READVERTISEMENT

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

CONSTRUCTION PROPOSAL

FEDERAL AID PROJECT

STATE PROJECT NO. 450-15-0100
CAUSEWAY BOULEVARD INTERCHANGE (PHASE I)
ROUTE I-10
JEFFERSON PARISH

STATE OF LOUISIANA
EDWIN L. LANTZER
REG. No. 24733
REGISTERED PROFESSIONAL ENGINEER IN MECHANICAL ENGINEERING

Edwin Lantzer
17 JULY 2008

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STATE PROJECT NO. 450-15-0100
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NOTICE TO CONTRACTORS (08/07)

Either sealed paper bids or electronic bids for the following project will be received by the Department of Transportation and Development (DOTD). Paper bids can be delivered to the DOTD Headquarters Administration Building, 1201 Capitol Access Road, Room 405-L, Baton Rouge, Louisiana 70802 until 8:00 a.m on **Wednesday, August 27, 2008**. After 8:00 a.m., paper bids will be received in the Headquarters Auditorium until 10:00 a.m. Electronic bids must be submitted through www.bidx.com prior to the electronic bidding deadline. Beginning at 10:00 a.m.., all bids will be publicly opened and presented in the Headquarters Auditorium. No bids will be received after 10:00 a.m. Any person requiring special accommodations shall notify DOTD at (225) 379-1111 not less than 3 business days before bid opening.

READVERTISEMENT
DBE GOAL PROJECT
STATE PROJECT NO. 450-15-0100
FEDERAL AID PROJECT NO. 10-5(362)229
DESCRIPTION: CAUSEWAY BOULEVARD INTERCHANGE (PHASE I)
ROUTE: I-10
PARISH: JEFFERSON
LENGTH: 0.294 mile.
TYPE: GRAD, CLASS II BC, DRAIN STRUCT, WATER AND SEWER SYSTEMS, SUPERPAVE ACP, PCCP, LIGHTING, TRAFFIC SIGNALS, CONCRETE AND STEEL GRIDERS, SLAB SPAN BRIDGE, AND RELATED WORK.
LIMITS: State Project No. 450-15-0100: LOC ON RT I-10 / CAUSEWAY BOULEVARD INTERCHANGE.
ESTIMATED COST RANGE: $30,000,000 to $50,000,000
PROJECT ENGINEER: SKOIEN, RICK; 3105 Dickory Avenue, Jefferson, LA 70123, (504) 736-7090.
PROJECT MANAGER: GUEST, DEBRA; (225) 379-1534.
COST OF PROPOSAL FORMS: $25.00
COST OF PLANS: $90.00 for complete plans.

Bids must be prepared and submitted in accordance with Section 102 of the 2006 Louisiana Standard Specifications for Roads and Bridges as amended by the project specifications, and must include all information required by the proposal.

Plans and/or proposals may be obtained in Room 101-A of the DOTD Headquarters Administration Building, 1201 Capitol Access Road in Baton Rouge, or by contacting the DOTD; Email: sharonknight@dotd.la.gov, Phone (225) 379-1111, FAX: (225) 379-1714, or by written requests sent to the Louisiana Department of Transportation and Development, Project Control Section, P. O. Box 94245, Baton Rouge, LA 70804-9245. Proposals will not be issued later than 24 hours prior to the time set for opening bids. The purchase price for plans and proposals is non-refundable. Plans and specifications may be seen at the Project Engineer's office or in Room 101-A of the DOTD's Headquarters Administration Building in Baton Rouge. Upon request, the Project Engineer will show the work.

The U. S. Department of Transportation (DOT) operates a toll free "Hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should call 1-800-424-9071. All information will be treated confidentially and caller anonymity will be respected.

GENERAL BIDDING REQUIREMENTS (08/06): The specifications, contract and bonds governing the construction of the work are the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, together with any supplementary specifications and special provisions attached to this proposal.

Bids shall be prepared and submitted in accordance with Section 102 of the Standard Specifications.

The plans herein referred to are the plans approved and marked with the project number, route and Parish, together with all standard or special designs that may be included in such plans. The bidder declares that the only parties interested in this proposal as principals are those named herein; that this proposal is made without collusion or combination of any kind with any other person, firm, association, or corporation, or any member or officer thereof; that careful examination has been made of the site of the proposed work, the plans, Standard Specifications, supplementary specifications and special provisions above mentioned, and the form of contract and payment, performance, and retainage bond; that the bidder agrees, if this proposal is accepted, to provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all material specified in the contract, in the manner and time therein prescribed and in accordance with the requirements therein set forth; and agrees to accept as full compensation therefore, the amount of the summation of the products of the quantities of work and material incorporated in the completed project, as determined by the engineer, multiplied by the respective unit prices herein bid.

It is understood by the bidder that the quantities given in this proposal are a fair approximation of the amount of work to be done and that the sum of the products of the approximate quantities multiplied by the respective unit prices bid shall constitute gross sum bid, which sum shall be used in comparison of bids and awarding of the contract.

The bidder further agrees to perform all extra and force account work that may be required on the basis provided in the specifications.

The bidder further agrees that within 15 calendar days after the contract has been transmitted to him, he will execute the contract and furnish the Department satisfactory surety bonds.

If this proposal is accepted and the bidder fails to execute the contract and furnish bonds as above provided, the proposal guaranty shall become the property of the Department; otherwise, said proposal guaranty will be returned to the bidder; all in accordance with Subsection 103.04.

DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS (02/07): This project is a DBE goal project. In accordance with the Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts elsewhere herein, the DBE goal for approved subcontracting work on this project is 10.0 percent of the total contract bid price. The contractor shall submit DOTD Form OMF-1A (Request to Sublet) and have it approved by the Department before any subcontract work is done on the project. Only those businesses certified by the Department as Disadvantaged Business Enterprises (DBEs) may be utilized in fulfillment of the DBE goal requirement. Such businesses are those certified by the Louisiana Unified Certification Program on the basis of ownership and control by persons found to be socially and economically disadvantaged in accordance with Section 8(a) of the Small Business Act, as amended and Title 49, Code of Federal Regulations, Part 26 (49 CFR 26).

PARTICIPATION IN JOB TRAINING (11/95): If the contractor desires to participate in job training, as provided by Supplemental Specifications elsewhere herein, he shall submit a written request to the project engineer with a copy to the Construction Section. The number of trainees to be trained under this contract will be nine. For the purposes of reimbursement, this number of trainees has been translated into an estimated nine thousand trainee hours. The pay item for Trainee Reimbursement, will be established in the contract in accordance with the Supplemental Specifications for Job Training and the above hours.

BUY AMERICA PROVISIONS (03/95): Pursuant to the "Buy America Provisions" of the Surface Transportation Assistance Act (STAA) of 1982 as promulgated by current FHWA regulation 23 CFR 635.410 and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) amendment to (STAA), all steel and iron materials permanently installed on this project shall be manufactured, including application of a coating, in the United States, unless a waiver of these provisions is granted. Coating includes all processes which protect or enhance the value of the material to which the coating is applied. The request for waiver must be presented in writing to the Department by the contractor. Such waiver may be granted if it is determined that:

(1) The application of Buy America Provisions would be inconsistent with the public interest or

(2) Such materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.

Minimal use of foreign steel and iron materials will be allowed without waiver provided the cost of these materials does not exceed 0.1 percent of the total contract cost or $2,500, whichever is greater; however, the contractor shall make written request to the DOTD Construction Engineering Administrator for permission to use such foreign materials and shall furnish a listing of the materials, their monetary value, and their origin and place of production.

The burden of proof for the origin and place of production and any request for waiver is the responsibility of the contractor.

Prior to the use of steel and iron materials in the project, the contractor shall furnish Mill Test Reports to the engineer for such steel and iron materials, accompanied by a notarized certification stating that the Mill Test Reports represent the steel and iron materials to be furnished and that such materials were produced and fabricated in the United States.

Pig iron and processed, pelletized, and reduced iron ore are exempt from the Buy America Provisions.

COST-PLUS-TIME BIDDING PROCEDURE (A + B METHOD)(08/06): The 2006 Standard Specifications and Supplemental Specifications, as amended elsewhere herein, are further amended as follows:

General. The process for bidding and the award of this project will take into account not only the contract amount bid but also the bidder's stated contract time in which the project will be completed to final acceptance. This method will only be used to determine the successful bidder. It will not be used to determine the award amount nor final payment to the contractor.

Definition of Terms. For this project the following definitions apply:

(a) Calendar Day – Refer to Subsection 101.03.

(b) Contract Amount – The summation of the products of the quantities shown in the Schedule of Items multiplied by the unit bid prices.

(c) Contract Time – The number of calendar days stated in the successful bidders proposal to complete the project to final acceptance as adjusted by authorized extensions.

(d) Daily Road User Cost – The amount which represents the average daily cost of interference and inconvenience to the road user. The Department has assigned a daily road user cost of **$5000** per calendar day for this project.

(e) Final Acceptance – Refer to Subsection 105.17(b).

Preparation of Proposal. In addition to all other bidding requirements of the project specifications, the bidder shall state his required completion time in the space provided on the "CONTRACT TIME" form contained elsewhere herein. The proposed completion time shall be based on the construction phases shown in the plans in their respective order and will be a factor used in considering bids for award. The stated number of calendar days required for completion will be the contract time for this project should the bidder be successful. The total number of days stated by the bidder to complete the project shall not exceed the maximum allowable contract time stated on the "CONTRACT TIME" form contained elsewhere herein. Bids not including a contract time, or showing time to completion in excess of the maximum amount will be considered irregular and will be rejected.

Consideration of Bids. After bids are opened and read, they will be compared based on the Total Bid Amount as determined by the following formula. In case of equal total bid amounts between qualified bidders, award will be made to the bidder proposing the lowest contract time.

Total Bid Amount = A + B
Where:
A = the contract amount as defined herein.
B = the product of the number of calendar days of contract time stated by the bidder and the daily road user cost contained herein.

Conditional Notice to Proceed/Notice to Proceed. If this A + B project is awarded during the months of September, October or November, the Department will consider issuing a Conditional Notice to Proceed with an expiration date of March 1 of the following calendar year, whereupon a Notice to Proceed will become effective. Such request for delay from the contractor shall be in writing with justification for the delay. If a Conditional Notice to Proceed is issued then any assembly period, as provided in the special provision "Contract Time", is negated.

Late Completion. Should the contractor fail to complete the project to final acceptance prior to expiration of the contract time, stipulated damages will be charged an amount equal to the daily road user cost stated herein.

INTENT OF CONTRACT (11/95): Subsection 104.01, Intent of Contract, is amended to include the following.

(a) Covenant of Good Faith and Fair Dealing.

This contract imposes an obligation of good faith and fair dealing in its performance and enforcement.

The contractor and the Department agree from the beginning to focus on creative cooperation, to avoid adverse confrontation, and to foster mutual respect, along with a positive commitment to honesty and integrity, and agree to the following mutual duties.

(1) Each will function within the laws and statutes applicable to their duties and responsibilities.
(2) Each will communicate in an open and candid manner.
(3) Each will assist in the other's performance.
(4) Each will avoid hindering the other's performance.
(5) Each will proceed to fulfill its obligations diligently.
(6) Each will cooperate in the common endeavor of the contract.

(b) Voluntary Partnering.

The Louisiana Department of Transportation and Development intends to encourage the foundation of a cohesive partnership with the contractor and its principal subcontractors and suppliers. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objective is a cooperative approach to contract management that will reduce costs, litigation, and "stress" while completing the project in accordance with the plans and specifications.

This partnership will be bilateral in makeup, and participation in partnering will be totally voluntary and is not a requirement of the contract.

A partnering conference is to be implemented and held prior to beginning construction. The contractor's management personnel and the Project Engineer will initiate a partnering development conference. They, working with the assistance of the District Construction Engineer, will make arrangements to determine the facilitator, the attendees at the conference, agenda of the conference, duration, and location. Persons required to be in attendance will be the Project Engineer and key project personnel; the contractor's on-site project manager and key project supervision personnel of both the prime and principal subcontractors and suppliers. The project design engineers, FHWA, key company representatives, and key local government personnel will also be invited to attend as necessary. The contractor and DOTD will also be required to have Regional/District and Corporate/State level managers on the project team.

Any cost associated with effectuating this partnering will be agreed to by both parties and will be shared equally and will be paid for in accordance with Subsection 109.04. The contractor, DOTD, FHWA and all others invited to the partnering conference will be responsible for any expenses incurred by their respective employees which includes salaries, travel, and lodging.

Follow-up conferences may be held periodically throughout the duration of the contract as agreed by the contractor and the DOTD.

The establishment of a partnership charter on a project will not change the legal relationship of the parties to the contract nor relieve either party from any of the terms of the contract. This partnership charter is intended only to establish an environment of cooperation and communication between all parties involved with the completion of the project.

MAINTENANCE OF TRAFFIC: Subsection 104.03 of the Standard Specifications is amended to include the following requirements.

The contractor shall provide for and maintain through and local traffic at all times and shall conduct his operations in such manner as to cause the least possible interference with traffic at junctions with roads, streets and driveways. The Sequence of Construction as shown in the plans is a suggested sequence. The contractor will be allowed to develop an alternate Sequence of Construction. The Project Engineer, Area Engineer, and Chief Construction Engineer must approve any alternate sequence.

In order to maintain traffic, the contractor shall construct temporary detours as required by the contract. All temporary detour road layouts must be submitted to the Project Engineer and reviewed and approved by the District Traffic Operations Engineer prior to their use.

The contractor shall submit official notification and road closure plans to the RTA and other affected agencies as directed by the Project Engineer.

The contractor shall conduct his paving operations on one side of the roadway at a time. The side of the roadway, including shoulder, which is open to traffic, shall be clear at all times.

When the plans show asphaltic concrete pavement layers to be placed in thicknesses of 2 inches (50 mm) or less, the contractor will be permitted to pave in one lane for a full day; the adjacent lane may be paved the following workday. When pavement layers are greater than 2 inches (50 mm) thickness, the contractor shall conduct paving operations such that the

difference in elevation of the roadway surface between adjacent lanes under traffic shall not exceed 50 mm (2 inches).

At the end of each day's paving operations, temporary pavement markings shall be in place and proper signs and barricades displayed. During the period that all lanes are open to traffic, the contractor shall neither store material nor park equipment on roadway shoulders.

When asphaltic concrete pavement is cold planed to a depth of 2 inches (50 mm) or less, the contractor will be permitted to cold plane in one lane for a full day; the adjacent lane may be cold planed the following workday. When the depth of cold planing is greater than 2 inches (50 mm), the contractor shall conduct cold planing operations such that the difference in elevation of the roadway surface between adjacent lanes under traffic shall not exceed 50 mm (2 inches). All cold planed surfaces must be free of all dust, loose gravel and ridges before opening to traffic.

All asphaltic concrete pavement new construction, overlays, and shoulder surfacing operations open to traffic shall be conducted in accordance with the following requirements.

1. Shoulder Subgrade Preparation. All vegetation shall be removed from existing shoulders before beginning temporary or final shoulder construction.

2. Temporary Shoulder Construction: Temporary shoulder construction described herein shall be completed at the end of each day's operations for all asphaltic concrete courses except the final wearing course. There shall be no drop-off from the pavement edge to the shoulder. The contractor shall blade and shape existing shoulder material against, and approximately level with, the top of the pavement surfacing to form a temporary shoulder with a uniform slope from the pavement edge to the existing shoulder line, or to a point 10 feet (3 m) from the pavement edge. If existing shoulder materials are insufficient, the contractor shall furnish, place and shape additional shoulder surfacing materials to form the temporary shoulder. Existing and/or additional materials for temporary shoulders shall be to the satisfaction of the engineer. Compaction shall be by approved methods.

No direct payment will be made for constructing and subsequently reshaping temporary shoulders, except payment for additional materials under appropriate pay items.

The contractor shall direct special attention to the maintenance of traffic at entrance and exit ramps particularly when construction operations are being conducted on the adjacent travel lanes of interstate highways. Additional signs, barricades, channelizing devices, etc. shall be provided and maintained by the contractor as directed by the engineer and their cost shall be included in the prices bid on the Temporary Signs and Barricades pay items.

The roadway and shoulders shall remain open to traffic as much as possible during non-work periods as directed by the engineer. During the period that all lanes are open to traffic, the contractor shall neither store material nor park equipment on roadway shoulders.

All existing through lanes of traffic must be maintained in each direction on Route I-10 at all times except during periods when lane closures are allowed. On mainline I-10, travel lanes may be a minimum 10' width. Paved shoulders with a minimum width of 8' must be provided where possible. 2' minimum width shoulders may be used with the approval of the Project Engineer. One lane of traffic is to be maintained on all ramps at all times except during periods when lane closures are allowed. On each service road, one direction of traffic must be maintained at all times unless closure is approved by the Project Engineer. Westbound traffic must be maintained on the North Service Road, and eastbound traffic must be maintained on the South Service Road. Construction activities behind temporary pre-cast concrete barriers will be allowed at all times except during the holiday periods defined elsewhere.

LANE CLOSURE RESTRICTIONS: All lanes and ramps shall remain open to traffic and no work shall be performed except during the times when lane and ramp closures are allowed. Lane and ramp closures shall only be allowed while work is being performed. Ramp closures must be approved by the Project Engineer one week in advance.

On I-10, a minimum of two lanes per direction shall remain open to traffic at all times, except during center lane work. For work in the center lane only, one travel lane shall remain open to traffic at all times where there are three travel lanes in one direction. Two travel lanes shall remain open at all times where there are four travel lanes in one direction. The configuration for center lane closures must be approved in advance by the Project Engineer. Center lane closures shall take place in only one direction at a time and only when work is being performed in the center lane.

I-10 EASTBOUND SINGLE LANE: Closures shall be allowed only at night and only during the following times:

9 pm Sunday to 5 am Monday
9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday

I-10 EASTBOUND CENTER LANE: Closures shall be allowed only at night and only during the following times:

10 pm Sunday to 5 am Monday
10 pm Monday to 5 am Tuesday
10 pm Tuesday to 5 am Wednesday
10 pm Wednesday to 5 am Thursday
10 pm Thursday to 5 am Friday

I-10 EASTBOUND RAMPS: Closures shall be allowed only at night and only during the following times:

9 pm Sunday to 5 am Monday
9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday

I-10 WESTBOUND SINGLE LANE: Closures shall be allowed only at night and only during the following times:

10 pm Sunday to 6 am Monday
10 pm Monday to 6 am Tuesday
10 pm Tuesday to 6 am Wednesday
10 pm Wednesday to 6 am Thursday
10 pm Thursday to 6 am Friday

I-10 WESTBOUND CENTER LANE: Closures shall be allowed only at night and only during the following times:

10 pm Sunday to 6 am Monday
10 pm Monday to 6 am Tuesday
10 pm Tuesday to 6 am Wednesday
10 pm Wednesday to 6 am Thursday
10 pm Thursday to 6 am Friday

I-10 WESTBOUND RAMPS: Closures shall be allowed only at night and only during the following times:

10 pm Sunday to 5 am Monday
10 pm Monday to 5 am Tuesday
10 pm Tuesday to 5 am Wednesday
10 pm Wednesday to 5 am Thursday
10 pm Thursday to 5 am Friday

RAMP NCW: Full closure of I-10 will be allowed for construction of the continuous steel girders. Eastbound and westbound I-10 may be closed simultaneously. The closure will be allowed between the hours of 6 am and 6 pm on Sundays. Two closures will be allowed. The closure dates must be approved a minimum of three weeks in advance by the District Traffic Operations Engineer. Any additional closures needed for this work will require prior approval from the District Traffic Operations Engineer and the Chief Construction Engineer. Closures will not be allowed on days of New Orleans Saints home football games, Tulane University home football games, the New Orleans Bowl, the Sugar Bowl, the BCS Championship game, and any other event deemed significant by the District Traffic Operations Engineer.

VETERANS BLVD: Roadway consists of three through lanes and one left turn lane in each direction. Single lane closures in each direction will only be allowed during the following times:

9 am – 3 pm each day Monday through Friday
9 pm Sunday to 5 am Monday
9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday
9 pm Friday to 9 am Saturday
9 pm Saturday to 9 am Sunday

The contractor shall make every effort to maintain two through lanes of traffic in each direction of Veterans during the times listed above. When work is required in the center lane, Veterans Blvd. may be reduced to one through lane in each direction only when absolutely necessary and only during the following times:

9 pm Sunday to 5 am Monday
9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday
9 pm Friday to 9 am Saturday
9 pm Saturday to 9 am Sunday

The contractor shall use high early strength concrete for the Veterans Blvd. pavement. (Specifications for high early strength concrete are contained elsewhere in the Special Provisions.)

CAUSEWAY BLVD: Single lane closures will only be allowed during the following times:

9 am – 3 pm each day Monday through Friday
9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday
9 pm Friday to 5 am Saturday
9 pm Saturday to 5 am Monday

U-TURNS AT STA. 34+00 AND STA. 41+00: The U-turn lane may be reduced to 12' wide and remain open to cars at all times. The U-turns will be closed to truck traffic if the lane width is reduced. Only one of these two U-turns may be reduced in width at a time. The contractor shall make every effort to maintain traffic in these U-turns. The contractor shall also use high early strength concrete for the U-turn pavement. (Specifications for high early strength concrete are contained elsewhere in the Special Provisions.) The U-turn may be closed only when absolutely necessary and only during the following times:

9 pm Monday to 5 am Tuesday
9 pm Tuesday to 5 am Wednesday
9 pm Wednesday to 5 am Thursday
9 pm Thursday to 5 am Friday
9 pm Friday to 9 am Saturday
9 pm Saturday to 5 am Monday

The Project Engineer may adjust these times to prevent traffic queues greater than 30 minutes.

If lanes are not reopened by the required time on a consistent basis in the opinion of the Department, the lane closure period will be adjusted to end one hour earlier than listed above. No adjustment will be made to the lane closure start time.

