C. Upon completion of the work, and as a condition of its acceptance, deliver to the Architect two copies of a Warranty signed by an authorized representative of the installing Subcontractor and co-signed by the Contractor, agreeing:
  - 1. To make an inspection of the work once each year for a total period of five (5) years following Date of Substantial Completion for the purpose of detecting termite infestation,
  - 2. If termite infestation is found during that five (5) year period, to retreat in accordance with prevailing practices of the trade and within ten (10) calendar days after such infestation is discovered.
  - 3. To repair damage to the Work caused by subterranean termites during that five (5) year period, to a maximum cost of \$5,000.00.
  - 4. To make sure inspections, retreatment and repairs at no additional cost to the Owner.

## PART 2 - PRODUCTS

### 2.1 SOIL TREATMENT SOLUTION

- A. Use an emulsible, concentrated termiticide for dilutes with water specially formulated to prevent infestation by termites. Fuel oil will not be permitted as a diluent. Provide a solution consisting of one of following chemical elements and concentrations:
  - 1. "Demon" 0.6% percent in water emulsion..
  - 2. Permethrin ("Dragnet", "Torpedo"); 0.5 percent in water emulsion.
  - 3. Premise 75
- B. Other solutions may be used as recommended by Applicator if also acceptable to Architect and prior approved for intended application by both Architect and jurisdiction authorities and meeting the same solution requirements of the chemical elements and concentrations. Use only soil treatment solutions, which are not injurious to planting.

## PART 3 - EXECUTION

### 3.1 EXTENT

- A. Provide termite treatment at all new slabs on grade, foundations, expansion joints, etc. and at all excavations to facilitate waterproofing work.

### 3.2 APPLICATION

- A. Surface Preparation: Remove foreign matter, which could decrease effectiveness of treatment on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and foundations. Toxicants may be applied before placement of compacted fill under slabs if recommended by toxicant manufacturer.
- B. Application Rates: Apply soil treatment solutions as follows:
  - 1. Under slab-on-grade structures, treat soil before concrete slabs are placed using the following rates of application:
    - a. Apply 4 gallons of chemical solution per 10 linear feet to soil in critical areas under slab, including entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers.
    - b. Apply 1 gallon of chemical solution per 10 sq. ft. as an overall treatment under slab and attached slab areas where fill is soil or unwashed gravel. Apply 1 1/2 gallons of chemical solution to areas where fill is washed gravel or other coarse absorbent material.
    - c. Apply 4 gallons of chemical solution per 10 linear feet of trench for each foot of depth from grade to footing, along outside edge of building. Dig a trench 6 to 8 inches wide along outside of foundation to a depth of not less than 12 inches. Punch holes to top of footing at not more than 12 inches o.c. and apply chemical solution. Mix chemical solution with the soil as it is being replaced in the trench.

- C. At expansion joints, control joints, and areas where slabs will be penetrated, apply at rate of 4 gallons per 10 linear feet of penetration.
- D. Post signs in areas of application to warn workers that soil termiticide treatment has been applied. Remove signs after areas are covered by other construction.
- E. Reapply soil treatment solution to areas disturbed by subsequent excavation, landscape grading, or other construction activities following application.

### 3.3 FOLLOW-UP TREATMENT

- A. Return to treatment site within 12 months of initial treatment and apply an exterior barrier as required by Louisiana Structural Pest Control Commission.
- B. Exterior follow-up barrier shall be accomplished with the same type compounds used on the original horizontal barrier

END OF SECTION - 02282



**DIVISION 2 – SITE WORK**

**SECTION 02505**

**PAVING BASE COURSE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Granular Base

**1.02 RELATED SECTIONS**

- A. Section 02100 - Site Preparation
- B. Section 02200 - Earthwork
- C. Section 02227 - Aggregate Materials
- D. Section 02520 - Portland Cement Concrete Paving
- E. Section 02525 – Concrete Curb and Gutter and Sidewalks
- F. Construction Drawings