No work shall be allowed, all lanes shall be open, and all time charges shall stop during the New Years, Mardi Gras, Irish-Italian Parade, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas holiday periods as defined by the project engineer. No work will be allowed, all lanes shall be opened, and all time charges will stop during any contraflow operations.

LATE LANE OPENING PENALTY: A late lane opening penalty shall be charged to the contractor for any lane closure on any roadway or ramp which extends beyond the allowable closure times. The penalty shall include short-term closures due to moving operations. The penalty shall be computed in hour increments only with fractions of an hour rounded up to the next whole hour. The penalty shall be assessed as per the following table:

Length of closure beyond the allowable closure times	Hourly penalty as a percentage of the daily penalty
First Hour	25%
Second Hour	25%
Third Hour	25%
Fourth Hour	25%
Remaining Hours	No additional penalty

The late lane opening penalty shall be assessed at a rate of **$60,000 per day for mainline I-10 and $20,000 per day for all other roadways and ramps**. Any monies assessed for late lane opening penalties shall be deducted from partial payments due the contractor as stipulated damages.

RAMPS NCE (PHASE I) AND NCW (PHASE III) CONSTRUCTION TIME AND LATE RAMP OPENING PENALTY: Allowable durations for construction of Ramp NCE in Phase I and the portion of Ramp NCW to be constructed in Phase III are as follows:

Ramp NCE, Phase I – 60 days total
Ramp NCW, Phase III – 90 days total

The construction duration for Ramp NCE is considered to begin the day the existing ramp from northbound Causeway to eastbound I-10 is closed to traffic and ends the day Ramp NCE is opened to traffic. The construction duration for Ramp NCW is considered to begin the day the existing ramp from northbound Causeway to westbound I-10 is closed to traffic and ends the day Ramp NCW is opened to traffic.

A late ramp opening penalty shall be charged to the contractor for each day construction extends beyond the allowable closure durations. The penalty shall be computed in daily increments only with fractions of a day rounded up to the next whole day.

The late ramp opening penalty shall be assessed at a rate of **$5000 per day**. Any monies assessed for late ramp opening penalties shall be deducted from partial payments due the contractor as stipulated damages.

FEDERAL AID PARTICIPATION (04/08): Subsection 107.05 of the Standard Specifications and the supplemental specifications thereto is amended as follows.

The second paragraph is deleted.

PUBLIC CONVENIENCE AND SAFETY (09/05): Subsection 107.07 of the Standard Specifications is amended to include the following.

The procurement of police officers for public safety during construction shall be in accordance with the Department's Policy for Use of Police Officers in Construction/Maintenance Work Zones. The DOTD project engineer shall determine the need for police officers to assist in controlling traffic in a particular work zone. The number of officers needed, the tasks they will perform, and their location within the work zone will vary as a function of the zone type. Police officers shall be placed at strategic locations at times during construction as determined by the DOTD project engineer.

The three types of law enforcement services are Police Presence, Police Enforcement and Police Traffic Control. Police Presence is defined as the use of police officers at the beginning of the active work zone area utilizing their blue lights to gain the attention of drivers. Police

Enforcement is utilized when enforcement is required to enhance the safe operation of the work zone. Police Traffic Control is to be used in detour / diversion situations.

The DOTD project engineer will extend an invitation to the appropriate Louisiana State Police (LSP) Troop Commander to attend the pre-construction conference.

Prior to commencing the work on the project, the contractor shall contact the LSP Troop Commander to obtain law enforcement services of police officers during construction. If the LSP Troop is unable to provide law enforcement services for the project work zone, the LSP Troop Commander or the contractor will extend the invitation to the appropriate local law enforcement authorities.

Police officers will report directly to the contractor. However, the contractor will not have the authority to direct the placement of the police officer or the patrol vehicle in situations that are contrary to established procedures and/or could endanger the police officer. The DOTD project engineer will make the final determination on all issues regarding police officer responsibility in work zones.

Prior to the beginning of the shift, the contractor shall provide a daily work zone briefing to the police officer. For major changes in traffic patterns, advanced notification shall be provided to the police agency working the detail. This information should also be provided to the motoring public through the DOTD district and / or the LSP Troop.

The contractor shall pay for law enforcement services provided by the police officers based on the hourly wage and vehicle rate fee schedule below. The Department will reimburse the contractor monthly for the incurred cost. The contractor shall furnish time record documentation with the request for reimbursement. The provisions of Subsection 109.04 shall not apply to this reimbursement.

The agreed upon fee schedule for police officers in the work zone is as follows:

$25 per vehicle per day - vehicle use fee

$40 per hour per officer (one officer per vehicle) (minimum 2 hours).

ENVIRONMENTAL PROTECTION (08/06): Subsection 107.14 of the 2006 Standard Specifications is amended to include the following paragraphs at the end of this subsection.

The Notice of Intent (NOI) will be submitted by the Department to the Louisiana Department of Environmental Quality (LADEQ) prior to the project letting. The project engineer will complete and submit the Notice of Termination (NOT) to the LADEQ after final stabilization of the site, in accordance with the terms of the permit.

The use of erosion control features or methods other than those in the contract shall be as directed.

The Storm Water Pollution Prevention Plan shall be comprised of Section 204 of the standard specifications along with applicable supplemental specifications and special provisions, and Standard Plan EC-01, "Temporary Erosion Control Details."

SUBLETTING OF CONTRACT (01/83): In accordance with Subsection 108.01 of the Standard Specifications, the following items are designated as "Specialty Items":

Item 704-01-C, Guard Rail (Double Thrie Beam) (3' – 1 ½" Post Spacing)
Item 704-03, Blocked Out Guard Rail
Item 704-06-A, Guard Rail Anchor Sections (Trailing End) (Single Thrie Beam)
Item 704-08-B, Guard Rail Transitions (Double Thrie Beam)
Item 704-11-A, Guard Rail End Treatment (Flared)
Item 705-06-B, Chain Link Fence (5 – Foot Height)
Item 705-06-E, Chain Link Fence (2.5 – Foot Height) (Barrier Mounted)
Item 729-01, Sign (Type A)

Item 729-06, Sign (Overhead Mounted)
Item 729-08-B, Mounting (3 ½" Post)
Item 729-09, Mounting (Overhead Truss) (Ground Mounted)
Item 729-10, Mounting (Overhead Truss) (Structure Mounted)
Item 729-20-A, Footings For Overhead Mountings (Truss)
Item 729-21, U-Channel Post
Item 730-01, Trenching and Backfilling
Item 730-02-A, Conduit With Conductors (1" Rigid Alum., (2) 1/C #8 XHHW, (1) 1/C #10 Ground)
Item 730-02-B, Conduit With Conductors (3/4" Rigid Alum., (2) 1/C #10 XHHW, (1) 1/C #10 Ground)
Item 730-02-C, Conduit With Conductors (1 ½" PVC Sch. 40 in Trench, W / (8) 1/C #8 XHHW, (1) 1/C #10 Ground)
Item 730-02-D, Conduit With Conductors (1 ½" PVC Sch. 40 in Trench, W / (2) 1/C #2 XHHW, (1) 1/C #2 Ground)
Item 730-02-E, Conduit With Conductors (1 ½" PVC Sch. 40 in Trench, W / (2) 1/C #2 XHHW, (1) 1/C #2 Ground)
Item 730-02-F, Conduit With Conductors (1" PVC Sch. 40 in Trench W / (5) 1/C #6 XHHW, (1) 1/C #6 Bare)
Item 730-02-G, Conduit With Conductors (1" Rigid Alum. Exposed W / (8) 1/C #6 XHHW, (1) 1/C #6 Bare)
Item 730-02-H, Conduit With Conductors (1" PVC Sch. 40 in Trench W / (3) 1/C #6 XHHW, (1) 1/C #6 Bare)
Item 730-02-I, Conduit With Conductors (1 ½" PVC Sch. 40 in Trench W / (7) 1/C #6 XHHW, (1) 1/C #6 Bare)
Item 730-02-J, Conduit With Conductors (1 Liquid Tight Flex Aluminum W/(2) #10 THHW-2, (1) 1/C #10 THHW-2 Green Ground)
Item 730-04, Jacked or Bored Casing (6" Schedule 80 PVC)
Item 730-05, Light Pole (Two Luminaire) (40' Mounting Height, Steel with Internal Lowering Device Mounted to the Median Bar.)
Item 730-06, High Mast Pole (110' Mounting Height Steel 6-Luminaire Ring With Internal Lowering Sevice)
Item 730-07-A, Luminaire (Type "A", 6 – 1000 W High Mast Luminaire Cluster with Lowering Device)
Item 730-07-B, Luminaire (Type "B", 400 W HPS, with Lowering Device)
Item 730-07-C, Luminaire (Underpass Type "C", 150W HPS, Weatherproof)
Item 730-08, Electrical Service Point
Item 730-11, Removal and Disposal of Electrical Equipment
Item 730-12, Removal and Storage of Light Poles
Item 730-13, Removal and Disposal of Light Pole Foundations (Apron Paving)
Item 730-14, Removal and Disposal of Luminaires
Item 730-16, Underground Junction Box (PC118DG12)
Item 730-17, Structure Junction Box
Item 731-01, Nonreflectorized Raised Pavement Markers
Item 731-02, Reflectorized Raised Pavement Markers
Item 732-02-A, Plastic Pavement Striping (Solid Line) (4" Width)
Item 732-02-B, Plastic Pavement Striping (Solid Line) (6" Width)
Item 732-02-C, Plastic Pavement Striping (Solid Line) (8" Width)
Item 732-02-D, Plastic Pavement Striping (Solid Line) (12" Width)
Item 732-02-E, Plastic Pavement Striping (Solid Line) (24" Width)

Item 732-03-A, Plastic Pavement Striping (Broken Line) (4" Width)
Item 732-04-A, Plastic Pavement Legends & Symbols (Arrow)
Item 732-04-C, Plastic Pavement Legends & Symbols (Only)
Item 732-05, Removal of Existing Markings
Item 736-01, Trenching and Backfilling
Item 736-03, Jacked or Bored Conduit (3" RMC)
Item 736-04-A, Signal Support (Mast Arm Pole, Twin Arms, 35' & 30')
Item 736-04-B, Signal Support (Mast Arm Pole, Twin Arms, 40' & 30')
Item 736-04-C, Signal Support (Mast Arm Pole, 35' Arms)
Item 736-10-A, Underground Junction Box (Type D)
Item 736-10-B, Underground Junction Box (Type E)
Item S-001, Impact Attenuators (Construction Zone)
Item S-008-A, Conduit (1" PVC)
Item S-008-B, Conduit (2" PVC)
Item S-008-C, Conduit (3" PVC)
Item S-009, Traffic Manhole
Item S-011, Loop Detector
Item S-012-A, Signal Head (Type A) (Mast Arm Mount)
Item S-012-B, Signal Head (Type B) (Mast Arm Mount)
Item S-012-C, Signal Head (Type A) (Pedestal Mount)
Item S-013, Priority Control Equipment
Item S-013-A, Cable (2C #14 AWG, 600V)(With outer Shield)
Item S-013-B, Cable (5C #14 AWG, 600V)
Item S-013-C, Cable (7C #14 AWG, 600V)
Item S-013-D, Cable (12C #19 AWG, 600V)(With Outer Sheild)
Item S-014, Signal Support (Pedestal Pole)
Item S-102, Light Support Base
Item S-103-A, Sign Support Base (Small)
Item S-103-B, Sign Support Base (Overhead Truss)
Item S-104, Impact Attenuators (Kinetic)
Item S-150, 8" PVC (SDR26) Sewer Pipe at 4' To 6' of Cover
Item S-151, 8" PVC (SDR26) Sewer Pipe at 6' To 8' of Cover
Item S-152, Type III Standard Trench (4' to 6')
Item S-153, Type IV Standard Trench (6' to 8')
Item S-154, Standard Manholes Less Than 6' Deep
Item S-155, Standard Manholes at 6' To 8' Deep
Item S-156, 6" PVC (SDR26) Service Line
Item S-157, 8" x 6" PVC 45 Degree Wyes
Item S-158, 6" PVC 45 Degree Elbows
Item S-159, 6" Clean Out Installation
Item S-160, Granular Material Backfill for Sewer Line
Item S-161, Sewer Line Marking Tape
Item S-162, Demolition of Existing Sewer Line
Item S-163, Demolition of Existing House Service Line
Item S-164, Demolition of Existing Manhole
Item S-165, 8" D.I. Pipe for Temporary Water Line
Item S-166, D. I. Fittings W / Restr. Joints for Temp. Water Line
Item S-170, 8" PVC Pipe (C-900)
Item S-171, 8" PVC Pipe (C-900) with Restrained Joints
Item S-172, 8" Ductile Iron Pipe, B283, with Restrained Joints

Item S-173, 6" Ductile Iron Pipe, with Restrained Joints
Item S-174, Ductile Iron Fittings
Item S-175, Ductile Iron Fittings with Restrained Joints
Item S-176, Air Valve Installations
Item S-177, 8" Valve with Restrained Joints
Item S-178, 6" Valve with Restrained Joints
Item S-179, Hydrant Installation (Including Valves, etc.)
Item S-180, 2" Meter Relocation
Item S-181, ¾" Meter Relocation
Item S-182, 2" P.E. Service Line
Item S-183, ¾" P.E. Service Line
Item S-184, 2" Galv. Iron (Sch. 40) Temp. Service Line
Item S-185, 2" PVC (Sch. 80) Temp. Service Line
Item S-186, 2" Service Tap
Item S-187, ¾" Service Tap
Item S-188, Timber Thrust Blocking
Item S-189, Granular Material for Water Line Foundation
Item S-190, Granular Material Backfill for Water Line
Item S-191, Water Line Marking Tape
Item S-192, Abandonment & Removal of All Water Pipe Along Causeway Blvd.
Item S-197, Dynamic Message Sigh Unit

CASH MANAGEMENT PLAN - "PHASE FUNDED" CONSTRUCTION (07/04)

This project has been selected by the Department to be implemented under the cash management plan, "phase funding," authorized by LSA-R.S. 48:251 and LAC 70:101 et seq., for certain long-term construction contracts. This construction project will be segmented by fiscal year, and only those funds necessary to carry out planned construction activities in each fiscal year will be appropriated by the Legislature and budgeted by the Department.

The continuation of this contract is contingent upon the continuation of an appropriation of funds by the Legislature to fulfill the requirements of the contract. If the Legislature fails to appropriate sufficient monies to provide for the continuation of this contract or if such appropriation is reduced by the veto of the governor or by any means provided in the Capital Outlay Act, Title 39 of the Louisiana Revised Statutes of 1950, or any other applicable laws to prevent the total appropriations for the year from exceeding revenues for that year or for any other lawful purpose and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated. When a contract, or portion thereof, is terminated for the reasons enumerated herein, the Louisiana Standard Specifications for Roads and Bridges, Subsection 108.11, Termination of Contract, shall govern.

In order to insure adequate funds are budgeted each year for this phase-funded project, the contractor shall comply with the special provision, "Critical Path Method (CPM) For Construction Progress Scheduling", contained elsewhere herein.

Nothing herein shall relieve the contractor from any other requirement or obligation as set forth in the standard specifications, special provisions, supplemental provisions or any other contract requirement.

CRITICAL PATH METHOD (CPM) FOR CONSTRUCTION PROGRESS SCHEDULING (06/07): Critical Path Methods (CPM) as described and with terms as defined in the Associated General Contractors of America (AGC) publication, *Construction Planning and Scheduling*, latest edition, shall be used in construction scheduling, establishing the critical

items of work, and measuring progress of the work. In case of discrepancy between these specifications and *Construction Planning and Scheduling*, these specifications shall govern.

Section 108, Prosecution and Progress of the 2006 Standard Specifications and the Supplemental Specifications thereto is amended as follows.

Subsection 108.03, Construction Progress Schedule: This subsection is deleted and the following substituted.

The contractor shall submit to the project engineer for approval, CPM Construction Schedules, Summary of Activities tabulations, and Scheduled Earnings tabulations, all as described hereinafter, and altogether defined as "Construction Progress Schedule" or "Construction Schedule". The Construction Progress Schedule shall be based on the planned and specified finished work, the maintenance of traffic restrictions, and other design requirements given in the plans and specifications. Each sheet or page of each submittal shall be identified with the contractor's company name, state project number, project name, date prepared, revision dates, and sheet or page number. If the submittals are not prepared by the contractor's own staff, the company name of the preparer shall be shown on each sheet or page.

The critical activities as shown on the approved Construction Schedule will be considered in establishing the controlling item of work. If the Construction Schedule has not been approved, the engineer will establish the controlling work item and charge the contract time accordingly. Scheduled Earnings will be the basis for measurement of contractor's progress.

Approved Construction Progress Schedules and approved associated data shall become part of the contract documents. Un-approved Construction Progress Schedules and associated data shall not be considered relevant or applicable for any purposes during or after completion of the project and shall not be binding on the Department. The sequence of work as represented on the Construction Progress Schedule and subsequent updates shall be interpreted as being the intention of the contractor at the time that the schedule was made.

(a) Construction Schedule: The Construction Schedule shall be a Critical Path Method (CPM) graphic diagram, computer prepared, utilizing the Precedence Diagramming Method (PDM). For the calendar day contract, the Gregorian calendar shall be used.

The schedule shall show and describe the various activities of work required to complete the contract in sufficient detail so that all activities are readily identifiable and progress on the activities can be readily measured. Sufficient detail in bridge work means each element of work (piles, footings, columns, caps, rebar, cure time, etc.) of individual bents; each element of work in individual spans (girders, strip seal joints, Class AA, rebar, cure time, etc.); individual approach slabs; railings; rebar for all of the above as separate activities; and, miscellaneous other bridge work. Sufficient detail in road work means individual runs of pipe in drainage structures; individual box culverts; individual detour roads; the embankment, excavation, base and paving layers within definable geometric limits (e.g., from station to station, within a single ramp, etc.). Physical locations of activities within definable geometric limits (e.g., from station to station, within a single ramp, individual bents, individual spans, etc.) shall be included in the activity description or shown in activity codes relative to each activity. It shall include submittals and approvals of critical samples, shop drawings, procedures, order lists (pilings for example), or other things that could have a significant schedule impact.

Relatively minor items of work, similar or non-similar, may be grouped together into one activity (or more). Activities to be performed by subcontractors shall be included and identified. The schedule shall show the sequence in which the activities are to be accomplished and their dependency relationships. The estimated contract earnings and pay item quantities associated with each activity shall be included, and the sum of the estimated earnings shall equal the current contract amount.

The duration of activities shall be in whole calendar days and no activity shall have duration of less than one calendar day or more than 30 calendar days. The ending event of the schedule shall be a finish milestone identified as "Contract Completion Date". Its sole predecessor shall be "Reserved Float". The sole predecessor of "Reserved Float" shall be "Final Inspection" which shall be a finish milestone and shall have as predecessors all of the activities that must be completed prior to the Department's final inspection of the work. The duration of "Reserved Float" is the difference between "Final Inspection" and "Contract Completion Date". "Reserved Float" is defined as that part of the shared float reserved exclusively for the contractor's use. The contract date for stipulated damages will be adjusted by change order to the beginning date of the activity "Reserved Float".

The Construction Schedule shall be computer plotted on sheets not larger than 22 inches x 36 inches and shall show a continuous flow of information from left to right with no arrows from right to left and shall be drawn to a time scale of calendar days. The critical path shall be clearly identified. Resource constraints shall be identified, as shall scheduled starts or completions imposed on the schedule by the contractor.

The contractor shall submit color-coded graphics in the required multiple copies. The choice of the color coding must remain in effect for the life of the contract.

The contractor shall provide the Department with the means to electronically translate the Construction Schedule data into a configuration that can be read and processed by the Department or its consultants' hardware and Primavera software. If the contractor elects to use SureTrak Project Manager software, the following defaults must be placed: (1) resources shall be non-driving; (2) default activity type shall be "Task"; (3) activity type shall not be "Independent"; (4) duration display style shall be "Day (d)"; (5) float style shall be "Days"; and, (6) dates time format shall be "Don't show time". The revenue feature in SureTrak Project Manager does not translate to Primavera Project Planner (P3), so in SureTrak Project Manager the earnings must be entered as cost data. In both the SureTrak Project Manager and in the Primavera Project Planner (P3) "Back up" menu selection, the contractor will ensure that the option "Remove access list during backup" is checked. In addition, the project must be saved in SureTrak as a "Concentric P3" Type project.

(b) Summary of Activities: The Summary of Activities shall be a tabulation of all activities shown on the Construction Schedule, and shall accurately reflect the data used in preparation of the Construction Schedule. The summary shall be computer generated and sequenced by activity number. Each activity shall include as a minimum the following, in calendar days:

1. Activity numbers.
2. Activity description.
3. Estimated duration of activity.
4. Early start.
5. Late start.
6. Constrained start, if constrained.
7. Early finish.
8. Late finish.
9. Constrained finish, if constrained.
10. Status (whether critical).
11. Free float.
12. Total float.
13. Monetary value of the activity.
14. Remaining duration and calendar days used.

(c) Scheduled Earnings: The Scheduled Earnings shall be a product of the software creating the Construction Schedule and shall be a tabulation of accumulated scheduled contract earnings, based on late starts, measured in accumulated dollars for all activities, for each monthly partial estimate. The tabulation shall be prepared from the Construction Schedule and shall be computer generated. The Schedule of Earnings will not include advanced payments for stockpiled materials.

(d) Cash Management Document: When designated as a Cash Management Project, prior to the issuance of the Notice to Proceed, the contractor shall provide to the Department and obtain approval from the Department of the Scheduled Earnings report as described above, except that it shall be based on early starts. The Department will use this report for its cash management purposes. Failure of the contractor to provide and obtain approval of the Scheduled Earnings Report will result in withholding of any funds due the contractor.

(e) Submittal: Prior to or at the preconstruction conference the contractor shall submit to the project engineer for approval, in triplicate, a Construction Schedule giving a proposed schedule of operations that provides for completion of the work, a Summary of Activities tabulation, a Scheduled Earnings tabulation, and a Forty-Five Day Look-Ahead task list. The contractor shall also submit the Construction Schedule data electronically capable of being processed with the hardware and software being used by the Department or its consultants.

Within 7 calendar days after receipt of the submittal, the project engineer and contractor shall meet and review the proposed schedules and tabulations. Any revisions resulting from the review shall be submitted, in triplicate, for approval within 7 calendar days after the meeting. This procedure will be repeated as necessary. The approved final schedule shall be called the "Baseline Schedule".

Failure to have obtained approval of a Baseline Schedule and tabulations within 20 calendar days after the Notice to Proceed will result in withholding twenty-five percent of the amount of partial estimates until such schedules and tabulations are submitted and approved. Failure to have obtained approval of a Baseline Schedule and tabulations within the third estimate period may result in the Department's determination that the contractor is in default under the provisions of Subsection 108.09.

(f) Construction Schedule Updates: The contractor shall update and submit each month, within 7 calendar days after the partial estimate is submitted, the Construction Schedule critical path diagram, Summary of Activities tabulation, Scheduled Earnings tabulation, a Forty-Five Day Look-Ahead task list, and a current Turnaround Document as follows:

(1) The updated Construction Schedule critical path diagram will be in the same form as that submitted in (e) Submittal. It will be updated for progress through the estimate closing date, recalculated and plotted. The contractor will revise, adjust, and recalculate the schedule so that the difference in the work completion date calculated by the Retained Logic Method shall not be more than one-half an estimate period different from the work completion date calculated by the Progress Override Method. The Construction Schedule critical path diagram will show both the look ahead critical path for the duration of the project and the look back critical path as reported in the prior months.

(2) The updated Summary of Activities and Scheduled Earnings tabulation will be in the same form as that submitted in (e) Submittal. It will be updated for progress through the estimate closing date, recalculated and printed.

(3) The Forty-Five Day Look-Ahead task list will show all incomplete activities which the logic has determined either should be or may be active during the next forty-five days. It will be plotted in a graphic form similar to that of the Construction Schedule critical path diagram.

(4) The Turnaround Document will be a listing of the log record of a new activity added monthly to the schedule for the purpose of keeping a current presentation of the following information:

a. The original contract completion date presented as actual calendar date.
b. The number of days added to the contract by approved change order (if any, if none, so state).
c. The present computed completion date presented as an actual calendar date and as a workday number, if applicable.
d. A list of activities deleted and added (if any, if none, so state), including their descriptions.
e. A list of logic changes and the reasons for the changes (if any, if none, so state).
f. A list of budget changes and the reasons for the changes (if any, if none, so state).
g. A narrative description of any other changes to the Construction Schedule critical path diagram.

Failure to submit the monthly updates of the Construction Progress Schedules within 7 calendar days after the partial estimate was submitted will result in withholding of twenty-five percent of the amount of partial estimate payments until such schedules are submitted and approved. Failure to have obtained approval of three consecutive monthly updates of the Construction Progress Schedule may result in the Department's determination that the contractor is in default under the provisions of Subsection108.09.

(g) CPM Reviews: The project engineer will designate the time and location for review of construction progress. The contractor's representative designated under Subsection 105.05 will be required to attend the construction progress review or a contractor's representative directed by the project engineer shall attend. The current approved Construction Schedule, Summary of Activities and Scheduled Earnings tabulations shall be reviewed, and required or desired changes discussed and documented.

As a minimum the following shall be discussed: contractor's compliance with approved schedules and tabulations, delays, proposed and approved contract quantity increases and decreases, proposed and approved extra work, actual starts, durations and finishes, and actual contract earnings.

If requested by the project engineer, within 7 calendar days following the review meeting the contractor shall submit to the project engineer for approval, in triplicate, a revised Construction Schedule, Summary of Activities tabulation, and Scheduled Earnings tabulation, and Forty-Five Day Look-Ahead, all in accordance with paragraph (e) Submittal, and all brought up to date to reflect agreements made at the review meeting. Failure to submit the revision of the Construction Progress Schedules within 7 calendar days after the request will result in withholding of twenty-five percent of the amount of partial estimate payments until such schedules are submitted and approved. Failure to have obtained approval of three consecutive monthly updates of the Construction Progress Schedule may result in the Department's determination that the contractor is in default under the provisions of Subsection108.09.

(h) The CPM Construction Schedule will be provided at no direct pay.

Subsection 108.04, Prosecution of Work: Heading (b), Disqualification, is deleted and the following is substituted.

(b) Disqualification. The contractor's progress will be determined monthly at the time of each partial estimate, and will be based on the total amount of money earned by the contractor, excluding advanced stockpiled material as shown by the partial estimate compared to scheduled earnings as shown by the approved Scheduled Earnings tabulation, as of the end of the partial

estimate period. If the contractor's progress is more than 10 percent behind scheduled earnings, the contractor may be notified that disqualification will occur if progress becomes delinquent by more than the percentages specified hereinafter, and additional notifications will be made, as the engineer deems necessary.

Prior to the elapsing of 55 percent of the contract time, the contractor will be disqualified if progress is more than 20 percent behind scheduled earnings. After 75 percent of the contract time has elapsed, the contractor will be disqualified if progress is more than 10 percent behind scheduled earnings. Disqualification will be applied between 55 and 75 percent contract time elapsed on a pro-rata basis; for example, when 65 percent of the contract time has elapsed, the contractor will be disqualified if progress is more than 15 percent behind scheduled earnings.

The Department's placement of the contractor in default under any provision of this subsection will be cause for disqualification. During the period of disqualification, the contractor will not be permitted to bid on contracts nor be approved as a subcontractor on contracts. Any bid submitted by the contractor during the period of disqualification will not be considered and will be returned. The period of disqualification will continue until the completed work on the contract is within the foregoing percentages or until all work on the contract has been satisfactorily completed.

Subsection 108.07, Determination and Extension of Contract Time: This subsection is amended as follows.

The third and fourth paragraphs are deleted and the following substituted.

The contract time for the work as awarded is based on the original quantities as defined in Subsection 102.05 and includes time to procure material, equipment and an adequate labor force to complete the work. If satisfactory fulfillment of the contract requires performance of work in greater quantities than those specified, or requires performance of extra work in accordance with Subsection 104.02 and the contractor requests additional contract time, the contractor shall submit a proposed CPM schedule based on the latest approved CPM schedule showing the increased time and revised completion date for approval by the Department. When the contract is altered in accordance with Subsection 104.02 and the engineer determines that a reduction in contract time is warranted due to decreased effort, the contractor shall submit a proposed CPM schedule based on the latest approved CPM schedule showing the reduced time and revised completion date for approval by the Department. A CPM schedule will be required for the engineer to process a change order that either increases or decreases the contract time.

If the contractor finds it impossible, for reasons beyond the contractor's control, to complete the work within the contract time as specified or as extended in accordance with the provisions of this subsection, the contractor shall, at the time the delay occurs make a written request to the engineer for an extension of time setting forth therein the reasons which justify granting the request. Such written request shall conform to the requirements of EDSM III.1.1.28. If the request does not so conform, the contractor hereby agrees to and shall be deemed to have expressly waived any claim for such additional time. The contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the engineer finds that the work was delayed because of conditions beyond the control and without the fault of the contractor, the engineer may extend the contract time in such amount as conditions justify. The contractor's written request to the engineer for an extension of contract time shall include a proposed CPM schedule based on the latest approved CPM schedule update showing the increased time and revised completion date for approval by the Department. This CPM schedule document will be required for the engineer to process a change order that changes the contract time.

DETERMINATION AND EXTENSION OF CONTRACT TIME (01/04): Subsection 108.07 Determination and Extension of Contract Time is amended to include the following.

The contractor shall document for each month of scheduled construction, the occurrence of adverse weather conditions having an impact on controlling items of work. An adverse weather day is one on which rainfall or wet soil conditions will prevent construction operations from proceeding for at least 5 continuous hours of the day or 65 percent of the normal work day, whichever is greater, with the normal working force engaged in performing the controlling item of work. If the contractor submits a written request for additional contract time due to adverse weather conditions, the contractor's request will be considered only for adverse weather days in excess of the allowable number of days per month stated below. An equitable adjustment in contract time will be made at the conclusion of the project by comparing the total number of excess adverse weather days requested by the contractor to the number of adverse weather days that were included in the construction schedule but were not used. Contract time will not be reduced due to the adjustments for adverse weather. An adjustment in the contract time due to adverse weather will not be cause for an adjustment in the contract amount.

The following are anticipated adverse weather days that the contractor shall include in each month of his calendar day construction schedule.

January	11 days	May	5 days	September	4 days
February	10 days	June	6 days	October	3 days
March	8 days	July	6 days	November	5 days
April	7 days	August	5 days	December	8 days

PAYMENT ADJUSTMENT (03/07): Section 109, Measurement and Payment of the 2006 Standard Specifications and the supplemental specifications thereto, is amended to add the following.

This project is designated for payment adjustment for asphalt cements and fuels in accordance with Subsection 109.09 as follows.

109.09 PAYMENT ADJUSTMENT (ASPHALT CEMENTS AND FUELS).

(a) General: Payment for contract items indicated herein will be adjusted to compensate for cost differentials of Performance Graded (PG) asphalt cements, gasoline, and diesel fuel when such costs increase or decrease more than 5 percent from the Department's established base prices for these items. The base price indices for asphalt cements and fuels will be the monthly price indices in effect at the time bids are opened for the project. The base price indices for asphalt cements will be as stated in paragraph (b) below. The base price index for fuels will be as stated in paragraph (c) below.

Payment adjustments will be made each monthly estimate period when a price index for this period varies more than 5 percent from its respective base price index. The monthly price indices to be used with each monthly estimate will be the price indices for the month in which the estimate period begins.

If the project is placed in default, payment adjustments will be based on the monthly price indices used for the last monthly estimate period prior to the project being placed in default, unless a monthly price index decreases in which case the lower monthly price index will be used.

If it is determined after completion of work on any eligible item that the total quantity paid to date must be adjusted to reflect more accurate quantity determinations, the Department will prorate the additional quantity to be added or subtracted over all estimate periods in which the item of work was performed in order to determine additional payment adjustments. If

payment adjustments were made during any of these partial estimate periods, this added or subtracted quantity that has been prorated will likewise have payment adjustments calculated and included.

(b) Performance Graded (PG) Asphalt Cements: The base price index will be the monthly price index in effect at the time of bid opening as shown elsewhere herein. The monthly price indices will be the average, excluding the extreme outliers, of the unit prices for PG 64-22, the average, excluding the extreme outliers, of the unit prices for PG 70-22m, and the average, excluding the extreme outliers, of the unit prices for PG 76-22m. The monthly prices for each of these asphalt materials will be F.O.B. refinery or terminal as determined from the quoted prices effective on the first calendar day of each month from suppliers of these materials. Suppliers considered are those who have requested to participate in the liquid asphalt index determination and have supplied materials on DOTD projects within the past twelve months. These suppliers and materials shall be listed on the Department's Qualified Products List (QPL 41) and must be marketed in Louisiana.

Payment adjustments will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,

$$P_a = (A - 1.05B) \times C \times D \times (1.00 + T)$$

If Base Price Index exceeds Monthly Price Index,

$$P_a = (0.95B - A) \times C \times D \times (1.00 + T)$$

Where:

P_a	=	Price adjustment (increase or decrease) for asphalt cement.
A	=	Monthly Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.
B	=	Base Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.
C	=	Tons/megagrams of asphaltic concrete.
D	=	Percent of respective asphalt cement, per job mix formula, in decimals.
T	=	Louisiana sales tax percentage, in decimals. (Note: Local tax is not considered)

The engineer will furnish the weights (mass) of asphaltic concrete placed during the monthly estimate period with the respective asphalt cement content, excluding the asphalt content in reclaimed asphaltic pavement (RAP) as per job mix formula. If the asphalt cement content changes during the estimate period, the respective weight (mass) of asphaltic concrete produced at each cement content will be reported.

Item 510-02, Pavement Widening, and all contract pay items under Sections 502 and 508, will be eligible for payment adjustments of asphalt materials. No payment adjustment will be made for other asphalt materials, including emulsions and cutbacks.

The base price indices for asphalt cements and fuels will be posted on the DOTD internet website before the 10th calendar day of each month at the following URL: www.dotd.louisiana.gov/lettings/lac_price_index/priceindices.asp.

(c) Fuels: The base price index for this project will be the monthly price index in effect when bids are opened for the project. The monthly price index will be the minimum price quotations for unleaded gasoline and No. 2 diesel fuel listed for the New Orleans area in *Platt's Oilgram and Price Report* effective on the first calendar day of each month.

Payment adjustment will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,
$P_a = (A - 1.05B) \times Q \times F$

If Base Price Index exceeds Monthly Price Index,
$P_a = (0.95B - A) \times Q \times F)$

Where:

P_a	=	Price adjustment.
A	=	Monthly Price Index in dollars per gallon/liter.
B	=	Base Price Index in dollars per gallon/liter.
Q	=	Pay Item Quantity (Pay Units).
F	=	Fuel Usage Factor Gal (L)/Pay Unit.

The following is a listing of contract pay items that are eligible for payment adjustment and the fuel usage factors that will be used in making such adjustment. Contract items that expand the items listed herein by use of letter designations are also eligible for fuel price adjustments; for example:

Item 601-01-G, Portland Cement Concrete Pavement 8 inches (200 mm) thick.

ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL PAYMENT ADJUSTMENT

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel[2]	Gasoline
203-01[1]	General Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-02	Drainage Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-03[1]	Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-04	Nonplastic Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-07	Borrow (Vehicular Measurement)	gal/cu yd	10,000 cu yd	0.29	0.15
301-01	Class I Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
301-02	Class I Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
302-01	Class II Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
302-02	Class II Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
303-01	In-Place Cement Stabilized Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
304-02	Lime Treatment (Type B)	gal/sq yd	50,000 sq yd	0.04	0.03
304-03	Lime Treatment (Type C)	gal/sq yd	50,000 sq yd	0.04	0.03
304-04	Lime Treatment (Type D)	gal/sq yd	50,000 sq yd	0.04	0.03
305-01	Subgrade Layer (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
308-01	In-Place Cement Treated Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
401-01	Aggregate Surface Course (Net Section)	gal/cu yd	3,000 cu yd	0.88	0.57
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	gal/cu yd	3,000 cu yd	0.88	0.57
502-01	Superpave Asphaltic Concrete	gal/ton	1000 ton	2.40[3]	0.2
502-02	Superpave Asphaltic Concrete	gal/cu yd	500 cu yd	4.80[4]	0.4
502-03	Superpave Asphaltic Concrete (" Thick)	gal/sq yd	10,000 sq yd	0.13[5,6]	0.01[6]
508-01	Asphaltic Concrete (SMA)	gal/ton	1000 ton	2.40[3]	0.2
510-02	Pavement Widening	gal/sq yd	3,000 sq yd	0.86	0.24
601-01	Portland Cement Concrete Pavement (" Thick)	gal/sq yd	15,000 sq yd	0.11	0.15

1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 1.67 gal/ton.
4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 13.34 gal/cu yd.
5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.09 gal/sq yd.
6 Per inch of thickness.

ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL PAYMENT ADJUSTMENT (METRIC)

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel[2]	Gasoline
203-01[1]	General Excavation	l/m^3	7,600 m^3	1.44	0.74
203-02	Drainage Excavation	l/m^3	7,600 m^3	1.44	0.74
203-03[1]	Embankment	l/m^3	7,600 m^3	1.44	0.74
203-04	Nonplastic Embankment	l/m^3	7,600 m^3	1.44	0.74
203-07	Borrow (Vehicular Measurement)	l/m^3	7,600 m^3	1.44	0.74
301-01	Class I Base Course	l/m^3	2,300 m^3	4.36	2.82
301-02	Class I Base Course (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
302-01	Class II Base Course	l/m^3	2,300 m^3	4.36	2.82
302-02	Class II Base Course (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
303-01	In-Place Cement Stabilized Base Course	l/m^2	41,800 m^2	0.18	0.14
304-02	Lime Treatment (Type B)	l/m^2	41,800 m^2	0.18	0.14
304-03	Lime Treatment (Type C)	l/m^2	41,800 m^2	0.18	0.14
304-04	Lime Treatment (Type D)	l/m^2	41,800 m^2	0.18	0.14
305-01	Subgrade Layer (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
308-01	In-Place Cement Stabilized Base Course	l/m^2	41,800 m^2	0.18	0.14
401-01	Aggregate Surface Course (Net Section)	l/m^3	2,300 m^3	4.36	2.82
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	l/m^3	2,300 m^3	4.36	2.82
502-01	Superpave Asphaltic Concrete	l/Mg	900 Mg	10.01[3]	0.83
502-02	Superpave Asphaltic Concrete	l/m^3	400 m^3	23.77[4]	1.98
502-03	Superpave Asphaltic Concrete (mm Thick)	l/m^2	8,400 m^2	0.59[5,6]	0.45[6]
508-01	Asphaltic Concrete (SMA)	l/Mg	900 Mg	10.01[3]	0.83
510-02	Pavement Widening	l/m^2	2,500 m^2	3.89	1.09
601-01	Portland Cement Concrete Pavement (mm Thick)	l/m^2	12,500 m^2	0.5	0.68

1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 6.97 l/mg.
4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 16.53 l/m^3.
5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.41 l/m^2.
6 Per mm of thickness.

SUPERPAVE ASPHALTIC CONCRETE MIXTURES (11/07): Section 502 of the 2006 Standard Specifications and the supplemental specifications thereto, is amended as follows.

Subsection 502.02, Materials.
Table 502-2, Superpave Asphalt Cement Usage, is deleted and the following substituted.

Table 502-2
Superpave Asphalt Cement Usage

Current Traffic Load Level	Mixture Type	Grade of Asphalt Cement
Level 1	Wearing Course	PG 70-22m
	Binder Course	PG 70-22m
	Base Course	PG 64-22
Level 2	Wearing Course	PG 76-22m
	Binder Course	PG 76-22m
Level A	Incidental Paving	PG 70-22m

Note: A PG 82-22 rm, Waste Tire Rubber Modified Asphalt, may be substituted for any other grade of asphalt cement.

Subsection 502.14, Lot Sizes.
The first sentence of the first paragraph is deleted and the following is substituted.
502.14 LOT SIZES. A lot is a segment of continuous production of asphaltic concrete mixture from the same job mix formula produced for the Department at a specific plant, delivered to a specific DOTD project.

ASPHALTIC TACK COAT (04/08): Section 504 of the Standard Specifications and the supplemental specifications thereto is amended as follows.

Subsection 504.02, Asphalt Materials is deleted and the following substituted.
Tack coat shall be an undiluted modified asphalt emulsion Grade CRS-2P, CSS-1, NTSS-1HM, SS-1, SS-1P, or SS-1L complying with Section 1002.

Subsection 504.04, Equipment is deleted and the following substituted.
The contractor shall provide equipment for applying asphalt material and preparation of the surface to be tacked. Equipment shall be thoroughly cleaned prior to applying asphalt material and shall conform to Subsections 503.14 and 503.18. A hand-held pressure nozzle may be used for tack coat application in lieu of the spray bar/tachometer combination for irregular sections or short sections of 1500 feet (450 m) or less.

Subsection 504.06, Application is amended as follows.
Add the following to the first paragraph.
Asphalt material shall be agitated and/or gently circulated prior to use.

The second paragraph is deleted and the following substituted.
The minimum application temperature of the modified asphalt emulsions and emulsified asphalt Grades CRS-2P and NTSS-1HM is 160°F (71°C) and Grades CSS-1, SS-1, SS-1L and SS-1P is 70°F (21°C).

HIGH EARLY STRENGTH CONCRETE PAVEMENT: Section 601 is amended to include the following requirements when high early strength concrete pavement is specified.

The concrete shall be capable of producing concrete with a minimum compressive strength of 3,000 psi in 5 hours. Compressive strength specimens shall be molded and cured in accordance with DOTD TR 226 and tested in accordance with DOTD TR 230. The high early strength concrete pavement shall conform to the following requirements.

(1) A minimum of 600 pounds of cement per cubic yard of concrete with a water cement ratio of not more than 0.40 shall be used. Aggregates shall conform to the requirements for Grade B or D coarse aggregate of Subsection 1003.02.

(2) A producer's technical representative shall be present at the job site to provide assistance for as long as required by the project engineer.

(3) Mixing time plus travel time from the plant to the job site shall not exceed 30 minutes. The concrete shall be unloaded and placed within 1 hour of adding the water and cement to the hauling equipment or per the manufacture's recommendation.

(4) The contractor shall finish the concrete as specified in the standard specifications. Curing compound shall be applied immediately after finishing (double quantities). Due to the rapid setting properties of the type of concrete, placing of the concrete shall be as continuous as possible to eliminate cold joints.

(5) No traffic shall be permitted on the high early strength concrete pavement until a minimum compressive strength of 3,000 psi is obtained.

(6) The surface shall meet the surface tolerance requirements of Subsection 601.11.

CULVERTS AND STORM DRAINS (08/07): Section 701 Culverts and Storm Drains of the 2006 Standard Specifications and the supplemental specifications, thereto is deleted and the following substituted.

SECTION 701
CULVERTS AND STORM DRAINS

701.01 DESCRIPTION. This work consists of furnishing, installing, and cleaning pipe, pipe arch, storm drains and sewers, also referred to as culverts or conduit, in accordance with these specifications and in conformity with lines and grades shown on the plans or established.