**1.03 REFERENCES**

- A. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- B. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- C. ASTM D2167 - Test Method for Density and Unit Weight of Soil in-place by the Rubber Balloon Method.
- D. ASTM D1556 - Test Method for Density of Soil in-place by the Sand-Cone Method.
- E. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in-place by Nuclear Methods (Shallow Depth), Method B (Direct Transmission).
- F. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

**PART 2 PRODUCTS**

**2.01 FILL MATERIALS**

- A. Submit materials certificate to Owner that is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.
- B. Provide test results of cement stabilized soil mix proposed for use on job prior to delivery of any base material to site.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

Contractor shall verify that the subbase has been inspected, tested and the gradients and elevations are correct, dry and properly prepared.

### 3.02 CONSTRUCTION

- A. Perform base course construction in a manner that will drain surface properly at all times and at the same time prevent runoff from adjacent areas from draining onto base course construction.
- B. Compact base material to not less than 98% of optimum density as determined by ASTM D 698 or 95% of optimum density, as determined by ASTM D 1557, unless otherwise indicated on the Drawings.
- C. Granular Base: Construct to thickness indicated on Drawings. Apply in lifts or layers not exceeding 8", measured loose.
- D. Cement Stabilized Base: As an alternate to the base course indicated, provide a cement stabilized base of equal thickness, in select fill, at a cement content not to exceed 8% by weight, in accordance with LDOTD requirements.

### 3.03 FIELD QUALITY CONTROL

- A. An Independent Testing Laboratory, selected and paid by Owner, shall be retained to perform construction testing of in-place base courses for compliance with requirements for thickness, compaction, density and tolerance. Paving base course tolerances shall be verified (by rod and level readings on not more than fifty-foot centers) to be not more than 0.05 feet above design elevation that will allow for paving thicknesses as shown in the Drawings. Contractor shall provide instruments and a suitable benchmark.
- B. The following tests shall be performed on each type of material used as base course material:
  - 1. Moisture and Density Relationship: ASTM D 698 or ASTM D 1557.
  - 2. Mechanical Analysis: AASHTO T-88.
  - 3. Plasticity Index: ASTM D-4318.
  - 4. Base material thickness: Perform one test for each 5,000 square feet of in-place base material area.
  - 5. Base material compaction: Perform one test in each lift for each 5,000 square feet of in-place base material area.
  - 6. Test each source of base material for compliance with these specifications.

END OF SECTION 02505



**DIVISION 2 – SITE WORK**

**SECTION 02520**

**PORTLAND CEMENT CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete, integral curbs, parking areas and roads.

**1.02 RELATED SECTIONS**

- A. Section 02100 - Site Preparation.
- B. Section 02505 - Paving Base Course.
- C. Section 02525 - Curb and Sidewalk and Sidewalks.
- D. Section 02584 - Pavement Markings.
- E. Section 03300 - Cast-in-place Concrete.
- F. Construction Drawings.

**1.03 REFERENCES**

- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- D. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural construction.
- E. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- F. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
- G. ASTM C33 - Concrete Aggregates.
- H. ASTM C94 - Ready Mix Concrete.
- I. ASTM C150 - Portland Cement
- J. ASTM C260 - Air-Entraining Admixtures for Concrete.
- K. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

L. ASTM C494 - Chemical Admixtures for Concrete.

M. FS TT-C-800 - Curing Compound, Concrete, for New and Existing Surfaces.

#### 1.05 PERFORMANCE REQUIREMENTS

A. Contractor shall maintain access for vehicular and pedestrian traffic as required for other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects. Use flexible spring steel forms or laminated boards to form radius bends as required. Coat forms with non-staining type coating that will not discolor or deface surface of concrete.

B. Welded Wire Mesh: Welded plain cold-drawn steel wire fabric, ASTM A 185. Furnish in flat sheets, not rolls, unless otherwise acceptable to Owner.

C. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 40.