701.02 MATERIALS. Materials shall comply with the following sections and subsections:

Usable Soil	203.06(a)
Selected Soil	203.06(b)
Plastic Soil Blanket	203.10
Mortar	702.02
Flowable Fill	710
Portland Cement Concrete	901
Reclaimed Asphaltic Pavement (RAP)	1003.01 & 1003.04(d)
Stone	1003.03(b)
Recycled Portland Cement Concrete	1003.03(c)
Granular Material	1003.07
Bedding Material	1003.08
Concrete Sewer Pipe	1006.02
Reinforced Concrete Pipe	1006.03
Reinforced Concrete Pipe Arch	1006.04
Gasket Materials	1006.06

Plastic Pipe	1006.07
Split Plastic Coupling Bands	1006.07(d)(4)
Plastic Yard Drain Pipe	1006.09
Bituminous Coated Corrugated Steel Pipe and Pipe Arch	1007.02
Structural Plate for Pipe, Pipe Arch and Arch	1007.04
Corrugated Aluminum Pipe and Pipe Arch	1007.05
Coupling Bands	1007.09
Reinforcing Steel	1009
Geotextile Fabric	1019

(a) Side Drain Pipe or Side Drain Pipe Arch: When the item for Side Drain Pipe or Side Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(b) Cross Drain Pipe or Cross Drain Pipe Arch: When the item for Cross Drain Pipe or Cross Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, corrugated metal pipe or corrugated metal pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(c) Storm Drain Pipe or Storm Drain Pipe Arch: When the item for Storm Drain Pipe or Storm Drain Pipe Arch is included in the contract, the contractor has the option of furnishing reinforced concrete pipe or reinforced concrete pipe arch, or plastic pipe, as allowed by EDSM II.2.1.1 or unless otherwise specified.

(d) Yard Drain Pipe: When the item for Yard Drain Pipe is included in the contract, the contractor has the option of furnishing concrete sewer pipe, plastic yard drain pipe or plastic pipe in accordance with Section 1006 unless otherwise specified.

(e) Material Type Abbreviations:

(1) Reinforced Concrete Pipe:

RCP	Reinforced Concrete Pipe
RCPA	Reinforced Concrete Pipe Arch

(2) Corrugated Metal Pipe:

CAP	Corrugated Aluminum Pipe
CAPA	Corrugated Aluminum Pipe Arch
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
CSPA	Corrugated Steel Pipe Arch
BCCSP	Bituminous Coated Corrugated Steel Pipe
BCCSPA	Bituminous Coated Corrugated Steel Pipe Arch

(3) Plastic Pipe:

PP	Plastic Pipe
PVCP	Polyvinyl Chloride Pipe
RPVCP	Ribbed Polyvinyl Chloride Pipe
CPEPDW	Corrugated Polyethylene Pipe Double Wall

(f) Joint Type Abbreviations:

T1	Type 1 Joint
T2	Type 2 Joint
T3	Type 3 Joint

(g) Quality Assurance for Pipe: Manufacturing plants will be periodically inspected for compliance with specified manufacturing methods, and material samples will be randomly

obtained for laboratory testing for verification of manufacturing lots. Materials approved at the manufacturing plant will be subject to visual acceptance inspections at the jobsite or point of delivery.

701.03 EXCAVATION. For all pipe, when the sides of the trench are stable as evidenced by the sides of the trench being able to maintain a vertical cut face, the minimum trench width at the bottom of the excavation will be 18 inches (460mm) on either side of the outside diameter of the pipe. If the sides of the trench are unstable, the width of the trench at the bottom of the excavation, for plastic or metal pipe, shall be a minimum width of at least 18 inches (460mm) or one pipe diameter on each side of the outside diameter of the pipe, which ever is greater. Surplus material or excavated material that does not conform to the requirements of Subsection 203.06(a) shall be satisfactorily disposed of in accordance with Subsection 202.02. Moisture controls including backfill materials selection and dewatering using sumps, wells, well points or other approved processes may be necessary to control excess moisture during excavation, installation of bedding, over-excavated trench backfilling, pipe placement and pipe backfill.

(a) Over-excavation: When unsuitable soils as defined in Subsection 203.04 or a stable, non-yielding foundation cannot be obtained at the established pipe grade, or at the grade established for placement of the bedding, unstable or unsuitable soils below this grade shall be removed and replaced with granular material meeting the requirements of Subsection 1003.07, bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

When rock is encountered, it shall be removed below grade and replaced with material complying with Subsection 1003.07, bedding materials meeting the requirements of Subsection 1003.08 or Type A backfill. The compacted earth cushion shall have a thickness under the pipe of at least 1/2 inch per foot (40 mm/m) of fill height over the top of the pipe with a minimum thickness of 8 inches (200 mm). All granular, backfill materials placed below the established pipe or bedding grade shall be placed in lifts not exceeding 8 inches (200 mm) thick and sufficiently compacted by hand or a dynamic mechanical hand operated compaction device over the surface of each lift to form a stable, non-yielding foundation at the surface of the established bedding or pipe grade.

Materials used to backfill in an over-excavated portion of a trench do not require encasement in a Geotextile Fabric.

Density of approved materials placed in over-excavated trenches will not be measured or determined.

701.04 FORMING PIPE BED. Bedding material, when specified, shall be constructed in accordance with Section 726. Materials allowed for bedding shall be as specified in Subsection 1003.08 or may be Type A backfill materials. When bedding materials are specified, additional excavation shall be performed below established pipe grade and the bedding material placed in lifts not exceeding 8 inches (200 mm) thick and lightly compacted by hand or a dynamic hand compaction device over the surface of each lift.

When the bottom of the pipe is not laid in a trench but is constructed above natural soils, a uniform bed shall be constructed as specified for the bottom of a trench.

Density of approved bedding materials will not be measured or determined.

701.05 LAYING PIPE. Pipe laying shall begin at the downstream end of the line. The pipe shall be in contact with the foundation throughout its length. Bells shall be placed at the upstream ends of pipe and outside circumferential laps of riveted metal pipe shall be placed facing upstream. Riveted seam

metal pipe shall be placed with longitudinal laps at sides. Pipes in each continuous line shall have the same wall thickness. Metal pipes provided with lifting lugs shall be handled only by these lugs.

After pipe has been laid and before backfill is placed, the engineer will inspect the pipe for alignment, grade, integrity of joints, and coating damage.

701.06 JOINING PIPE.

(a) Joint Usage:

(1) Type 1 (T1) joints shall be used for side drains under drives and similar installations.

(2) Type 2 (T2) joints shall be used for cross drains under roadways, including turnouts.

(3) Type 3 (T3) joints shall be used for closed storm drain systems, flumes and siphons.

(b) Concrete Pipe: Concrete pipe may be either bell and spigot, or tongue and groove. The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

An approved mechanical pipe puller shall be used for joining pipes over 36 inches (900 mm) in diameter. For pipe 36 inches (900 mm) or less in diameter, any approved method for joining pipe may be used which does not damage the pipe.

Joints shall comply with Subsection 1006.05, and shall be sealed with gasket material installed in accordance with the manufacturer's recommendations.

(c) Metal Pipe: Metal pipe shall be firmly joined by coupling bands. Bands shall be centered over the joint.

For Type 1 joints, approved gasket material shall be placed in one corrugation recess on each side of the joint at the coupling band and on each band connection in such manner to prevent leakage.

When Type 2 or 3 joints are specified, joining of metal pipe sections shall conform to the following provisions:

(1) General: Band joints shall be sealed with gasket material. Gasket material shall be placed in accordance with the plan details.

(2) Circular Section: Connecting bands shall be of an approved design and shall be installed in accordance with plan details.

(3) Arch Section: Connecting bands shall be a minimum of 12 inches (300 mm) wide for pipe arch less than 36 inches (900 mm) round equivalent diameter, and a minimum of 21 inches (525 mm) wide for 36 inches (900 mm) round equivalent diameter pipe arch and greater. Bands shall be connected at the ends by approved angle or strap connections. Connecting bands used for 36 inches (900 mm) round equivalent diameter pipe arch and above shall be 2-piece bands.

(d) Plastic Pipe: Joints for plastic pipe shall be either bell and spigot or split coupling bands.

(1) Bell and Spigot Type Joint System: The method of joining pipe sections shall be such that ends are fully entered and inner surfaces are flush and even.

Any approved method for joining pipe may be used which does not damage the pipe.

Joints shall be approved and shall be sealed with a gasket system utilizing gasket material complying with Subsection 1006.06(a).

(2) Split Coupling Type Joint System: Split coupling bands shall comply with all dimensional and material requirements of Subsection 1006.07. The bands shall be centered over the joint. The split coupling band shall be secured to the pipe with a minimum of five stainless steel or other approved corrosion resistant bands.

Joints shall be approved and shall be sealed with gasket material. Gasket material shall be placed in the first two corrugation recesses on each side of the pipe connections. Gasket material shall also be placed on each band connection to prevent leakage. When flexible plastic gasket material is used it shall be a minimum of 1/2 inch (13 mm) in size. The bands shall be tightened to create overlap of the band and shall adequately compress the gasket material.

(e) Connections: Approved connections shall be used when joining new pipes to existing pipes. When concrete collars are required in order to extend the ends of existing pipes that have been damaged or to join different types or sizes of pipes, the concrete collars shall be constructed in accordance with plan details, the applicable requirements of Section 901, and as directed.

(f) Geotextile Fabric, Pipe Joints: For concrete, metal and plastic pipes, Types 2 and 3 joints shall be wrapped with geotextile fabric for a minimum of 12 inches (300 mm) on each side of joint for pipe 36 inches (900 mm) or less in diameter and a minimum of 18 inches (450 mm) on each side of the joint for pipe greater than 36 inches (900 mm) in diameter. Ends of the fabric shall be lapped at least 10 inches (250 mm). The edges and ends of fabric shall be suitably secured for the entire circumference of the pipe.

701.07 RELAYING PIPE. If specified or directed, existing pipes shall be removed and suitable sections relaid as specified for new pipes.

701.08 BACKFILLING.

(a) General: Prior to backfilling, pipes found to be damaged or out of alignment or grade shall be removed and reinstalled, or replaced.

Type A backfill material shall be stone, recycled portland cement concrete, flowable fill, or RAP.

Type B backfill materials are selected soils. Where Type B backfill materials are called for, Type A backfill materials may be substituted.

When corrugated metal pipe is used, the backfill material shall be tested and shall have a resistivity greater than 1500 ohm-cm and a pH greater than 5 when tested in accordance with DOTD TR 429 and DOTD TR 430 respectively.

When Type A backfill material is used, geotextile fabric surrounding this backfill shall be placed in accordance with Subsection 726.03 between the aggregate backfill material and all other natural or placed soils in the trench or embankment. Care shall be taken to prevent damage to geotextile fabric during placement of backfill material. For concrete pipe, the fabric shall enclose not only the initial backfill but shall be wrapped over the top of the pipe with at least 12 inches (300 mm) of overlap.

When a trench box or trench sheeting is used in unstable soils and/or for worker safety, and when moved during backfilling operations, filling and additional compaction of the disturbed zone of backfill must take place immediately and in a manner acceptable to the engineer.

Initial backfill is a structural backfill encasing the pipe from the bottom of the pipe to the springline for concrete pipe and to a point one foot (0.3 m) above the top of the pipe for both metal and plastic pipe. Final backfill is not a structural backfill and shall extend from the top of the initial backfill to the top of the natural ground or subgrade in cut areas or to the top of existing ground in fill areas. Any fill required above the final backfill is considered and treated as embankment.

(b) Backfill Applications: For projects using A+B+C bidding method where rigid and flexible pavement alternates are considered, backfill application (2) below, "Cross Drains Under Flexible Pavements", shall apply for either rigid or flexible pavements.

(1) Under Concrete Pavements: Type B backfill may be used as initial and final backfill for all pipes, culverts or drains under concrete pavements. Placement and compaction shall be as specified in Heading (d) below.

(2) Cross Drains Under Flexible Pavements: All reaches, exclusive of those portions of the pipe which are under shoulders, of cross drains and all other culverts, pipes or drains that cross the centerlines of the new roadway or centerlines of existing roadways, such as intersections and are under flexible pavements shall receive an initial backfill of Type A material. Type B backfill materials may be used as final backfill for all pipes. Placement and compaction shall be as specified in Heading (c) and (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(3) Other Drains Under Flexible Pavements: All reaches of all culverts, pipes or drains under flexible pavements that do not cross the centerlines of new roadway or centerlines of existing roadways, and exclusive of those portions of the pipe which are totally under shoulders, shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below. Where the subgrade is above existing ground, embankment material as specified for the remainder of the project shall be used from the top of the final backfill to the top of the established embankment grade.

(4) Other Areas: All culverts, pipes or drains in nonpaved areas or paved areas that serve as driveways or shoulders shall receive an initial and final backfill of Type B material. Placement and compaction shall be as specified in Heading (d) below.

(5) Pipes Subject to Construction Traffic; The embankment or pipe backfill shall be constructed to a minimum of 24 inches (600 mm) over the pipe before heavy construction equipment is allowed to cross the installation. Where practical, installations with less than 24 inches (600 mm) of cover over the top of the pipe shall be constructed after heavy hauling is completed over the pipe location. After completion of hauling operations, the contractor shall remove excess cover material. Pipe damaged by hauling and backfilling operations shall be removed and reinstalled, or replaced, at no direct pay.

(c) Placement and Compaction; Type A Backfill: For all pipes, culverts and conduits under paved and nonpaved areas, where Type A backfill material is used, the Type A backfill shall be thoroughly hand compacted under the pipe haunches and then dynamically compacted in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction under the haunches of the pipe shall initially be by hand tamping or other acceptable means, until a level is reached that the dynamic tamping can commence. Each lift shall be compacted by applying at least eight passes of a hand operated, dynamic mechanical compaction device over the surface of each lift. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance. If flowable fill is used it shall be furnished, placed and consolidated in accordance with Section 710. The contractor shall control placement operations during initial backfill operations so as not to damage protective coatings on metal pipes. The contractor shall repair damaged coatings at no additional pay.

(d) Placement and Compaction; Type B Backfill: For all pipes, culverts and conduits, where Type B backfill is allowed, the Type B material shall be placed in layers not exceeding 8 inches (200 mm) compacted thickness. Compaction shall be with suitable mechanical equipment. With approval of the engineer, layer thickness may be increased to 12 inches (300 mm) with verification of satisfactory installation and performance.

(e) Placement and Compaction; Trenchless or Partial Trench Condition: All pipes, culverts, drains and conduits placed with any portion of the pipe above existing ground must also comply with Subsections (a),(b) (c) and (d) above for the portion of the pipe within a trench and that portion of the pipe not constructed in a trench. The width of initial and final backfill of that

portion above existing ground and not within a trench will be constructed to such a width that the requirements for placement, compaction and density are met.

(f) Density Requirements: The in place density of Type A backfill materials and bedding materials, will not be measured or determined. Type A backfill, exclusive of RAP and flowable fill, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or 418. RAP materials shall be placed and compacted in a slightly moist condition.

The maximum dry density of initial or final Type B backfill under all paved areas which are to be under traffic will be determined in accordance with DOTD TR 415 or TR 418 and in-place density determined in accordance with DOTD TR 401. Initial and final Type B backfill under all paved areas, under traffic, shall be placed at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418. Each layer shall be compacted by approved methods prior to the placement of a subsequent layer. The engineer will approve the compaction method based upon validation that such method, including moisture control, will achieve at least 95 percent of maximum dry density as determined in accordance with DOTD TR 401. With approval of the engineer, density testing may be waived on subsequent layers with backfill installation in accordance with approved compaction methods and continued satisfactory performance.

Initial and final backfill in unpaved areas or paved areas such as shoulders or driveways, shall be placed evenly and compacted along the length of the culvert, pipe or drain from the top of the initial backfill to the top of the subgrade. Layered backfill shall be compacted at least to the density of the adjoining existing soils or the compaction required of the laterally adjoining layers of soil immediately outside the trench for embankment elevations. Initial and final backfill shall be placed and compacted at or near optimum moisture content determined in accordance with DOTD TR 415 or TR 418.

701.09 INSPECTION OF PIPES. After completion of embankment and prior to roadway surfacing, the engineer shall inspect pipes for proper alignment and integrity of joints. Any misaligned pipe or defective joints shall be corrected by the contractor at no direct pay.

(a) Plastic Pipe: Installed plastic pipe shall be tested to ensure that vertical deflections do not exceed 5.0 percent. Maximum allowable deflections shall be governed by the mandrel requirements stated herein.

Deflection tests shall be performed no sooner than 30 calendar days after installation and compaction of backfill. The pipe shall be cleaned and inspected for offsets and obstructions prior to testing.

For pipe 36 inches (900 mm) and less in diameter, a mandrel shall be pulled through the pipe by hand to ensure that maximum allowable deflections have not been exceeded. The mandrel shall be approved by the engineer prior to use. Use of an unapproved mandrel or a mandrel altered or modified after approval will invalidate the test. If the mandrel fails to pass, the pipe is overdeflected.

Unless otherwise permitted, overdeflected pipe shall be uncovered and, if not damaged, reinstalled. Damaged pipe shall not be reinstalled, but shall be removed and replaced with new pipe. Any pipe subjected to any method or process other than removal, which attempts, even successfully, to reduce or cure any overdeflection, shall be removed and replaced with new pipe.

The mandrel shall be a rigid, nonadjustable, odd-numbered legged (minimum 9 legs) mandrel having a length not less than its nominal diameter or 24 inches (600 mm), whichever is less. The minimum diameter at any point shall be 5.0 percent less than the base inside diameter of the pipe being tested. The mandrel shall be fabricated of steel, aluminum or other approved material fitted with pulling rings at each end. The nominal pipe size and outside diameter of the mandrel shall be stamped or engraved on it. A suitable carrying case shall be furnished.

For pipe larger than 36 inches (900 mm) in diameter, deflection shall be determined by a method approved by the engineer. If a mandrel is selected, the minimum diameter, length, and other requirements shall conform to the above requirements.

Mandrel testing shall be conducted by the contractor in the presence of the engineer. Mandrel testing shall be at no direct pay.

(b) Metal Pipe: If the inside diameter of metal pipe or rise dimension of metal pipe arch deflects more than 5.0 percent from original dimensions, they shall be removed and reinstalled, unless they do not rebound or are damaged. Pipe or pipe arch which are damaged or do not rebound shall be removed and replaced at no direct pay. Measurement of deflection will be made by the engineer away from rerolled ends.

701.10 CLEANING PIPES.

(a) Existing Pipes: Pipes designated to be cleaned shall be cleaned of soil, debris and other materials to the invert of the pipe. Designated pipes shall be cleaned by approved methods that will not damage the pipes. Any damage caused by the contractor's operations shall be satisfactorily repaired at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

(b) Contractor Installed Pipes: Prior to final acceptance, pipes shall be cleaned of all debris and soil to the invert of the pipe at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

701.11 STUBBING AND PLUGGING PIPES. When it is required that pipes be plugged, such plugs shall be constructed of Class R concrete complying with Section 901. Thickness of plug and method of construction shall be as directed.

When new pipes are to be stubbed into new or existing pipes or other structures, the connection shall be made with approved mortar complying with Subsection 702.02.

701.12 MEASUREMENT. Pipe, both new and relaid, will be measured in linear feet (lin m) as follows unless stated otherwise.

(a) Pipe not confined by fixed structures will be measured by the number of joints at the nominal length of each joint.

(b) Pipe confined by fixed structures will be measured along the pipe between the termini of pipe in structure walls.

(c) Pipe confined by a fixed structure on one end and unconfined at the other end will be measured along the pipe from the terminus of pipe in the structure wall to the unconfined end of pipe.

(d) Fabricating of pipe tees, elbows and other fittings will be measured per each fitting. The length of pipe in such fittings will be included in the pay length measurement of pipes of which they form a part.

(e) Excavation required for installation of pipes will not be measured for payment, except as otherwise specified in Subsection 203.14.

(f) Furnishing and placing backfill material below existing ground level for pipes will not be measured for payment. Backfill material needed to complete backfill above natural ground and around pipes that extend above natural ground will be measured and payment will be made under applicable earthwork items. When specified, flowable fill will be measured and paid for in accordance with Section 710.

(g) Plugging and stubbing of pipes will not be measured for payment.

(h) Cleaning existing pipes will be measured by the length of pipe cleaned and accepted.

(i) Concrete collars will be measured per each.

701.13 PAYMENT.

(a) Payment for pipe will be made at the contract unit price per linear foot (lin m) of the types and sizes specified.

When plastic pipe is specified on the plans or elected to be used by the contractor, payment will be made at the contract unit price per linear foot (lin m) of the types and sizes specified in accordance with the payment schedule of Table 701-1.

Table 701-1
Payment Schedule for Plastic Pipe

Percent Payment	Stage of Completeness
75	After placement and backfill has been completed
25	After the pipe has met vertical deflection requirements in accordance with Subsection 701.09(a)

(b) Payment for fabricating pipe tees, elbows and other fittings will be made at the contract unit price per each fitting.

(c) When unstable conditions are encountered, the additional excavation will not be measured for payment; however, the additional materials furnished and placed for the pipe foundation will be measured and paid for as follows:

(1) Granular Materials: Payment will be made under the embankment item. The net section volume of the materials will be multiplied by 3 to determine the pay volume. When the contract does not include a pay item for embankment, payment will be made in accordance with Subsection 104.02.

(2) Bedding Material: Measurement and payment will be made in accordance with Section 726. When the contract does not include a pay item for bedding material, payment will be made in accordance with Subsection 104.02.

(d) Payment for cleaning existing pipes will be made at the contract unit price per linear foot (lin m).

(e) Payment for concrete collars will be made at the contract unit price per each.

Payment will be made under:

Item No.	Pay Item	Pay Unit
701-01	Cross Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-02	Cross Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-03	Storm Drain Pipe (Size & Type)	Linear Foot (Lin m)
701-04	Storm Drain Pipe Arch (Size & Type)	Linear Foot (Lin m)
701-05	Side Drain Pipe (Size)	Linear Foot (Lin m)
701-06	Side Drain Pipe Arch (Size)	Linear Foot (Lin m)
701-07	Yard Drain Pipe (Size)	Linear Foot (Lin m)
701-08	Relaying Pipe	Linear Foot (Lin m)
701-09	Fabricating Pipe Fittings	Each
701-10	Reinforced Concrete Pipe (Extension)	Linear Foot (Lin m)

701-11	Reinforced Concrete Pipe Arch (Extension)	Linear Foot (Lin m)
701-12	Corrugated Metal Pipe (Extension)	Linear Foot (Lin m)
701-13	Corrugated Metal Pipe Arch (Extension)	Linear Foot (Lin m)
701-14	Cleaning Existing Pipes	Linear Foot (Lin m)
701-15	Concrete Collar	Each
701-16	Plastic Pipe (Extension)	Linear Foot (Lin m)

CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING (04/08): Section 706 of the 2006 Standard Specifications and the Supplemental Specifications is deleted and the following substituted.