D. Concrete Materials: Comply with requirements of Cast-in-place Concrete Section for concrete materials, admixtures, bonding materials, curing materials, and others as required. **No flyash is to be used.**

E. Joint Fillers: Resilient premolded bituminous impregnated fiberboard units complying with ASTM D 1751 FS HH-F-341, Type II, Class A; or AASHTO M 153, Type I.

F. Joint Sealants: Non-priming, pourable, self-leveling polyurethane. Acceptable sealants are Sonneborn "Sonolastic Paving Joint Sealant" Sonneborn "Sonomeric CT 1 Sealant", Sonneborn "Sonomeric CT 2 Sealant", Mameco "Vulken 45", or Woodmont Products "Chem-Caulk".

#### 2.02 MIX DESIGN AND TESTING

A. Concrete mix design and testing shall comply with requirements of applicable Cast-in-place Concrete Section.

B. Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water-reducing admixture, air-entraining admixture, and water to produce the following properties:

1. Compressive Strength: 3,500 psi, minimum at 28 days, unless otherwise indicated on the Drawings.
2. Slump Range: 3"-5" at time of placement
3. Air Entrainment: 5% to 8%.

### PART 3 EXECUTION

#### 3.01 PREPARATION

A. Compaction testing for the base material shall be completed prior to the placement of the paving.

B. Surface Preparation: Remove loose material from compacted base material surface to produce a firm, smooth surface immediately before placing concrete.

- C. Contractor shall submit a joint layout plan and pouring sequence to Engineer for approval.

### 3.02 INSTALLATION

#### A. Form Construction

1. Set forms to required grades and lines, rigidly braced and secured.
2. Install sufficient quantity of forms to allow continuance of work and so that forms remain in place a minimum of 24 hours after concrete placement.
3. Check completed formwork for grade and alignment to following tolerances: Top of forms not more than 1/8" in 10'-0". Vertical face on longitudinal axis, not more than 1/4" in 10'-0".
3. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

- B. Reinforcement: Locate, place and support reinforcement per applicable Cast-in-place Concrete Section.

#### C. Concrete Placement

1. Comply with applicable requirements of Cast-in-place Concrete Section.
2. Do not place concrete until base material and forms have been checked for line and grade. Moisten base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at the required finish elevation and alignment.
3. Place concrete using methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.
3. Deposit and spread concrete in continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2 hour, place construction joint.

- D. Joint Construction: Construct expansion, weakened-plane Control (contraction), and construction joints straight with face perpendicular to concrete surface. Construct transverse joints perpendicular to centerline, unless otherwise detailed.

1. Weakened-Plane Control (Contraction) Joints: Provide joints at a spacing of 15'-0" o.c. maximum each way. Construct control joints for depth equal to at least 1/4 concrete thickness, as follows:
  - a. Form tooled joints in fresh concrete by grooving top portion with recommended tool and finishing edges with jointer.
  - b. Form sawed joints using powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.
2. Construction Joints: Place concrete joints at end of placements and at locations where placement operations are stopped for period of more than 1/2 hour, except where such placements terminate at expansion joints. Construct joints using standard metal keyway-section forms.
3. Expansion Joints: Locate expansion joints at 120'-0" o.c. maximum each way. Provide pre-molded joint filler for

expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks, and other fixed objects.

- E. Joint Fillers: Extend joint fillers full-width and depth of joint, and not less than 1/2" or more than 1" below finished surface where joint sealer is indicated. Furnish joint fillers in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.
- F. Joint Sealants: All joints shall be sealed with approved exterior pavement joint sealants and shall be installed per manufacturer's recommendations.

### 3.03 CONCRETE FINISHING

- A. After striking off and consolidating concrete, smooth surface by screeding and floating. Adjust floating to compact surface and produce uniform texture. After floating, test surface for trueness with 10'-0" straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide continuous smooth finish.
- B. Work edges of slabs, gutters, back top edge of integral curb, and formed joints with an edging tool, and round to 1/2" radius. Eliminate tool marks on concrete surface. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
  - 1. Inclined Slab Surfaces: Provide coarse, non-slip finish by scoring surface with stiff-bristled broom perpendicular to line of traffic.
  - 2. Paving: Provide coarse, non-slip finish by scoring surface with stiff-bristled broom perpendicular to line of traffic.
- C. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up any honeycombed areas. Remove and replace areas or sections with major defects, as directed.
- D. Protect and cure finished concrete paving using acceptable moist-curing methods, more particularly described in the "water-curing" section of ACI 308-81.

### 3.04 CLEANING AND ADJUSTING

- A. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials.

### 3.05 FIELD QUALITY CONTROL

- A. An independent testing laboratory shall randomly core the pavement at a minimum rate of one core per 10,000 square feet of pavement.

END OF SECTION 02520

## **DIVISION 2 – SITE WORK**

### **SECTION 02525**

#### **CONCRETE CURB AND GUTTER AND SIDEWALKS**

##### **PART 1 – GENERAL**

###### **1.01 SECTION INCLUDES**

- A. Combination concrete curb and gutter
- B. Concrete Curb
- C. Sidewalks

###### **1.02 RELATED SECTIONS**

- A. Section 02227 - Aggregate Material.
- B. Section 02505 - Paving Base Course.
- C. Section 03300 - Cast-in-place Concrete.
- D. Construction Drawings.

###### **1.03 REFERENCES**

ACI 304	Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
ANSI/ASTM D1751	Preformed Expansion Joint Fillers for Concrete Paving and Structural construction.
ANSI/ASTM D1752	Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
ASTM C33	Concrete Aggregates.
ASTM C94	Ready Mix Concrete.
ASTM C150	Portland Cement.
ASTM C260	Air-Entraining Admixtures for Concrete.
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete.
ASTM C494	Chemical Admixtures for Concrete.
FS TT-C-800	Curing Compound, Concrete, for New and Existing Surfaces.

###### **1.04 PERFORMANCE REQUIREMENTS**

- A. Contractor shall maintain access for vehicular and pedestrian traffic as required for other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required.

##### **PART 2 – PRODUCTS**

###### **2.01 MATERIALS**

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects. Use flexible spring steel forms or laminated boards to form radius bends as required. The forms shall be of a depth equal to the depth of curbing or sidewalk, and so designed as to permit secure fastening together at the tops. Coat forms with non-staining type coating that will not discolor or deface surface of concrete.
- B. Concrete Materials: Comply with requirements of applicable Section 03300 for concrete materials, admixtures, bonding materials, curing materials, and others as required.
- C. Joint Fillers: Resilient pre-molded bituminous impregnated fiberboard units complying with ASTM D 1751 FS HH-F-341, Type II, Class A; or AASHTO M 153, Type I.

- E. Joint Sealers: Non-priming, pourable, self-leveling polyurethane. Acceptable sealants are Sonneborn "Sonolastic Paving Joint Sealant," Sonneborn "Sonomeric CT 1 Sealant," Sonneborn "Sonomeric CT 2 Sealant," Mameco "Vulken 45," or Woodmont Products "Chem-Caulk."

## 2.02 MIX DESIGN AND TESTING

- A. Concrete mix design and testing shall comply with requirements of applicable Section 03300.
- B. Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water-reducing admixture, air-entraining admixture, and water to produce the following properties:
  - 1. Compressive Strength: 3500 psi, minimum at 28 days, unless otherwise indicated on the Drawings.
  - 2. Slump Range: 2"-5" at time of placement.
  - 3. Air Entrainment: 5% to 8%.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Proof-roll prepared subbase material surface to check for unstable areas. The paving work shall begin after any unsuitable areas have been corrected and are ready to receive paving. Compaction testing for the base material shall be completed prior to the placement of the paving.
- B. Surface Preparation: Remove loose material from compacted base material surface to produce a firm, smooth surface immediately before placing concrete.