SECTION 706
CONCRETE WALKS, DRIVES AND INCIDENTAL PAVING

706.01 DESCRIPTION. This work consists of furnishing and constructing portland cement concrete walks, handicapped curb ramps, drives and incidental paving slabs in accordance with these specifications and in conformity with lines, grades and dimensions shown on the plans or established.

706.02 MATERIALS. Materials shall comply with the following Section or Subsections.

Portland Cement Concrete (Class M)	901
Joint Filler	1005.01(c)
Reinforcing Steel	1009.01
Curing Materials	1011.01

706.03 CONSTRUCTION REQUIREMENTS.

(a) Excavation: Excavation shall be made to required depth and width. The top of the subgrade shall be shaped and compacted to a firm, even surface conforming to the section shown on the plans. Unsuitable material shall be removed and disposed of in accordance with Subsection 202.02 and replaced with approved material at no direct pay.

(b) Forms: Forms shall be of wood or metal and shall extend the full depth of concrete. Forms shall be straight, clean and of sufficient strength to resist the pressure of concrete. Bracing of forms shall be such that forms remain in horizontal and vertical alignment until their removal.

Concrete may be placed by slip-form methods. Slip-formed concrete shall be placed with an approved machine designed to spread, vibrate, consolidate and finish concrete in one pass of the machine in such manner that minimum hand finishing is necessary. Sliding forms shall be rigidly held together to prevent spreading of forms. After the passing of the side forms there shall be no noticeable slumping of concrete.

(c) Subgrade: The subgrade shall be thoroughly moistened immediately prior to placing concrete.

(d) Placing and Finishing: Concrete shall be placed on the subgrade, struck off to required thickness and tamped sufficiently to bring the mortar to the surface. The surface shall be finished with a wood float or steel trowel followed by brushing to a slightly rough finish. Joints and edges shall be rounded with an edging tool having a 1/4-inch (6 mm) radius.

(e) Joints:

(1) Expansion Joints: Expansion joints shall be filled with 1/2 inch (13 mm) thick preformed expansion joint filler. Expansion joints shall be installed at maximum 100-foot (30 m) intervals, and between intersecting paving and any fixed structure such as a building,

bridge or curbing, and between intersecting paving and the handicapped curb ramps. Expansion joint material shall extend for the full width and depth of paving.

(2) Weakened Plane: Weakened planes shall be formed by a jointing tool or other acceptable means. Weakened planes shall extend into concrete for at least 1/4 of the depth and shall be approximately 1/8 inch (3 mm) wide.

a. Walks: Spacing of weakened planes for walks shall be equal to the width of walk.

b. Drives: A longitudinal weakened plane shall be formed along the centerline of drives more than 16 feet (5 m) wide, and transverse weakened planes shall be formed at not more than 16-foot (5 m) intervals.

c. Incidental Paving: Weakened planes for incidental paving shall be formed at intervals not exceeding 30 times the thickness of the concrete in length or width. Incidental paving poured adjacent to jointed concrete shall be jointed to match existing joints, with intermediate joints formed as necessary not to exceed the maximum joint spacing.

(3) Construction Joints: Construction joints shall be formed around manholes, utility poles, etc., extending into paving and 1/4 inch (6 mm) thick preformed expansion joint filler shall be installed in these joints.

(4) Tie-ins: Tie-ins of existing concrete shall be made by full depth sawing at no direct pay.

(f) Curing: Concrete shall be cured in accordance with Subsection 601.10.

(g) Detectable Warning Surface for Handicap Ramps and At-Grade Sidewalk Intersections: Sidewalks, when intersecting with roadways, shall be equipped with a detectable warning surface system consisting of raised truncated domes as a transition between the sidewalk and the street as required by the Americans with Disabilities Act, 28 CFR Part 36, ADA Standards for Accessible Design.

Detectable warnings (truncated domes) shall be installed on the ramp surface over the full width of the ramp throat for a distance of 24 inches (600 mm) in the direction of travel from the back of the curb. Detectable warnings (truncated domes) shall also be installed on at-grade sidewalks intersecting with roadways for a distance of 36 inches (900 mm) in the direction of travel from the end of the sidewalk. Truncated domes shall be laid out on a square grid in order to allow enough space for wheelchairs to roll between the domes.

Light reflectance of the truncated domes and the underlying surface must meet the 70 percent contrast requirement of ADAAG.

706.04 MEASUREMENT. Quantities of concrete walks, drives and incidental paving slabs for payment will be the design quantities as specified on the plans and adjustments thereto. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if design errors are proven or if design changes are made. Design areas are based on the horizontal dimensions shown on the plans. Excavation, backfill, reinforcing steel and joint materials will not be measured for payment.

Handicapped curb ramps, including the detectable surface warning system, will be measured per each.

Detectable surface warning systems for at-grade sidewalk intersection will not be measured for payment.

706.05 PAYMENT. Payment for concrete walks, drives and incidental paving will be made on a lot basis at the contract unit price per square yard (sq m), adjusted in accordance with the following provisions. Payment for each lot will be made in accordance with Table 901-6. Size, sampling, and testing of each concrete lot shall be in accordance with the Materials Sampling Manual.

Payment for handicapped curb ramps, including the detectable surface warning system, will be made by each and shall include, but not limited to, curb transitions, detectable warning system, gutter, landing and base.

Payment will be made under:

Item No.	Pay Item	Pay Unit
706-01	Concrete Walk (inch (mm) Thick)	Square Yard (Sq m)
706-02	Concrete Drive (inch (mm) Thick)	Square Yard (Sq m)
706-03	Incidental Concrete Paving (inch (mm) Thick	Square Yard (Sq m)
706-04	Handicapped Curb Ramps	Each

TEMPORARY TRAFFIC CONTROL (08/06): Section 713 of the 2006 Standard Specifications and the Supplemental Specifications is amended as follows:

Subsection 713.04, Temporary Signs and Barricades, is amended to include the following:

(d) Project Signs: The contractor shall furnish, install, maintain, and upon completion of the project remove "project signs" in accordance with the following requirements.

Project signs shall conform to the requirements of Section 713 and the project sign detail contained elsewhere herein. Shop drawings will be furnished to the successful bidder by contacting the Department's Traffic Services Sign Shop at (225) 935-0121 or (225) 935-0142.

Project signs shall be required at the beginning and end of the project and shall follow sign G-20-1, "Road Work Next 'X' Miles", or as directed by the engineer.

Payment for project signs shall be included in the contract unit price for Item 713-01 Temporary Signs and Barricades.

TEMPORARY PRECAST CONCRETE BARRIERS (08/06): Subsection 713.05 of the standard specifications is amended to include the following.

Temporary precast concrete barriers to be furnished by the Department are stored at District 02 Headquarters maintenance yard in Bridge City. The contractor shall load and transport the barrier units to the work site as directed. After completion of the work the barrier units shall be returned to the storage site by the contractor.

TRAFFIC SIGNS AND DEVICES (04/08): Section 729 of the Standard Specifications and the supplemental specifications thereto is amended as follows.

Subsection 729.02, Materials is amended as follows.

The contents under Heading (a), Sign and Marker Sheeting is deleted and the following substituted.

(a) Sign and Marker Sheeting: Sheeting material for sign panels, delineators, barricades and other markers shall comply with Section 1015. All permanent signs shall meet the requirements of ASTM D 4956, Type X.

Subsection 729.04, Fabrication of Sign Panels and Markers is amended as follows.

The third paragraph of Heading (c), Sheeting Application is deleted and the following substituted.

ASTM D 4956 Type X reflective sheeting shall be applied with an orientation determined by the engineer to obtain the optimum entrance angle performance. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will be allowed only when the horizontal dimension of the sign face or attached shield is in excess of the maximum manufactured width of the

sheeting. Fabricated vertical splices in ASTM D 4956 Type X reflective sheeting will also be allowed when the specified orientation will create excessive sheeting waste.

PLASTIC PAVEMENT MARKINGS (09/07): Section 732 of the 2006 Standard Specifications and the supplemental specifications thereto, is amended as follows.

Subsection 732.03, Construction Requirements for Plastic Pavement Marking Material.

Heading (a) is amended as follows.

The first paragraph is deleted and the following substituted.

(a) Equipment for Standard (Flat) Thermoplastic Marking Material: The application equipment shall consist of an extrusion die or a ribbon gun that simultaneously deposits and shapes lines at a thickness of 90 mils (2.3 mm) or greater on the pavement surface. When restriping onto existing thermoplastic markings, only a ribbon gun shall be used. Finished markings shall be continuous and uniform in shape, and have clear and sharp dimensions. Applicators shall be capable of producing various widths of traffic markings. Applicators shall produce sharply defined lines and provide means for cleanly cutting off stripe ends and applying broken lines. The ribbon extrusion die or shaping die shall not be more than 2 inches (50 mm) above the roadway surface during application. A spray application will only be allowed when applying 40 mil (1.0 mm) thermoplastic.

Heading (e) is deleted and the following substituted.

(e) Application of Surface Primer: A single component surface primer will be required prior to placement of preformed plastic markings over an existing painted stripe, over oxidized asphalt, or when striping over existing thermoplastic on portland cement concrete surfaces unless otherwise directed by the engineer. A two component epoxy primer sealer will be required prior to placement of thermoplastic materials on portland cement concrete surfaces unless otherwise directed by the engineer.

CONCRETE APPROACH SLABS (06/08): Section 813 of the 2006 Standard Specifications and the supplemental specifications is amended as follows.

The third paragraph under Subsection 813.03, Embankment is deleted and the following is substituted.

When specified, the approach slab shall be placed on a layer of bedding material in accordance with plan details. Bedding material shall be placed and compacted as directed and covered with approved polyethylene film of at least 6-mil (150 μm) nominal thickness.

HYDRAULIC CEMENT (09/07): Section 1001 of the 2006 Standard Specifications and the supplemental specifications thereto, is amended as follows.

Subsection 1001.01, Portland Cement is deleted and the following substituted.

PORTLAND CEMENT. Portland cement shall be from an approved source listed in QPL 7 and shall comply with AASHTO M 85.

Alkali content calculated as sodium oxide equivalent shall not exceed 0.60 percent by weight for all types of cement.

ASPHALT MATERIALS AND ADDITIVES (04/08): Section 1002 of the 2006 Standard Specifications and the supplemental specifications thereto is amended as follows.

Subsection 1002.02, Asphalt Material Additives is amended as follows.

Table 1002-1, Performance Graded Asphalt Cements is deleted and the following substituted.

Table 1002-1
Performance Graded Asphalt Cements

Property	AASHTO Test Method	PG82-22rm[6]	PG76-22m	PG70-22m	PG64-22	PG58-28
		Spec.	Spec.	Spec.	Spec.	Spec.
Tests on Original Binder:						
Rotational Viscosity @ 135°C, Pa·s [1]	T 316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	1.00+ @ 82°C	1.00+ @ 76°C	1.00+ @ 70°C	1.30+ @ 64°C	1.00+ @ 58°C
Flash Point, °C	T 48	232+	232+	232+	232+	232+
Solubility, % [2]	T 44	N/A	99.0+	99.0+	99.0+	99.0+
Separation of Polymer, 163°C, 48 hours, degree C difference in R & B from top to bottom [5]	ASTM D 7173 AASHTO T 53	---	2-	2-	---	---
Force Ductility Ratio (f_2/f_1, 4°C, 5 cm/min., f_2 @ 30 cm elongation)[3]	T 300	---	0.30+	---	---	---
Force Ductility, (4°C, 5 cm/min, 30 cm elongation, kg)[3]	T 300	---	---	0.23+	---	---
Tests on Rolling Thin Film Oven Residue:	T 240					
Mass loss, %	T 240	1.00-	1.00-	1.00-	1.00-	1.00-
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	2.20+ @ 82°C	2.20+ @76°C	2.20+ @ 70°C	2.20+ @ 64°C	2.20+ @ 58°C
Elastic Recovery, 25°C, 10 cm elongation, % [4]	T 301	60+	60+	40+	---	---
Ductility, 25°C, 5 cm/min, cm	T 51	---	---	---	100+	---
Tests on Pressure Aging Vessel Residue:	R 28					
Dynamic Shear, @ 25°C, 10 rad/s, G* Sin Delta, kPa	T 315	5000-	5000-	5000-	5000-	5000- @ 19°C
Bending Beam Creep Stiffness, S, MPa @ -12°C.	T 313	300-	300-	300-	300-	300- @ -18°C
Bending Beam Creep Slope, m value,@ -12°C	T 313	0.300+	0.300+	0.300+	0.300+	0.300+ @ -18°C

[1]The rotational viscosity will be measured to determine product uniformity. The rotational viscosity measured by the supplier shall be noted on the Certificate of Delivery. A binder having a rotational viscosity of 3.0 Pa·s or less will typically have adequate mixing and pumping capabilities. Binders with rotational viscosity values higher than 3.0 Pa·s should be used with caution and only after consulting with the supplier as to any special handling procedures and guarantees of mixing and pumping capabilities.

[2]Not all polymers are soluble in the specified solvents. If the polymer modified asphalt digested in the solvent will not pass the filter media, a sample of the base asphalt used in making the

polymer modified asphalt should be tested for solubility. If the solubility of the base asphalt is at least 99.0%, the material will be considered as passing.
[3]AASHTO T 300 except the second peak (f2) is defined as the stress at 30 cm elongation.
[4]AASHTO T 301 except elongation shall be 10 cm.
[5]Prepare samples per ASTM D 7173. Determine softening point of top and bottom per AASHTO T 53.
[6]The quality assurance plan for this product will require the contractors who use this material to submit written documentation of tank cleaning annually. Contractors must have tank mixers. Written certificates of analysis from the asphalt binder supplier confirming rubber source and size distribution of rubber used shall be furnished to the Materials Laboratory.

Add the following Table 1002-12, Anionic Trackless Tack Coat Grade NTSS-1HM.

Table 1002-12
Anionic Trackless Tack Coat Grade NTSS-1HM

Property	AASHTO Test Method	Specification Deviation	
		100% Pay	50% Pay or Remove[1]
Viscosity, Saybolt Furol @ 25°C, s	T 59	15 - 100	---
Storage Stability, 24 Hour, %	T 59	1.0-	---
Settlement, 5 Days, %	T 59	5.0-	---
Residue by Distillation, %	T 59	50+	49-
Oil Distillate, %	T 59	1.0-	---
Sieve Test[2], (Retained on the 850 µm), %	T 59	0.3-	---
Tests on Residue			
Penetration @ 25°C, 100g, 5s, dmm	T 49	20-	---
Softening Point, Ring and Ball, °C	T 53	65+	64-
Solubility, %	T 44	97.5+	---
DSR @ 25°C; G*Sin δ, 10 rad / s, kPa	T 315	1.0+	---

[1] At the option of Engineer.
[2] Sieve tests may be waived if no application problems are present in the field.

REFLECTIVE SHEETING (04/08): Section 1015 Signs and Pavement Markings of the Standard Specifications and the supplemental specifications thereto is amended as follows.

Subsection 1015.05, Reflective Sheeting is deleted and the following substituted.

1015.05 REFLECTIVE SHEETING.

(a) Permanent and Temporary Standard Sheeting: Reflective sheeting shall be one of the following standard types as specified on the plans and complying with ASTM D 4956 except as modified herein. Permanent warning, regulatory, guide and supplemental guide sign sheeting shall meet the requirements of ASTM D 4956 Type X. Reflective sheeting for temporary signs and devices shall meet the requirements of ASTM D 4956 Type III except as noted in Subsection 1015.05(f). Reflective sheeting shall be an approved product listed in QPL 13.

Type III - A high-intensity retroreflective sheeting that is typically encapsulated glass-bead retroreflective material.

Type VI - An elastomeric high-intensity retroreflective sheeting without adhesive. This sheeting is typically a vinyl microprismatic retroreflective material.

Type X - A super high-intensity retroreflective sheeting having highest retroreflectivity characteristics at medium distances. This sheeting is typically an unmetalized microprismatic retroreflective element material.

(b) Fluorescent Pink Retroreflective Sheeting: Signs for temporary control of traffic through incident management areas shall be Type VI fluorescent pink retroreflective sheeting and shall comply with the MUTCD. Temporary traffic control signs for incident management shall be placed to notify motorists of upcoming incidents on the roadway, and shall be removed from public view once the incident has been managed. Physical properties shall comply with ASTM D 4956. Photometric properties shall be as follows.

(1) Retroreflectivity: Minimum Coefficients of Retroreflection shall be as specified in Table 1015-1.

Table 1015-1
Coefficients of Retroreflection for Fluorescent Pink Sheeting[1]

Observation Angle, degrees	Entrance Angle, degrees	Fluorescent Pink
0.2	-4	100
0.2	+30	40
0.5	-4	40
0.5	+30	15

[1]Minimum Coefficient of Retroreflection (R_A) (cd $lx^{-1}m^{-2}$)

(2) Color and Daytime Luminance: Color Chromaticity Coordinates and Daytime Luminance Factors shall be as specified in Table 1015-2.

Table 1015-2
Fluorescent Pink Color Specifications Limits (Daytime)

Chromaticity Coordinates (corner points) [1]								Luminance Factor, min.
1		2		3		4		Y%
x	y	x	y	x	y	x	y	25
0.450	0.270	0.590	0.350	0.644	0.290	0.536	0.230	

[1]The four pairs of chromaticity coordinates measured with CIE 2° Standard Observer and 45/0 (0/45) geometry and CIE D65 Standard Illuminant.

(c) Adhesive Classes: The adhesive required for retroreflective sheeting shall be Class 1 (pressure sensitive) as specified in ASTM D 4956.

(d) Accelerated Weathering: Reflective sheeting, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform in accordance with the accelerated weathering standards in Table 1015-3.

Table 1015-3
Accelerated Weathering Standards[1]

Type	Retroreflectivity[2]				Colorfastness[3]	
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		Orange/ Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	1 year	80[4]	3 years	80[4]	1 year	3 years
III (for drums)	1 year	80[4]	1 year	80[4]	1 year	1 year
VI	1/2 year	50[5]	1/2 year	50[5]	1/2 year	1/2 year
X	1 year	80[6]	3 years	80[6]	1 year	3 years

[1]At an angle of 45° from the horizontal and facing south in accordance with ASTM G 7 at an approved test facility in Louisiana or South Florida.
[2]Percent retained retroreflectivity of referenced table after the outdoor test exposure time specified.
[3]Colors shall conform to the color specification limits of ASTM D 4956 after the outdoor test exposure time specified.
[4]ASTM D 4956, Table 8.
[5]ASTM D 4956, Table 13.
[6]ASTM D 4956, Table 4.

(e) Expected Sign Life Data and Performance: The sheeting manufacturer shall supply expected retroreflectivity service life curves for each of the following sign sheeting colors: white, green, blue, brown, red, and yellow. The service life curves shall be plots of the 95 percent expected life plotted on an x-y graph with life years on the x-axis and retroreflectivity on the y-axis. The expected life shall account for worst case installations, equivalent to an installation in South Louisiana with the sign facing to the South. The sheeting manufacturer shall also supply a table of expected life values taken from the service life curves for Revision Number 2 to the 2003 Edition of the MUTCD minimum reflectivity requirements published in the Federal Register on December 21, 2007. Reflective sheeting for signs, when processed, applied and cleaned in accordance with the manufacturer's recommendations shall perform outdoors in accordance with the performance standards in Table 1015-4.

Table 1015-4
Reflective Sheeting Performance Standards

Type	Retroreflectivity[1] -- Durability[2]				Colorfastness[3]
	Orange/ Fluorescent Orange		All colors, except orange/Fluorescent Orange		
III	3 years	80[4]	10 years	80[4]	3 years
X	3 years	80[5]	7years	80[5]	3 years

[1]Percent retained retroreflectivity of referenced table after installation and the field exposure time specified.
[2]All sheeting shall maintain its structural integrity, adhesion and functionality after installation and the field exposure time specified.
[3]All colors shall conform to the color specification limits of ASTM D 4956 after installation and the field exposure time specified.
[4]ASTM D4956, Table 8.
[5]ASTM D 4956, Table 4.

(f) Temporary Signs, Barricades, Channelizing Devices, Drums and Cones: Reflective sheeting for temporary signs, barricades and channelizing devices, shall meet the requirements of ASTM D 4956, Type III except that temporary warning construction signs used on the mainline of freeways and expressways shall be fluorescent orange and meet the requirements of ASTM D 4956, Type X.

Reflective sheeting for vertical panels shall meet the requirements of ASTM D 4956, Type III.

Reflective sheeting for drums shall be a minimum of 6 inches (150 mm) wide and shall meet the requirements of ASTM D 4956, Type III, and the Supplementary Requirement S2 for Reboundable Sheeting as specified in ASTM D 4956. Reflective sheeting for traffic cone collars shall meet the requirements of ASTM D 4956, Type III or Type VI.

(g) Sheeting Guaranty. The contractor shall provide the Department with a guaranty from the sheeting manufacturer stating that if the retroreflective sheeting fails to comply with the performance requirements of this subsection, the sheeting manufacturer shall do the following:

Table 1015-5
Manufacturer's Guaranty-Reflective Sheeting

Type	Manufacturer shall restore the sign face in its field location to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below		Manufacturer shall replace the sheeting required to restore the sign face to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below
	Orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange	All colors, except orange/Fluorescent Orange
III	<3 years	<7 years	7-10 years
X	<3 years	<5 years	5-7 years

[1] From the date of sign installation.

Replacement sheeting for sign faces, material, and labor shall carry the unexpired guaranty of the sheeting for which it replaces.

The sign fabricator shall be responsible for dating all signs with the month and year of fabrication at the time of sign fabrication. This date shall constitute the start of the guaranty obligation period.

COOPERATION WITH UTILITIES (07/07): Subsection 105.06 of the Standard Specifications is amended to include the following.

Utility facilities will be removed, relocated, adjusted or abandoned in accordance with agreements between the Department and utility owners listed below. Starting dates for such work will be determined by the engineer and may be different for each utility and may not be underway concurrently with the contractor's work or with other utility relocations. Utility relocations can be within the construction limits covered by this contract. The furnishing of the following estimated completion times for utility work is for information purposes only and will not relieve the contractor of any requirements of this subsection nor will it preclude the granting of contract time credits in accordance with the provisions of this subsection. A utility company calendar day shall be the same as defined in Subsection 101.03 of the standard specifications.

UTILITY OWNER	Estimated Calendar Days After Right-Of-Way Is Clear
Qwest Communications 12167 North freeway Houston, TX 77060	0
Atmos Energy Louisiana 3616 South I-10 Service Road Suite 200 Metairie, LA 70001	2
Cox communications 800 west Commerce Road 4th Floor Harahan, LA 70123	0
Entergy Post Office Box 6100 Mail Unit L-JEF-367 New Orleans, LA 70161-1000	120
AT&T Louisiana 840 Poydras Avenue Room 1418 New Orleans, LA 70112	30

BASE MOUNTED CABINET (P-TYPE) FOR FULL-ACTUATED CONTROLLER WITH PREEMPTION AND HARDWIRE INTERCONNECT

1.0 SPECIFICATIONS PURPOSE

This specification describes the minimum acceptable requirements for a base mounted cabinet to house a solid state full-actuated controller unit, load switches, flasher, preemption equipment and conflict monitor.

2.0 DESIGN REQUIREMENTS

Unless otherwise called for in the plans, the cabinet shall be a base mount cabinet with the following external dimensions:

Width - 44 inches
Height - 54 inches
Depth - 26 inches

The height and depth dimensions may be plus 4 inches, minus 2 inches.

3.0 MOUNTING REQUIREMENTS

The base mounting holes shall be located at the corners of a 40.6 inch by 18.5 inch rectangle. The holes shall be slotted to allow the cabinet to be adjusted plus or minus 1/2 inch along the short dimension of the cabinet and shall be large enough to accommodate a 1 inch diameter bolt.

3.1. Four, 5/8 inch (minimum) by 8 inch galvanized anchor bolts with nuts and washers and a mounting template shall be provided for each cabinet.

4.0 MISCELLANEOUS REQUIREMENTS

4.1 The cabinet shall be constructed using unpainted sheet aluminum with a minimum thickness of 0.125 inch. No wood, wood fiber products or other flammable material shall be used in the cabinet. All welds shall be neat and of uniform consistency.

4.2 The cabinet shall be completely weatherproofed to prevent the entry of water. All un-welded seams shall be sealed with a clear or aluminum colored weather seal compound. Aluminum lifting eyes or ears shall be permanently attached or built into the cabinet to permit the purchaser to lift the cabinet with a sling. The corners of each eye or ear shall be rounded.

4.3 Vertical shelf support channels shall be provided to permit adjustment of shelf location in the field.

4.4 Each cabinet shall be equipped with an extra set of Unistrut channels or a keyhole panel on either side of the front section of the cabinet to permit the purchaser to mount additional equipment as necessary.

4.5 Shelves shall be at least 10 1/2 inches deep and be located in the cabinet to provide a 1/2 inch clearance between the back of the shelf and the back of the cabinet.

4.6 There shall be sufficient shelf space to accommodate a controller unit 13 inches high, a 12 channel NEMA conflict monitor and 12 NEMA type loop detector amplifiers. An additional space 12 inches high, 14 inches wide and 12 inches in depth, shall be provided.

4.7 The cabinet shall be vented and cooled by two (2) thermostatically controlled fans. The fans shall be a commercially available model with a capacity of at least 100 CFM. The thermostat shall be an adjustable type with a range of between 70 and 110 degrees F. A press-to-test switch shall be provided to test the operation of the fans.

4.8 The intake for the fan ventilation system shall be filtered with an air conditioning filter. The minimum filter dimensions shall be 16 inches wide by 12 inches high by one inch thick. The filter shall be securely mounted so that any air entering the cabinet must pass through the filter. The cabinet opening for this intake of air shall be large enough to use the entire filter. The air intake and exhaust vent shall be screened to prevent entry of insects. The screen shall have openings no larger than 0.0125 sq. inch. The total free air opening of the exhaust vent shall be large enough to prevent excessive back pressure on the fans.

4.9 The cabinet shall be provided with a unique five digit (minimum) serial number, which shall be stamped directly on the cabinet or engraved on a metal or metalized Mylar plate, epoxied or riveted with aluminum rivets to the cabinet. The digits shall be at least 0.2 inch in height and located on a visible interior sidewall of the cabinet near the front.

5.0 BACK PANEL

5.1 The back panel shall be designed to accept 12 NEMA load switches (Eight vehicle phases and four positions for overlap and/or pedestrian phase combinations) and a NEMA two circuit flasher. A minimum of six flash transfer relays (NEMA standard) shall be provided to permit the use of the overlap/pedestrian load switches in any combination without having to add more relays.

5.2 The back panel shall be hinged at the bottom and shall fold down and out from the top for maintenance with all components (load switches, relays, etc.) in place. It shall be possible to gain full access to the back of the panel in less than two minutes using simple tools. Wire termination points on the back of the back panel shall be numbered or identified to correspond to the labeling on the face of the panel. No printed circuits on back panels shall be permitted. No components shall be mounted behind the back panel. Transient suppression devices for relay coils are an exception to this requirement.

5.3 The bottom edge of the back panel shall be at least six inches above the base of the cabinet.

5.4 The outputs from the controller to the load switches shall be brought through posted 6-32 x 1/4 inch binder head screw terminals with removable shorting bars installed.
5.5 The controller assembly back panel shall provide 12 load switch sockets connected for 8 vehicle (phase 1-8) and 4 overlap (phases 2, 4, 6 and 8) movements. Twelve load switches shall be supplied with each cabinet. It shall be possible to easily configure the overlap load switches to perform pedestrian functions using only a screwdriver.
5.6 The load switches and flasher shall be supported by a shelf or bracket(s), designed to accept all NEMA type load switches and flashers, which will support the switch and prevent vibration from dislodging it from the socket in the back panel.
5.7 The load switch outputs shall be brought out through posted 10-32 x 5/16 inch binder head screw terminals. Field wiring for the signal heads shall be connected at this terminal strip.
5.8 Flash programming of either Amber or Red flashing field signal indications shall be easily configured using only a screwdriver.

6.0 DETECTOR PANEL
6.1 The cabinet shall have a loop detector panel mounted on the left side of the cabinet. This panel shall provide for all connections between loops at the street and detector amplifiers, Pedestrian call isolation, detector test switches and connection between detector amplifiers and the controller unit.
6.2 Inputs from the street loops shall be brought in through posted 10-32 x 5/16 inch binder head screw terminals.
6.3 The outputs from the detectors to the controller shall be brought through posted 6-32 x 1/4 inch binder head screw terminals with either removable shorting bars installed or wire jumpers located on separate terminals on the face of the back panel.
6.4 Eight detector harnesses shall be provided (one per phase) and as many additional harnesses as required for the operation specified in the plans (when provided). These harnesses shall terminate at 6-32 x 1/4 inch (minimum) binder head screw terminals that may be mounted on the back panel or side wall of the cabinet. Each harness shall be long enough to reach each amplifier, in the order of phasing assignments, on the detector shelf.
6.5 The detector harness shall be equipped with an MS3106A-18 1S connector and shall be wired as follows:

PIN NO.	FUNCTION
A	AC Common
B	Controller Unit Logic Ground
C	120 Volts AC
D	Loop Input
E	Loop Input
F*	Controller Detector Call Input
G	Spare
H	Earth Ground
I*	Controller Detector Call Input
J	120 Volt AC Input - from green load switch for this phase.

*Note: Pins I and F to be jumpered together.

6.6 An ON-OFF MOMENTARY toggle switch shall be provided for each vehicle and pedestrian phase to permit the user to disconnect the input from the detector for that phase from the controller unit, or permit the user to place a call to the controller. The MOMENTARY

position shall place a call to the controller. The ON position shall connect the detector to the controller unit. The center OFF position shall disconnect the detector from the controller unit.

6.7 Pedestrian isolation card shall be provided. Pedestrian calls from pushbuttons shall be optically isolated from the controller inputs using external solid-state circuitry mounted on a pedestrian isolation card.

7.0 CABINET DOOR

7.1 The cabinet shall be provided with one door in front that will provide access to the cabinet. The door shall be provided with three hinges with non-removable stainless steel pins, or a full-length piano hinge with a stainless steel pin spot-welded at the top of the hinge. The hinge(s) shall be mounted so that it is not possible to remove them from the door or cabinet without first opening the door. The bottom of the door opening shall extend at least to the bottom level of the back panel.

7.2 The door and hinge(s) shall be braced to withstand a 50-pound per vertical foot of door height load applied vertically to the outer edge of the he door when standing open. There shall be no permanent deformation or impairment of any part of the door or cabinet body when the load is removed. Provisions shall be designed to hold the door open at approximately 90 degrees and 180 degrees.

7.3 The cabinet door shall be fitted with a Number 2 Corbin lock and cast aluminum or chrome plated steel handle with a 1/2 inch (minimum) shaft and a three point latch. The lock and latch design shall be such that the handle cannot be released until the lock is released. One key shall be provided for each cabinet. The lock shall be located clear of the arc of the handle. The door handle shall be capable of being padlocked in the closed position.

7.4 A gasket shall be provided to act as a permanent dust and weather resistant seal at the controller cabinet door facing. The gasket material shall be of a nonabsorbent material and shall maintain its resiliency after long-term exposure to the outdoor environment. The gasket shall have a minimum thickness of 3/8 inch. The gasket shall be located in a channel provided for this purpose whether on the cabinet or on the door(s). An "L" bracket is acceptable in lieu of this cannel if the gasket is fitted snugly against the bracket to insure a uniform dust and weather resistant seal around the entire door facing.

7.5 A locking auxiliary police access door shall be provided in the door of the cabinet to provide access to a panel that shall contain a signal shutdown switch, a signal flash switch, a manual-automatic switch and a manual controller phase advance pushbutton switch on a six foot retractable cord. Manual control of the controller unit from the police door panel shall override any external control (external logic, etc.) in effect when the Manual-Automatic switch is in the manual position. Each actuation of the manual advance pushbutton switch shall advance the controller to the next pedestrian or green interval as described in NEMA TS 1-1983 14.3.4.2(5). Manual control shall not override any calls for preemption.

7.6 The police access door shall be gasketed to prevent entry of moisture or dust and the lock shall be provided with one brass key.

7.7 A heavy gauge vinyl plastic pouch shall be riveted to the inside of the cabinet door. The pouch shall be approximately 12 x 17 inches and large enough to accommodate a copy of the cabinet wiring diagram, controller manual, and a documentation for other accessories.

8.0 INTERCONNECT/PREEMPT PANEL

8.1 In this bid or on enclosed plan sheets, and interconnect and/or preemption panel will be supplied as described in the following specifications.

An Interconnect/preempt panel shall be provided that contains all interface circuits and wiring for preemption and hardwire interconnect functions between the cabinet and the controller unit.

The panel shall be located on the left side of the cabinet interior.

8.2 The interconnect/preempt panel shall be interfaced through a 57- conductor communication cable. The cable shall be hardwired to the back of the interconnect/preempt panel, and shall be connected to the controller through a 57-pin plastic shell twist-lock connector having standard pin assignments defined in Appendix I. The exact socket pin part number will depend on the vendor's available tooling. The cable shall be an AMP 206437-1 connector or exact equivalent with gold plated male pins.

8.3 All pins defined in Appendix I shall be available at terminal strip connections on the interconnect/preempt panel. The terminals shall be 6-32 x 1/4 inch minimum.

8.4 Preempt Panel Requirements

8.4.1 Two relay circuits, with 120 VAC coil and contacts rated for application, shall be provided on the interconnect/preempt panel. These circuits shall be used to isolate the incoming preempt commands from the controller unit logic circuitry. The circuits shall be programmable to operate with either a normally open or normally closed relay contact by jumpers on a terminal strip. A barrier strip protected from accidental contact by service personnel shall be supplied to connect the external input. It shall be possible to use either a neutral or hot 120 VAC input. Relays used shall be plug-in Potter Brumfield K10P series/Magnacraft W-78 series or interchangeable equivalent. The relays shall be mounted in relay sockets.

8.4.2 Adequate protection of the input relay circuits as well as the preemptor circuitry shall be provided to eliminate damage or false preemption commands caused by line transients or lightning surges. The devices shall have a minimum rating of 10-20 Joules.

8.4.3 As a minimum, two momentary test switches, one for each preempt circuit, shall be supplied on the panel. The operator shall not be exposed to hazardous voltages during operation of the test switches.

8.4.4 All necessary interconnection cables and mounting hardware shall be provided.

8.5 Coordination Interconnect Panel Requirements

8.5.1 The interconnect panel shall have all terminals and connections for hardwire coordination interconnect operation, as defined in Appendix I including the following inputs and outputs for both master and secondary operation in a conventional intersection system: 2 Cycles, 2 Splits, 3 Offsets, Coordination Free and Flash.

8.5.2 Operation as master or secondary for any given application shall be operated and/or jumper-program selectable. All I/O connections shall be brought to terminal strips on the coordination panel and shall be clearly identified by function. The entire panel shall be readily replaceable in the field for maintenance purposes using common tools.

8.5.3 All coordination inputs and outputs between the interconnect panel and the controller shall operate at 24 VDC ground true.

9.0 COMMUNICATIONS PANEL

In this bid or on enclosed plan sheets, a communications interconnect panel will be supplied as described in the following specifications.

9.1 A communications interconnect panel shall be provided that contains all interface circuits and wiring for Closed Loop Communication functions between the master controller, secondary (local) controllers and central monitoring station (computer).

9.2 The panel shall be constructed of 0.125 aluminum plate and shall contain non seams or joints of any kind. All edges and holes shall be smooth and free of burrs. The plane surfaces shall have smooth, uniform natural aluminum finish.

The panel shall have terminals and connections for a minimum of six (6) communication twisted pairs to be terminated. These terminals shall be 6-32 x 1/4 inch (minimum) binder head screws. Also located on the communications panel shall be one surface mounted Bell Systems RJ11 jack for connecting voice/phone communications. Also connected to the communications panel shall

be one five (5) foot (minimum) RJ11 telecommunications (phone cable) cable for communication between controllers.
Surge suppressers shall be supplied for a minimum of one of the terminal pair connections and one for the voice/phone connection. These surge suppressers shall be EDCO Model SRA 16C or approved equivalent for the terminal pair and an EDCO SRA-64C-150 or approved equivalent for the voice/phone communication and shall be mounted directly to the surface of the communications panel.
9.5 All unused pairs either terminated on terminal blocks or spared shall be grounded to the communications panel, which shall be securely mounted to the sidewall of the cabinet.
9.6 Termination and labeling of the six (6) pair communications cable will be in the following order.

TERMINAL	CONNECTION
DT4-1	Wire 1 of first pair
DT4-2	Wire 2 of first pair
DT4-3	Wire 1 of second pair
DT4-4	Wire 2 of second pair
DT4-5	Wire 1 of third pair
DT4-6	Wire 2 of third pair
DT4-7	Wire 1 of fourth pair
DT4-8	Wire 2 of fourth pair
DT4-9	Wire 1 of fifth pair
DT4-10	Wire 2 of fifth pair
DT4-11	Wire 1 of sixth pair
DT4-12	Wire 2 of sixth pair

9.7 All necessary communication cables and hardware shall be provided.

10.0 WIRING
10.1 All wiring within the cabinet shall be neat and routed such that opening and closing the door, or raising or lowering of the back panel will not twist nor crimp the wiring. All wiring harnesses shall be either breaded, sheathed in nylon mesh sleeving, or made of PVC or polyethylene insulated jacked multi-wire cable only.
10.2 SIZE
10.2.1 All conductors between the main power circuit breakers and the signal power bus shall be a minimum size 10 AWG stranded copper. All conductors carrying individual signal lamp current shall be a minimum of size 16 AWG stranded copper. All AC service lines shall be of sufficient size to carry the maximum current of the circuit or circuits they are provided for, Minimum cabinet conductor wire size shall be 22 AWG stranded copper.
10.2.2 Conductors for AC Common shall be white. Conductors for equipment grounding shall be green. All other conductors shall be a color different than the foregoing.
10.3 A barrier terminal block with a minimum of three compression fitting terminals designed to accept up to a 4 AWG stranded wire shall be provided for connection of the AC power lines. The block shall be rated at 50 Amps minimum.
10.4 All terminals shall be permanently identified in accordance with the cabinet-wiring diagram. Where through-panel solder lugs or other suitable connectors are used, both sides of the panel shall have the terminals properly identified. Identification shall be permanently attached and as close to the terminal strip as possible and shall not be affixed to any part, which is easily removable from the terminal block panel.
10.4.1 Each controller input and output shall be distinctly identified with no obstructions, at each terminal point in the cabinet, with both number and the function

designation. The same identification must be used consistently on all the cabinet wiring diagrams.

10.4.2 Each load switch socket shall be identified by phase number and overlap number as applicable. No cabinet equipment, including the load switches themselves, may obstruct these identifications.

10.4.3 Each flash transfer base and power relay base shall be properly identified with no possible obstructions.

10.4.4 Each harness within the cabinet shall be distinctly identified by function on the connector end.

10.4.5 The flashe r socket shall be distinctly identified with no possible obstructions.

10.4.6 All other sockets needed within the cabinet to fulfill the minimum requirements of these specifications, or attachments thereof, shall be distinctly identified.

10.5 All NEMA controller units and conflict monitor connector pin outs, except for NEMA designated "Spares", shall be made available on 6-32 x 1/4 (minimum) binder head screw terminals on the back panel.

10.6 The controller unit harness (A, B and/or C plugs) shall be long enough to reach any point 16 inches above the timer shelf. The conflict monitor harness and any required auxiliary harness shall reach 24 inches from the conflict monitor shelf.

10.7 Copper compression ground buses shall be provided for both the power supply neutral (common) and chassis ground. Each bus bar must provide a minimum of ten (10) unused terminals with 8-32 x 5/16 inch or larger set screws. The AC neutral and chassis ground buses shall be jumpered together with a minimum 10 AWG wire. The logic ground shall be isolated from the AC neutral and terminated on a logic ground bus designed to accept 20 number 20 AWG stranded wires. The ground shall consist of a compression bus bar connected to the back panel. The bus bar shall be connected to the cabinet by an insulated braided copper ground strap or 10 AWG insulated copper wire. The ground shall be bonded to the cabinet and shall not interfere with the lowering of the back panel.

10.8 A 20 Ampere and a 50-Ampere thermal type circuit breaker shall be mounted and wired in the cabinet. The 20-Ampere breaker shall protect the base light, trouble light, GFCI receptacle and fans. The 50-Ampere breaker shall protect the signal load circuits, controller circuits, conflict monitor, flasher and loop detectors. The breakers shall be Square "D" QUO 120 and 150 Series or equivalent.

10.9 The circuit breakers shall be quipped with solderless connectors and installed on the right side wall (facing the cabinet), on a separate power panel containing cabinet surge suppresser, RFI suppresser and mercury wetted bus relay. The breakers shall be easily accessible. The breakers shall be positioned so that the rating markings are visible. A duplex GFCI receptacle shall be mounted and wired in the right side wall of the cabinet. This receptacle shall be wired on the load side of the 20 Amp circuit breaker.

10.11 The load side of the main circuit breaker shall be protected by a lightning surge suppresser model EDCO SHP300-10 or equal.

10.12 The suppresser ground connection shall be connected to the cabinet by means of a short, 10 AWG stranded wire. The ground shall be bonded to the cabinet.

10.13 The suppresser shall be connected to the line filter as recommended by the manufacturer. Number 10 AWG or larger wire shall be used for the connections to the suppresser, line filter and load switch bus.

10.14 A fluorescent light, with switch, shall be installed in the cabinet. This light shall be turned on when the cabinet door opened and turned off when the cabinet door is closed.

10.15 A radio frequency interference (RFI) suppresser shall be provided and installed on the load side of the signal circuit breaker and shall be protected by the surge protector. This filter

shall be rated at 50 Amperes and shall provide a minimum attenuation of 50 decibels over the frequency range of 200 Kilohertz to 75 Megahertz.

10.16 Transient suppression devices shall be placed on the coil side of all relays in the cabinet. DC relay coils shall have, as a minimum, a reversed biased diode across the coil. AC relays shall have a RC Network suppresser across their coils.

10.17 Except where soldered, all wires shall be provided with lugs or other approved terminal fittings for attachment to binding post. Insulation parts and wire insulation shall be insulated for a minimum of 600 volts.

10.18 The outgoing traffic control signal circuits shall be of the same polarity as the line side of the power source.

10.19 A switch shall be provided on the inside face of the cabinet door that shall be labeled Test-Normal. When the switch is in the Normal position, call for flashing operation shall remove the power from the controller unit. When the switch is in the Test position, the call to flashing operation shall permit the controller unit to continue to run so that its operation can be observed.

10.20 A switch shall be provided near the Test-Normal switch to cause the controller unit and any auxiliary equipment, to stop timing. It shall be labeled "STOP TIME".

10.21 The cabinet shall be wired so that activation of the conflict monitor will cause the controller unit and any auxiliary equipment, to stop timing.

10.22 Conflict and manual flash shall be wired for all red.

10.23 The cabinet shall be designed and equipped with enough transfer relays (6 being minimum required) for the purchase to change any main street indications (movements 2,6 and 1,5) to amber for the conflict and/or manual flash operation on the face of the back panel or a side panel, using only simple tools.

10.24 Transfer relays shall be the plug-in type manufactured by Midtex (Part No. 136-62T3A1) or AEMCO (Part No. 136-4992), or equivalent. The relays shall have contacts a minimum of 3/8" diameter in size and shall be rated at a minimum of 30 Amps 102/240 VAC, 20 Amps 28 VDC.