### 3.02 INSTALLATION

- A. Form Construction
  - 1. Set forms to required grades and lines, rigidly braced and secured.
  - 2. Install sufficient quantity of forms to allow continuance of work and so that forms remain in place a minimum of 24 hours after concrete placement.
  - 3. Check completed formwork for grade and alignment to following tolerances:
    - a. Top of forms not more than 1/8" in 10'-0."
    - b. Vertical face on longitudinal axis, not more than 1/4" in 10'-0."
  - 4. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.
- B. Concrete Placement
  - 1. Comply with applicable requirements of Section 03300.
  - 2. Do not place concrete until base material and forms have been checked for line and grade. Moisten base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at the required finish elevation and alignment.
  - 3. Place concrete using methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of dowels, and joint devices.
  - 4. Deposit and spread concrete in continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2 hour, place construction joint. Automatic machine may be used for curb and gutter placement at Contractor's option. Machine placement must produce curbs and gutters to required cross

sections, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete as specified.

C. Joint Construction

1. Contraction Joints: Concrete curb, concrete gutter, concrete curb and gutter, or sidewalks where specified on the plans, shall be constructed in uniform sections of the length specified on the plans. The joints between sections shall be formed either by steel templates 1/8 inch in thickness, of a length equal to the width of the gutter and/or curb, and with a depth which will penetrate at least 2 inches below the surface of the curb and/or gutter; or with 3/4-inch thick preformed expansion joint filler cut to the exact cross section of the curb and/or gutter; or by sawing to a depth of at least 2 inches while the concrete is between 4 to 24 hours old. If steel templates are used, they shall be left in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place.
  2. Longitudinal Construction Joints: Concrete curb, concrete gutter or combination concrete curb and gutter, where specified on the plans, shall be tied to concrete pavement with 1/2 inch round deformed reinforcement bars of the length and spacing shown on the plans.
  3. Transverse Expansion Joints: Transverse expansion joint in curb, curb and gutter, gutter or sidewalk shall have the filler cut to the exact cross section of the curb, curb and gutter, gutter or sidewalk. The joints shall be similar to the type of expansion joint used in the adjacent pavement.
- D. Joint Fillers: Extend joint fillers full width and depth of joint, and not less than 1/2" or more than 1" below finished surface where joint sealer is indicated. Furnish joint fillers in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.
- E. Joint Sealants: All joints shall be sealed with approved exterior pavement joint sealants and shall be installed per manufacturer's recommendations.

3.03 CONCRETE FINISHING

- A. After striking off and consolidating concrete, smooth surface by screeding and floating. Adjust floating to compact surface and produce uniform texture. After floating, test surface for trueness with 10'-0" straightedge, distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide continuous smooth finish.
- B. Work edges of sidewalks, gutters, back top edge of integral curb, and formed joints with an edging tool, and round to 1/2" radius. Eliminate tool marks on concrete surface. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
1. Inclined Slab Surfaces: Provide coarse, non-slip finish by scoring surface with stiff-bristled broom perpendicular to line of traffic. Provide ADA approved material and texture and color changes as indicated.
  2. Curbs, Gutters, and Walks: Broom finish by drawing fine-hair broom across surface perpendicular to line of traffic. Repeat operation as necessary to produce a fine line texture.
  3. Where indicated, provide special textured finish to sidewalks as part of finish. Refer to drawings for details.
- C. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed.
- D. Protect and cure finished concrete paving using acceptable moist-curing methods, more particularly described in the "water-curing" section of ACI 308-81.

3.04 BACKFILL

After the concrete has set sufficiently, the spaces in front and back of the curb and gutter or sidewalk shall be refilled to the required elevation with suitable material that shall be compacted until firm and solid and neatly graded.

3.05 CLEANING AND ADJUSTING

- A. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials.

END OF SECTION 02525



**DIVISION 2 – SITE WORK**

**SECTION 02584**

**PAVEMENT MARKINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Painted pavement marking symbols.
- B. Painted striping for parking.