10.25 A 50 Amp, Mercury wetted, relay shall be wired between the RIF filter output and the load switch power bus. The relay shall be controlled by the signal shutdown switch and the flash switch.

11.0 DOCUMENTATION

11.1 Each cabinet shall be provided with the following documentation:

A. Three complete, accurate and fully legible cabinet wiring diagrams.

B. Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA or EAI.

12.0 TEST AND ACCEPTANCE OF CONTROLLER CABINET ASSEMBLY

12.1 The supplier shall be prepared to provide a certified test report from an independent laboratory indicating that the complete controller cabinet assembly meets the requirements of NEMA Standard Publication TS 1-1983, Part 2. The certification may be required at any point in the acceptance process.

13.0 GUARANTY

13.1 If it is normal trade practice for the manufacturer to furnish a guaranty for the work provided herein, the contractor/supplier shall turn this guaranty over to the purchaser for potential dealing with the guarantor. The extent of such guaranty will not be a factor in selecting the successful bidder.

APPENDIX I
INTERCONNECT/PREEMPT PANEL (57 PIN) CONNECTOR PIN ASSIGNMENTS

PIN	FUNCTION
1	OFFSET 1 IN
2	CYCLE 2 IN
3	CYCLE 3 IN
4	FLASH IN
5	OFFSET 2 IN
6	OFFSET 3 IN
7	INTERCONNECT FREE
8	SPLIT 2 IN
9	SPLIT 3 IN
10	SPECIAL FUNCTION 2 OUT
11	COMPUTER ON-LINE
12	FORCE 3 PHASE OPERATION
13	FORCE 4 PHASE OPERATION
14	SEPARATE INTERSECTIONS 2 X 4
15	RESERVED
16	EXTERNAL RESYNC INPUT
17	MASTER SELECT
18	SYNC INPUT
19	PREEMPT 1 IN (R.R.)
20	PREEMPT 2 IN
21	PREEMPT 3 IN
22	PREEMPT 4 IN
23	PREEMPT 5 IN
24	PREEMPT INTERLOCK/ACTIVE
25	DETECTOR 45P INPUT/ SYSDET 1
26	DETECTOR 25S INPUT/ SYSDET 2
27	DETECTOR 18P INPUT/ SYSDET 3
28	DETECTOR 16S INPUT/ SYSDET 4
29	DETECTOR CIR. 2B/1P INPUT/ SYSDET 5
30	DETECTOR CIR. 2A INPUT/ SYSDET 6
31	DETECTOR CIR. 1B/2P INPUT/ SYSDET 7
32	DETECTOR CIR. 1A INPUT/ SYSDET 8

PIN	FUNCTION
33	EXTERNAL Alarm Input A (Option)
34	EXTERNAL Alarm Input B (Option)
35	CONTROLLER Interlock OUTPUT
36	COMPUTER SELECT 1
37	COMPUTER SELECT 2
38	COMPUTER SELECT 3
39	SPECIAL FUNCTION 3 OUT
40	SPECIAL FUNCTION 4 OUT
41	SPECIAL FUNCTION 5 OUT
42	CABINET INTERLOCK INPUT
43	SPECIAL FUNCTION 1 OUT
44	SPLIT 3 OUT
45	SPLIT 2 OUT
46	INTERCONNECT FREE OUT
47	OFFSET 3 OUT
48	OFFSET 2 OUT
49	FLASH OUT
50	CYCLE 3 OUT
51	CYCLE 2 OUT
52	OFFSET 1 OUT
53	+24 VOLTS DC
54	-24 VOLTS DC
55	CHASSIS GND
56	RESERVED
57	RESERVED

KENTRONICS MODEL 1880 LCD TS 1 / 2 FULL-ACTUATED SOLID STATE CONTROLLER UNIT WITH TBC/BCT, PREEMPT, AND INTERCONNECT CAPABILITIES (or approved equal)

1.0. SCOPE

This specification sets forth the minimum requirements for a shelf-mounted eight phase full-actuated solid state NEMA controller with internal time-based coordination / background cycle timer (TBC/BCT), railroad/fire run (emergency vehicle) preemption, interconnect capabilities, and computer on-line input/output for computer control for use in a traffic signal controller.

2.0. GENERAL

2.1. The controller unit shall meet the requirements of NEMA Standards Publication No. TS 1-1989, Parts 2, 13, 14 and TS 2. Where a difference occurs, these requirements shall govern. The controller must also be fully downward compatible with the KMT1700 Kentronics controller. The controller must be capable of independent, interconnected and system operation.
All inputs and outputs to the controller unit shall conform to all interface and environmental standards in NEMA TS 1. The controller is to have a microprocessor-controlled system that allows for NEMA TS-1 & NEMA TS-2 operational compliance.
Each controller unit shall have a unique serial number that is permanently and neatly displayed on the face or side of the unit.

3.0. HARDWARE AND DESIGN REQUIREMENTS

3.1. 8 Phase Controller Unit with multi-port communications that allows for closed loop operation and integration of third party monitoring devices.

3.2. The controller unit shall be completely solid state and digitally timed. All timing shall be referenced to the 60Hz power line.

3.3. The controller unit shall be built using one or more circuit boards. All printed circuit boards shall be designed to plug into or out of a motherboard or harness within the unit.

3.4. The design shall allow for removal or replacement of a circuit board without unplugging or removing other circuit boards.
The unit shall be designed so that one side of each board can be completely accessible for troubleshooting and testing the unit while it is still operating. This will not be accomplished with extender boards or cables. This applies to all major operational circuit boards (CPU, I/O, and Display circuit board).

3.6. No circuit cuts shall be allowed on circuit boards in any of the equipment supplied. Any wire jumpers included on circuit boards shall be placed in plated through holes that are specifically designed to contain them. Jumpers that are tack soldered to circuit traces are not acceptable.

3.7. All ICs shall be mounted in high reliability, high contact force sockets. The sockets shall have thermoplastic bodies meeting UL Specification 94V-O.

3.8. Each of the following shall be displayed on the face of the unit:

1. Phase(s) in service (one per phase)
2. Phase(s) next to be serviced (one per phase)
3. Presence of vehicle call(s) (one per phase)
4. Presence of pedestrian call(s) (one per phase)
5. Reason for green termination (one per ring)
    (1) Gap-out
    (2) Maximum time-out
        a. Max 1

b. Max 2

(3) Force-off

6. Pedestrian service (one per phase)
7. Cycle counter (coordination)
8. Current split and offset (coordination)
9. Ring 1 and Ring 2 counters.
10. Alternate Real time Graphic Quad-left intersection display with all of the above
11. Watchdog timer
12. Voltage monitor

Steady and flashing indications may be used for phase in service, phase next, and pedestrian service (walk, don't walk), or any other mutually exclusive indications.

3.9. User programmed entries and timing service shall be stored and maintained in a removable non-volatile electrically erasable programmable read only memory (EEPROM). The EEPROM shall be programmed only when selected by the user. EEPROM memory shall not be automatically updated when data is entered into RAM. Batteries will not be allowed for maintaining this application.

3.10. All circuit components shall be of high quality and designed to withstand any of the environments, and voltage conditions described in Part 2 of the NEMA Standard TS 1 - 1989.

The controller unit shall be designed to operate properly with the logic ground isolated from the AC neutral (common).

3.12. High quality keyboard with a rated lifetime of 1 million operations/key shall be provided on the front panel of the controller unit.

3.13. A "backlit" graphic liquid crystal display (LCD) shall be provided on the front panel of the controller unit. The display shall be clearly readable in ambient light including the cabinet light or full sunlight from a distance of 3.5' at a 45-degree angle. This shall be accomplished without the aid of backlighting or shading of the display. The display shall be configured as a minimum 40 characters X 16 line display.

The display shall have two modes of operation, dynamic and menu programming. The dynamic display shall provide a visual status of real-time controller unit operations and shall be the default. Data entry shall be provided through direct access to data locations while in this mode and shall dynamically display such changes as they occur.

3.15. The menu mode of programming shall aid the operator in entry of data from the keyboard. The main menu shall provide direct access to all data locations. All data locations presented as actual phase movements shall be displayed in their entirety. A sub-menu is permissible to display selection groups of data for specific areas within a function. It shall be possible to return to the main menu from these data locations with a single keystroke.

3.16. All programming entries shall consist of numerical values, YES/NO, ON/OFF or logical 1's/0's entries. During data entry, the new data shall be displayed as it is entered from the keyboard. Data entries shall only be stored and validated in operational RAM (only) when an "Enter" or "Load" key is pressed. Any other form of data entry is unacceptable.

3.17. The multi-port communication system shall consist of one (4) RS232 Serial Ports 1200-9600 Baud and (1) RS485/422 Transceiver Port 2.5 Mbps.

The front panel shall have a Menu Driven LCD, Liquid Crystal Display.

The format for the LCD is as follows:

40 X 16 character Super-Twist Reflective back LCD screen menu driven

Additional front panel components:

(1) LED lamp for processor watch dog indication

(1) 16 key keyboard for data entry and retrieval

(1) RS232C [illegible] communication connectors

4.0 COORDINATION TBC/BCT

The clock shall use the sixty (60) Hertz power line frequency as time base when power is present. The clock operating voltage range shall be 95 to 135 volts AC over the temperature range of -34 degrees C to +74 degrees C.

In the event of power failure, the clock shall continue to operate for a minimum of 48 continuous hours per outage while maintaining a cumulative accuracy of +/-0.005% (less than 4.4 seconds per day).

The following front panel displays shall be provided continuously on the front panel under all single countdown display screens. Access to all count down screens shall be with a single keystroke:

1. Current cycle
2. Current split
3. Current offset
4. Coordination status (free or coordinated)
5. Local and system cycle counters

It shall be possible to download from the controller unit all TBC/BCT programs, clock synchronization, and operator entered signal timing data by use of an interconnect cable and the keyboard to another controller unit. This transfer shall occur via an RS-232C serial data port with a DB-25 pin female connector.

The internal coordination (TBC/BCT) parameters shall include as a minimum six (6) cycles, four (4) splits per cycle, five (5) offsets per split, eight (8) force-offs per split, three permissives per split, and dual pedestrian permissives per phase permissive.

The coordinator unit shall also provide all necessary hardwire inputs/outputs, as standard, for configuration as either master or secondary. The controller shall be capable of generating a sync-out pulse for coordination control in either the master or secondary mode of operation. This pulse shall not be interrupted during any other mode of operation.

Coordination synchronization shall be accomplished by programming for short way offset, dwell or re-sync on plan change. The T0 point in the cycle shall also be programmable to occur at either the beginning or end of the main street phase(s).

In addition to manual coordination, auto-coordination shall also be provided by the programming of maximum percentages of cycle on a per phase basis. Monitoring of these percentages for entry errors shall also be provided. Computations shall automatically load all split information (force off, permissive, etc.) in user selected data locations (dial/split plans). This computed data shall be the same as used for manual coordination.

5.0 PREEMPT

There shall be a minimum of six (6) preempt inputs programmed internally in the controller unit. Five of these are required, as a minimum, to be brought out through the 57 Pin connector described in Appendix I.

A 100-250 millisecond delay to eliminate false preemption commands, shall be provided by the controller unit before initiation of the preempt sequence.

Countdown interval timing displays shall be provided for each interval and shall be displayed during the timing of the associated interval.

Individual minimum green, yellow, red, walk and don't walk times shall be provided for each type of preempt.

It shall be possible to program each preempt to either flash or to rum a limited sequence of assigned phases during the preempt.

Controller unit inputs for preemption shall conform to all the same NEMA input requirements as described before.

6.0 INTERCONNECT/PREEMPT PANEL ADAPTOR

6.1. There shall be an interface adaptor (fourth connector) located on the face of the controller unit. It shall consist of a 57-pin AMP 206438-1 (gold plated female pin) connector or exact equivalent. See Appendix I for 57 pin D assignments.

7.0 INTERCONNECT

External cycle and split commands shall be binary and encoded on the respective cycle and split input lines such that cycle 1 and split 1 shall be called for by neither of their respective pairs of inputs being active, and cycle 4 and split 4 shall be called for by activation of both the cycle 2 and 3, or split 2 and 3 inputs respectively. The offset selection scheme received from, or transmitted to, any external interconnect cable by the interconnect termination panel shall have the synchronization pulse superimposed upon whichever ONE of the offsets 1, 2, or 3 lines is energized at any one time. Any scheme where the synchronization pulse is transmitted on a line separate from the offset selection lines is not acceptable.

8.0 EXTERNAL DOWNLOAD/UPLOAD INTERFACE

8.1 The controller unit shall have an RS 232 serial port accessible through a DB-25S connector. The following signals shall be present for handshaking with external devices:

Pin No.	Designation
1	Frame Ground
2	Receive Data
3	Transmit Data
4	Request to Send
5	Clear to Send
6	Data Set Ready
7	Signal Ground
	Data Carrier Detect
20	Data Terminal Ready

8.2. The Baud rate of the port shall be jumper selectable for any of the following rates:

1200, 2400, 4800, 9600

Keyboard selection of the above baud rates is unacceptable.

The port shall be configured for an 8-bit word, one (1) stop bit, and no parity.

9.0 EXTERNAL DOWNLOAD/UPLOAD UNIT (If required)

9.1 The option to include external download/upload units and the number of units to be supplied with an order shall be specified in the plans.

9.2 The download/upload unit shall be a "laptop" type unit that is completely IBM XT or AT compatible.

9.3 The download/upload unit shall meet the following additional requirements:

Operating speed not less than 150 MHz;
One 1.44K byte 3 1/2 inch floppy disk drive;
One 6X (minimum) CD-ROM Drive;
1 GB Hard Drive (minimum);
16 Meg. (minimum) of RAM built into unit, expandable to 48 MB;
11.3" SVGA Active-Matrix Color Display;
One built in serial port with signals and controls as defined in section 8.0 above;
One built in Centronics compatible parallel port;
Full function keyboard;
One copy of the latest version of Windows software;
One cable to connect the unit to the controller unit serial port connector;

Dimensions not to exceed 14"w X 13"d X 4"h;
Weight not to exceed 15 pounds.

The download/upload unit shall come complete with battery pack, AC adaptor/charger, car cigarette lighter adaptor cable, user manuals and instructions.

The download/upload unit shall have a hard shell carrying case suitable for use in harsh environments to protect the unit from damage in field use. The case shall be large enough to carry the unit and all its accessories including software/data diskettes.

Software shall be included that will allow the setup and programming of all controller unit timing entries and features. The software shall not require that the controller unit be connected while making entries until the actual download/upload process.

10.0 PROGRAM REQUIREMENTS

10.1 Programming of the controller unit including TBC/BCT features shall be by the use of a keyboard and display on the front of the controller unit. Internal DIP switches may not be used for option, start up, etc., programming. Programming shall require only simple keystrokes aided by full menu displays.

10.2 Ease of programming and ease in interpreting the display shall be required for acceptance. Full menu displays are required.

10.3 Display - The master's front panel display shall be of LCD design displaying a minimum of 40 columns by 16 lines. This LCD display shall also be of "Super-Twist" design and meet all temperature ranges specified under NEMA TS-1 without the aid of heaters.

10.4 An on-line help feature shall be available through the keyboard and display that describes the function of all user programmable features. The help feature shall be accessible by a simple keystroke sequence and shall always be available during any mode or state of controller unit operation.

10.5 A user selectable four digit (minimum) code shall be available to secure access to timing and configuration of the unit. Display of programming data shall be available without the need of access to the security code. The controller units shall be supplied with the code preset to be all zeroes (0000).

10.6 Instructions for use of the access code shall not be provided on the face of the unit.

10.7 The controller unit shall have a copying mode whereby the user, after having programmed all intervals of one phase may copy this information into all or selected remaining phases.

10.8 Volume density timing shall be provided as specified in NEMA TS 1-1989 minimum requirements.

10.9 The controller unit shall be programmable for dual entry operations.

10.10 The following modes shall be available on a per phase basis:

1. Maximum Recall
2. Minimum Recall
3. Pedestrian Recall
4. Detector locking and non-locking memory
5. Phase Omit

10.11 The following configurations, as a minimum, shall be programmed within the controller unit and be user selectable from within the unit:

1. 8 Phase NEMA
2. 8 Phase Sequential
3. NEMA phasing to the left of the barrier, sequential phasing to the right of the barrier.
4. 3/4/6 Phase Diamond Operation
5. Separate Dual Four Phase Intersection Operation (2X4)

The controller unit shall be designed to provide pedestrian phasing with any of the above operations and phasings on a per phase basis.

10.12 As a minimum, twelve overlaps shall be provided in the controller unit. The first four overlaps may be programmable through the keyboard or by using the interchangeable plug-in card described in TS 1-1989, Paragraph 14.3.06, and shall be provided with individual green, yellow and red timing entries. The second 8 overlaps may be programmable through keyboard entry only. These additional overlaps shall be driven through phase and pedestrian load switch drivers and shall be enabled on an individual basis.

10.13 The controller shall be programmable for simultaneous gap operation to allow a phase in dual ring operation to re-extend out of a green rest state. When the phase(s) to be serviced next conflict(s) with both phases being serviced, both concurrent phases must reach a green rest state together before they may terminate. Termination of the max timer or application of a force-off shall override this feature. The phases shall not be allowed to advance to a green interval beyond the rest state, which might defeat the simultaneous gap operation.

10.15 The TBC/BCT shall select and coordinate reversible left turn sequence operations (dual leading, leading and lagging, or lagging and leading left turns). It shall be possible to transfer operation from one sequence to another at a pre-programmed time. Transfer shall take place at the barrier following phases 1, 2, 5 and 6 or at T0.

10.16 Coordination shall be implemented by holding the controller unit in the coordinated phase(s) until a specific point in the cycle, and forcing-off non-coordinated phases at predetermined points within the cycle.

10.17 A minimum of six cycle lengths each shall be changeable from 0 to 360 seconds in one second increments.

10.18 A minimum of five offsets per cycle shall be adjustable from 0 to 200 seconds in 1 second increments.

10.19. A minimum of four splits for each of six cycle lengths shall be provided.
Each split shall provide a permissive point for each non-coordinated phase and a force off for each phase. Permissives, force offs and yield points shall be calculated from split information entered in seconds/phase or in percentage/phase.

10.20 Pedestrian timing shall also be calculated as selected on a per phase basis. No-percentage inputs are allowable except for computation of these coordination parameters. Once the information for phase service is entered, the controller unit shall test the plan to insure that the plan does not violate any minimum times based on the specified numbers and cycle length. If a faulty plan is detected, the controller unit shall show an error code indicating the problem. If the error is not corrected, the controller unit shall run in free operation when the erroneous plan is selected.

10.21 The TBC/BCT default shall be to seek offsets by short way (lengthening or shortening the cycle length up to 18%), by dwelling in the coordination phase awaiting the proper offset or by re-sync on cycle change. The user shall determine which method and may program the longest permissible dwell times. Manual re-synchronization shall also be provided.

10.22 The TBC/BCT shall allow FREE operation and FLASH operation under Time of (T.O.D.) Day control. MAX II shall also be selectable on a T.O.D. basis. Transfer into and out of FLASH shall be in accordance with MUTCD. It shall be possible to program each phase and overlap to flash either yellow or red via the front panel of the controller unit. This shall be accomplished by flashing the load switch driver outputs simultaneously.

10.23 The controller unit coordination program shall be designed to be programmed from the front panel to emulate the operation of a pre-timed controller by recall of BCT for applications where no vehicle detection is provided.

10.24 Pedestrian movements for the main street shall rest in Green and Don't Walk at appropriate points in each background cycle unless the Call to Non- Actuated function is active.

10.25 The internal reference sync pulse, from which the local offset is calculated, shall re-sync at midnight, or the re-sync shall be user programmable with a default to midnight. A pulse shall be generated whenever the Time-of-Day Clock shows a time, which is an exact multiple of the current cycle length after this re-synchronization. In case of a power failure, re-sync shall be calculated from midnight. The power failure recovery routine shall accommodate the case of a power failure at midnight. If the TBC is operating in the free mode, the current cycle length will still cause a sync pulse to be output. This output will not cease due to preempt input, stop timing, manual control enable or any other command other than external start in which case all coordination outputs shall be false.

10.26 The coordinated phase(s) shall be selectable from any of the active phase(s) on either a single or dual ring configuration. Compatible phase pairs shall not be forced to begin simultaneously. Recall shall not be placed automatically on assigned coordinated phase(s).

10.27 The T0 reference point in the cycle for computing offsets shall be the point in the background cycle when main street green must be on. Note this may be the beginning or ending of green and shall be user selective. In the case of early return to main street green, the pedestrian outputs shall not turn on until the reference point in the cycle is reached.

10.28 When establishing its offset from the reference point the coordinator shall reference only the leading edge of the sync pulse, regardless of its width. Pulse width shall be a minimum of 3 seconds.

10.29 It shall be possible for the coordinator to establish its offset from an External Input Re-sync pulse while the internal T.O.D. clock and event schedule select all other scheduled commands including: Cycle, Offset, Split, Max II, Interconnect Free, and Flash.

10.30 The internal coordination and upload/download program shall be simultaneously operable and mutually non-interfering. The implementation of revised timing parameters loaded into the timer shall be programmed to occur only at appropriate points in the controller coordination cycles. The controller unit may temporarily drop out of synchronization during the upload/download, but must continue to operate. A complete description of the upload/download format and protocol shall be supplied with the order.

10.31 Internal settings, including coordination, shall be accessible via an external modem through the RS232 interface. All functions including detector actuations, signal indications, gap-out, max-out, minimum green, extensions, preempt and coordination synchronization status shall be displayed on the modem connected download/upload unit, or other compatible unit, in approximate real time on a graphical display of the intersection.

10.32 A minimum of 12 user programmable alarms shall be provided for access through the RS232 port by remote interrogation and by automatic dialing initiated by the controller unit.

10.33 All software required to perform the functions described in paragraphs 10.30 -10.31 shall be provided as part of the controller software and shall be provided with each download/upload unit.