**1.02 RELATED SECTIONS**

- A. Section 02200 - Earthwork
- B. Section 02505 - Paving Base Course
- C. Construction Drawings

**1.03 PROJECT CONDITIONS**

- A. Maintain access for vehicular and pedestrian traffic as required for other construction activities. Utilize flagmen, barricades, warning signs and warning lights as required.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Painted Pavement marking shall meet LDOTD Standard Specification Section 737.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. Sweep and clean surface to eliminate loose material and dust.
- B. Where existing pavement markings are indicated on the drawings to be removed or would interfere with the adhesion of new paint, a motorized abrasive device shall be used to remove the markings. The equipment employed shall not the existing paving or create a surface hazardous to vehicle or pedestrian traffic. In all areas within public rights-of-way, the method of marking removal shall be approved by governing authority.

**3.02 APPLICATION**

- A. Installation shall be in accordance with LDOTD Standard Specifications.
- B. The following items shall be provided:
  - 1. Parking Stripes, 4" wide (white)
  - 2. Handicap Parking Stripes and Access Ramps (blue w/white symbols)
  - 3. Stop bars, 24" wide.
  - 4. Symbols as indicated on drawings.

END OF SECTION 02584



## **DIVISION 2 – SITEWORK**

### **SECTION 02900**

#### **LANDSCAPING**

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

###### **1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

###### **1.02 SECTION INCLUDES**

- A. Preparation of soil, seed, and fertilizer. This section does not include new or specified landscaping except for grass seeding.

###### **1.03 QUALITY CONTROL**

- A. Nursery: Company specializing in the seeding.
- B. Maintenance Services: Performed by installer.

###### **1.04 WARRANTY**

- A. Provide one year warranty including one continuous growing season under provisions of Section 01001 including coverage of all landscaping from death or unhealthy conditions.
- B. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty beginning on date of replacement.

###### **1.05 MAINTENANCE SERVICE**

- A. Maintain seeded areas immediately after placement until grass are well established and exhibit a vigorous growing condition for two cuttings.

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

###### **2.01 GRASS**

- A. Seed Mixture:  
Two (2) pounds Common Bermuda and one (1) pound Centipeede per 1000 square feet.

###### **2.02 RELOCATED TREES AND PLANTS**

- A. None required.

###### **2.03 SOIL AND SOIL MODIFICATION MATERIALS**

- A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, clay or impurities, plants, weeds, or debris.
- B. Fertilizer: Fertilizer shall be uniformly broadcast over the area to be fertilized by either hand or machine methods. Unless otherwise provided the approximate rate of broadcast fertilizer per acre shall be as follows:  
Type: Pounds Per Acre:

8-8-8	1,000
12-12-12	667
13-13-13	615

Seeding limited to project limits as indicated on the Proposed Site Plan.

## 2.04 ACCESSORIES

- A. Edging: Plastic as required.
- B. Herbicide: As required and approved by State of Louisiana.
- C. Pesticide: As required and approved by State of Louisiana.

## PART 3 EXECUTION

### 3.01 EXAMINATION AND PREPARATION

- A. Refer to Section 2200 for related information.

### 3.02 PLACING TOPSOIL

- A. Refer to Section 2200 for related information.

### 3.03 SEEDING

- A. Apply seed at a rate of two (2) pounds Common Bermuda and one (1) pound Centipeede per 1000 sq. ft. evenly in two intersecting directions.
- B. Immediately following seeding, apply agricultural mulch to a thickness of 1/8 inches.
- C. Apply water with a fine spray immediately after each area has been mulched.

### 3.04 PLANTING OF RELOCATED TREES

- A. None Required.

### 3.05 MAINTENANCE

- A. Mow grass at regular intervals to maintain maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- B. Water to prevent grass and soil from drying out.
- C. Control growth of weeds. Apply herbicides and pesticides in accordance with manufacturer's instructions.

### 3.06 CLEAN UP

- A. Thoroughly clean the entire project area of all trash and other debris and all unused or salvaged materials resulting from seeding operations. After completion of the work, remove all spoil piles and sweep or rake the entire project area clean.

END OF SECTION - 02900