11.0 CLOCK / CALENDAR PROGRAMMING REQUIREMENTS

11.1 The clock shall be easily set to the year, month, day of month, day of week, hour, minute, and second.

11.2 The clock shall store an entire yearly program including dates and times for starting and ending daylight savings time (DST).

11.3 The week of the year for the beginning and end of DST shall be keyboard programmable by the user.

11.4 Dates for fixed and floating holidays and special events shall be user programmable.

11.5 Calendar adjustments for leap years shall be automatic.

11.6 The clock shall store sequences of operations in the form of 46 yearly programs, weekly programs, daily programs, and 48 exception programs.

11.7 The structure and interrelationships of each type of program shall be in accordance with the following paragraphs below.

11.8 A program shall, for each of the 66, consist of the following:

Starting Week (1-52) / Month (61-72)
Starting Hour/Minute/Second
Starting Day of Week (1-7 or all)
Program Selection (D.S.O.)
Special Function

11.9 Each TOD Coordination program shall consist of the following special function assignments:

MUTCD flash
CNA 1 (Assignment)
CNA 2 (Assignment)
INHIBIT MAX TERMINATION
ENABLE EXCLUSIVE PED
INTERNAL FREE (System operation)
INTERNAL TOD (System operation)
MAX II (select)
INTERNAL VOC MODE
WALK/REST MODIFIER (select)
PED RECYCLE (select)
DWELL MODE ENABLE
RESYNC ON PLAN CHANGE (select)
SPECIAL FUNCTION SWITCH OUTOUTS (on/off)
ALARM REPORTING ENABLE (on/off)

Any or all of these may be selected within a single program.

11.10 There shall be 48 user programmable exception programs, 24 reoccurring and 24 non-reoccurring/clearing.

11.11 The 48 exception programs shall be user programmable for both fixed and floating exceptions.

11.12 Fixed exception format shall consist of the structure of a day program defined in 11.8 above, but shall also have a date in month/day of month format assigned to it indicating when it should override the normally operating program.

11.13 Floating exception format shall consist of the structure of a day program defined in 11.8 above, but shall also have a date in month/week of month/day of week format assigned to it indicating when it should override the normally operating program.

11.14 There shall be a copy feature that allows the transfer of entries between programs within the same program level (weekly program to weekly program, day to day, exception to exception).

12.0 COORDINATION CONTROL HIERARCHY

12.1 In the absence of any on-line control by a central computer the internal TBC shall control the coordinated, free, and flash operation of the intersection when no 120 VAC conventional interconnect line inputs are present or when the Interconnect Free input is not present.

12.2 When the interconnect Free input is present and the intersection is not under computer control, the controller unit shall be under control of the master controller TBC.

12.3 When the central computer brings the intersection on-line, via the computer on-line input, its control shall supersede that of the internal time base of external conventional interconnect inputs.

12.4 For non-computerizes applications where conventional 120 VAC interconnect lines are present, it shall be possible to operate the TBC and cabinet interfaces provided both as master for the conventional Cycle, Split, Offset, Free/Flash, and On-line commands from the interconnect line.

13.0 PREEMPTION PROGRAMMING REQUIREMENTS

13.1 The internal preemptor supplied shall be easily programmable from the front panel for either railroad or fire run preemption sequences. Under the fire run (emergency vehicle) requirements there shall be four independent preempts provided.

13.2 Phases shall be selectable such that a limited signal sequence may be operational during preempt (P.E.). It shall be possible to add phases to this special limited sequence, which is not in the intersection sequence. This shall be accomplished without adding external logic.

13.3 The following intervals shall be provided as a minimum. Terminology may vary but the meaning must be clear. Additional unspecified intervals, which may lead to confusion while programming, shall be deleted. All programming of the following intervals of preemption shall be provided on one screen of the controller unit's front panel and shall be menu selected.

TIMING INTERVAL	TIME (Seconds)	INCREMENTS (Seconds)
1. Preempt Delay	0-99	1
2. P.E. Minimum Green	0-9.9	0.1
3. P.E. Yellow	3-9.9	0.1
4. P.E. Red Clearance	0-9.9	0.1
5. Track Green	0-99	1
6. Track Yellow	3-9.9	0.1
7. Track Red	0-9.9	0.1
8. Minimum P.E. Duration (Flash or limited cycle)	0-99	1
9. Return Yellow (Solid Display) (Yellow after limited cycle green)	0-9.9	0.1
10. Return Red Clearance (Red after flash P.E.)	0-9.9	0.1

13.4 The phases to be serviced following the preempt sequence shall be front panel keyboard programmable.

13.5 A minimum of 5 preempt sequences shall be supplied with individual inputs to the controller unit. Preempt priority shall be assigned with 1 (R.R) being the highest. If a higher priority preempt input is received during a preempt sequence the controller unit shall immediately clear to the next all red interval before entering the new sequence. The transition shall take place in a safe manner from any point in the sequence meeting all MUTCD requirements.

13.6 Once the controller unit has entered the first timed interval following Preempt Delay (Interval 1), the sequence shall continue to the end even if the preempt call is dropped. If the call returns or remains through the Minimum Preempt (Interval 7) the controller unit shall remain in this interval until the call is dropped. Preempt call inputs for all preempts shall be programmable to be locking or non-locking on an individual bases.

The controller unit shall be programmable to be in flash or in limited sequence during interval 13.7 If flash is specified, the phases shall flash yellow or red as programmed from the front panel of the controller unit. Flash shall be implemented by alternately flashing even and odd phases through the load switch driver outputs and not by setting the voltage monitor output to false. If limited sequence is selected, all phases shall be programmable even if not normally used in the intersection sequence.

13.8 Timing interval definition. All intervals are sequential.
13.9 Preempt Delay - This time shall start immediately when the preempt command is received. It shall not affect the normal operation of the controller unit until the delay time out occurs. If 0 (zero), time is set for this interval, it will be omitted.
13.10 P.E. Minimum Green - any vehicle signal that is green at the time this interval becomes active shall not terminate unless it has been displayed for at least the time programmed in this interval. WALK/WALK CLR indications shall immediately change to DON'T WALK at the end of this interval. If 0 (zero), time is set the interval shall be omitted.
13.11 P.E. Yellow Clearance - Green signals not programmed as track or fire line signals shall change from green to yellow. Red signals shall not change. Signals displaying yellow at the start of this interval shall remain yellow. All yellows, including those already yellow at the start of this interval, shall display yellow for a minimum of 3 seconds before leaving this interval. WALK/WALK CLR indications shall immediately change to DON'T WALK at the end of this interval.
13.12 Signals programmed as track or fire lane signals, which are yellow, shall remain yellow. Green and Red signals shall not change.
13.14 P.E. Red Clearance - All yellow signals shall change from yellow to red. Red signals shall not change. Green signals shall not change.
13.15 Track Green - Signals programmed as track (or fire lane) signals shall remain green or be changed to green. All other signals shall be red. Intervals 4, 5 and 6 shall be optionally programmable to zero during emergency vehicle P.E.
13.16 Track Yellow - This interval is the Yellow interval for the track (or fire lane) signals. All other signals shall remain red.
13.17 Track Red - This interval provides all red time for clearance of the track or fire lane.
13.18 Minimum P.E. Duration - The preempt sequence shall not terminate until the preempt input signal is removed, and the Minimum Duration time has expired. Each signal shall be keyboard programmable for red, red flash, yellow flash or green. As an alternative, a limited cycle shall be programmed for use with railroad preempts.
13.19 Return Yellow Clearance - This interval shall provide a solid yellow clearance for indications that were green or flashing yellow. Red and flashing red display shall display solid red.
13.20 Return Red Clearance - This interval shall be an all red clearance in preparation for return to normal cycle. Return phases shall be programmable from the keyboard.
13.20 In the event of power interrupt as defined in NEMA Standard Publication TS 1-1983 if the preempt command is present when power is restored, the controller unit shall power up in all red flash operation and remain there until the P.E. command is removed.
13.21 Overlap phases shall begin and terminate with the parent phases as described in NEMA TS 1-1983. If the P.E. call occurs during yellow or red displays between parent phases, the overlap phase shall display a minimum of 3 seconds of yellow and a minimum of 1 second of red clearance.
13.22 Overlaps shall optionally be programmed to go to red if not required during the preempt sequence. Overlaps shall be programmed to flash red or yellow independently of the parent phases. There shall not be supplied any external logic to accomplish this programming.
13.23 DON'T WALK shall be displayed throughout the preempt sequence unless limited cycle is run during Preempt Duration (intervals 2 through 9). During a limited cycle (Interval 7) the pedestrian heads may be programmed to be dark.
Preempt routines shall have priority over all functions except for emergency flash and conflict flash.
13.24.The signal from the conflict monitor shall Stop Time the preempt cycle until removed or reset.

APPENDIX I - CONTROLLERS WITH 57 PIN D (ASSIGNED)

All controllers with a 57 pin AMP 206438-1 chassis mounted connector.

PIN	FUNCTION	PIN	FUNCTION
1	OFFSET 1 IN	33	EXTERNAL ALARM INPUT A (OPTION)
2	CYCLE 2 IN	34	EXTERNAL ALARM INPUT B (OPTION)
3	CYCLE 3 IN	35	CONTROLLER INTERLOCK OUTPUT
4	FLASH IN	36	COMPUTER SELECT 1
5	OFFSET 2 IN	37	COMPUTER SELECT 2
6	OFFSET 3 IN	38	COMPUTER SELECT 3
7	INTERCONNECT FREE	39	SPECIAL FUNCTION 3 OUT
8	SPLIT 2 IN	40	SPECIAL FUNCTION 4 OUT
9	SPLIT 3 IN	41	SPECIAL FUNCTION 5 OUT
10	SPECIAL FUNCTION 2 OUT	42	CABINET INTERLOCK INPUT
11	COMPUTER ON-LINE	43	SPECIAL FUNCTION 1 OUT
12	FORCE 3 PHASE OPERATION	44	SPLIT 3 OUT
13	FORCE 4 PHASE OPERATION	45	SPLIT 2 OUT
14	SEPARATE INTERSECTIONS 2X4	46	INTERCONNECT FREE OUT
15	RESERVED	47	OFFSET 3 OUT
16	EXTERNAL RESYNC INPUT	48	OFFSET 2 OUT
17	MASTER SELECT	49	FLASH OUT
18	SYNC INPUT	50	CYCLE 3 OUT
19	PREEMPT 1 IN (R.R.)	51	CYCLE 2 OUT
20	PREEMPT 2 IN	52	OFFSET 1 OUT
21	PREEMPT 3 IN	53	+24 VOLTS DC
22	PREEMPT 4 IN	54	-24 VOLTS DC
23	PREEMPT 5 IN	55	CHASSIS GND
24	PREEMPT INTERLOCK / ACTIVE	56	RESERVED
25	DETECTOR 45P INPUT / SYSDET 1	57	RESERVED
26	UT / SYSDET 6		
31	DETECTOR CIR. 1B/2P INPUT / SYSDET 7 DETECTOR CIR. 1A INPUT /SYSDET 8 DETECTOR 25S INPUT / SYSDET 2		
27	DETECTOR 18P INPUT / SYSDET 3		
28	DETECTOR 16S INPUT / SYSDET 4		
29	DETECTOR CIR. 2B/1P INPUT / SYSDET 5		
30	DETECTOR CIR. 2A INP		

LIGHT EMITTING DIODE (LED) TRAFFIC SIGNAL MODULES 12" SPECIFICATION FOR MAST ARM AND SPAN WIRE SIGNALS

1. Purpose

The purpose of this specification is to provide the minimum performance requirements for 300 mm (12 in) LED traffic signal modules. An LED signal module shall be capable of replacing the optical unit of an existing vehicle traffic signal section.

2. Physical and Mechanical

LED traffic signal modules designed as retrofit replacements for existing signal lamps shall not require special tools for installation. Retrofit replacement LED signal modules shall fit into existing traffic signal housings built to the VTCSH "Vehicle Traffic Control Signal Heads" standard without modification to the housing.

Installation of a retrofit replacement LED signal module into an existing signal housing shall only require the removal of the existing optical unit components, i.e., lens, lamp module, and gaskets. The LED retrofit replacement shall not require the removal of the reflector; shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring.

3. Construction

The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing traffic signal housing. The power supply must be designed to fit and mount inside the traffic signal module. The unit shall be serviceable and repairable without the use of special tools. The LED module shall be constructed to allow the replacement of the outer lens and/or the light engine when needed. The external lens shall be smooth on the outside to prevent excessive dirt/dust buildup.

The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources per ITE requirements.

4. Environmental Requirements

shall be rated for use in the ambient operating temperature range of -40°C (-40°F) to + 74°C (+165°F).

The LED signal module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991, for Type 4 enclosures to protect all internal LED, electronic, and electrical components.

The LED signal module lens shall be UV stabilized. The external lens shall offer sun phantom protection to reduce driver glare or hot spot in sunlight

5. LED Signal Module Lens

The modules shall be suitable for span wire and mast arm mounted signals. The red, yellow, and green modules shall be similar in appearance and visibility to an incandescent lamp, without the individual LEDs being visible. The red and green modules shall meet the minimum luminous intensity requirements in attached Table 1., Minimum Luminous Intensity for LED Signal Modules. The red and green modules are required to meet luminous values that are 115 percent greater than the required minimum values in the specification at time of production. The yellow modules shall meet Caltrans specifications for light intensity, and all other applicable ITE specifications. The LED arrow module shall have a full, filled profile, without the individual LED's being visible. The arrows shall meet all applicable ITE specifications, and Caltrans specifications on light intensity. Independent laboratory reports shall be supplied to verify modules meet the above requirements.

Option for selected Red Indications

The red LED modules shall include additional photometric performance above ITE requirements to account for LED degradation. Modules will also include a built-in "shut-off" feature, which

will indicate the end of useful life by extinguishing a clearly visible string of LED's in the middle of the module. The shut-off feature will be set to operate when 20% of the additional photometric performance remains active. For example, if a module has built-in additional photometric performance of 50% (i.e. the initial intensity is 150% of the ITE requirement), then the shut-off feature would activate when the intensity of the product is at 110% of the ITE requirement (10% / 50% = 20% of the additional photometric performance).

6. Materials

The multiple LED light source should be the latest technology available on the market. The LED's utilized shall be AlInGaP technology for red, amber and yellow indications, or GaN for green indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C. Materials used for the lens and signal module construction shall conform to ASTM specifications for the materials where applicable.

Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials.

7. Chromaticity

The measured chromaticity coordinates of LED signal modules shall conform to the chromaticity requirements of Section 8.04 and Figure 1 of the VTCSH standard.

8. Electrical

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH standard. Two secured, color-coded, 914 mm (36 in) long 600 V, 20 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection.

The module shall operate on a 60 Hz AC line voltage ranging from 80 volts rms to 135 volts rms with less than 10% light intensity variation. Nominal rated voltage for all measurements shall be 120 ± 3 volts rms. The circuitry shall prevent flickering over this voltage range. The modules shall conform to applicable Energy Star® limitations for energy consumption. .

9. LED Drive Circuitry (Power Supply)

The individual LED light sources shall be wired so that a catastrophic failure of one LED light source will result in the loss of only that one LED light source in the LED signal module. The power supply must be current regulated.

10. Electronic Noise

The LED signal and associated on-board circuitry must meet Federal Communications Commission (FCC) Title 47, Sub-Part B, Section 15 regulations concerning the emission of electronic noise.

11. Power Factor (PF)

The LED signal module shall provide a power factor of 0.90 or greater at 25°C and at the nominal operating voltage.

12. AC Harmonics

Total harmonic distortion (THD), (current and voltage), induced into an ac power line by a signal module shall not exceed 20 percent, over the operating voltage range specified in Section 14 and within the ambient temperature range specified in Section 4.

13. Transient Voltage Protection

The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.6, NEMA Standard TS-2, 1992.

14. Voltage Range

The LED signal module shall operate from a 60 ± 3 HZ ac line power over a voltage range from 80 Vac rms to 135 Vac rms. The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors in signal controller units the procuring traffic authority customer has in use.

15. Signal Module Burn-in

All LED signal modules shall be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, in an ambient temperature of 60°C (+140°F).

16. Design Qualification Testing

Design Qualification testing shall be performed on new LED signal module designs, and when a major design change has been implemented on an existing design.

Testing shall be performed once every 5 years or when the module design or LED technology has been changed. Test data shall be retained by the manufacturer for a minimum period of 5 years.

17. Quality Assurance

LED signal modules shall be manufactured in accordance with a vendor quality assurance (QA) program. The QA program shall include two types of quality assurance: (1) design quality assurance and (2) production quality assurance. The production quality assurance includes statistically controlled routine tests to ensure minimum performance levels of LED signal modules built to meet this specification.

QA process and test results documentation shall be kept on file for a minimum period of seven years.

18. Certificate of Compliance

Manufacturers shall provide a Certificate of Compliance to this specification for each shipment of LED signal modules to an end user. Each LED signal module shall be identified with a serial number. The manufacturer shall be certified by an independent lab to meet applicable ITE standards for red and green. The manufacturer shall also participate in the ETL traffic control equipment certification program.

19. Warranty

Manufacturer will provide the following warranty provisions:

(1) Replacement or repair of an LED signal module that fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery.

(2) Replacement or repair of LED signal modules that exhibit luminous intensity of less than the minimum values specified in Table 1 of ITE specification VTCSH-Part-2 July 1998, within the first 60 months from the date of delivery.

Connected Wattage

Wattage and power savings are critical. The maximum acceptable wattage for the individual retrofits is listed below. Proposed LED retrofit modules, shall be less than or equal to the base wattage shown below.

Retrofit	Wattage
12" Red Ball	10 or less
12" Yellow Ball	22 or less
12" Green Ball	12 or less for clear lens, 14 or less for tinted lens
12" Red Arrow	6 or less
12" Yellow Arrow	10 or less
12" Green Arrow	7 or less

Table 1.
Minimum Luminous Intensity for LED Signal Modules

GRID SPECIFICATION FOR 12IN RED
Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U			3			10	10			3		
12.5U			14			20	20			14		
7.5U			20			54	54			20		
2.5U			58			220	220			58		
2.5D			77	141	251	339	339	251	141	77		
7.5D	16	38	89	145	202	226	226	202	145	89	38	16
12.5D	16	22	34	44	48	50	50	48	44	34	22	16
17.5D	16	20	22	22	22	22	22	22	22	22	20	16
22.5D			7			10	10			7		
27.5D												

GRID SPECIFICATION FOR 12IN GREEN
Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U			7			20	20			7		
12.5U			27			41	41			27		
7.5U			41			108	108			41		
2.5U			115			441	441			115		
2.5D			154	283	501	678	678	501	283	154		
7.5D	32	77	178	291	404	452	452	404	291	178	77	77
12.5D	32	44	69	89	97	101	101	97	89	69	44	44
17.5D	32	41	44	44	44	44	44	44	44	44	41	41
22.5D			14			20	20			14		
27.5D												

Opticom TM Priority Control System (or Approved Equal)
(Optically Activated Traffic Signal Phase Selection System)

Specifications for an Emergency Vehicle Priority System

I. SYSTEM DESCRIPTION

A. The system employs optical communication to identify the presence of designated priority vehicles and cause the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. The matched set of components, which make up the system, will cause the existing traffic controller to be manipulated upon recognition of the signal from the vehicle. This communication is effective to the optical detectors at or near the intersection over a line-of-sight path of up to 1800 feet. The system shall require no action of the vehicle operator other than the operation of the "Emitter ON" switch located in the vehicle. The switch is to remain "ON" until the end of the emergency run. The system shall operate on a first-come, first-served basis or on a selected priority basis. The system shall be designed to

yield to other priority demands such as railroad, draw-bridge, etc. The system shall interface with existing safety provisions. The Priority Control System shall consist of an optical emitter, optical detectors, optical detector cable, and phase selectors.

II. MATCHED SYSTEM COMPONENTS

A. To assure desired performance, the system shall provide the synergy of four principle components, matched and proven through integrated testing and extensive functional experience. The matched component system shall offer compatibility with all types of traffic signal controllers, i.e., electro-mechanical, solid-state. Matched components provide future system compatibility of all priority control elements.

1) Optical Emitter

Shall be a lightweight weatherproof, light-emitting device with internal, regulated, power supply designed to produce high intensity optical energy, from a single source, precisely timed by a crystal controlled circuit.

2) Optical Detector

Shall be a light-weight, weatherproof, adjustable, bi-directional optical detector assembly. Internal circuitry shall transform optical energy from the optical emitter assembly into electrical signals for delivery (up to 1000 feet) via optical detector cable to the phase selection equipment.

3) Optical Detector Cable

Shall be durable, shielded, 3-conductor c able with a drain wire and the necessary electrical characteristics to carry power to the optical detector from the phase selector and to carry the optical detector signal to the phase selector.

4) Phase Selector

This equipment shall interface between the optical detectors and the controller unit and provide the following functions while not compromising the existing fail-safe provisions:

a) Sufficient power to all optical detectors required for the intersection.

b) Suitable sensitivity to the optical detector signal via adjustable range potentiometers.

c) Differentiation of signals by optical detectors from one or more emitters on a first-come, first-served basis.

d) Outputs to signal the controller to cause selection of the desired phase green display for the approaching vehicle.

e) Smooth transaction to non-priority operation upon passage of the vehicle through the intersection.

f) Various phase selector models that take advantage of the phase delivery capability of the variety of traffic controller types.

III. SYSTEM OPERATION

A. Phase selection shall be activated by an optically transmitted signal of 14.035 or 9.639Hz from a single light source or upon the actuation of a test switch or remote call signal to the phase selector.

B. The system shall cause the traffic controller to select from normally available green phases by activation of a combination of its inputs such as, STOP TIME, MANUAL, FORCE OFF, MANUAL CONTROL ENABLE, INTERVAL ADVANCE, PHASE OMIT, and VEHICLE DETECTOR; or, by activating one of several discrete inputs that will cause the controller to execute one of its internal programmable priority phase selection plans.

C. The system shall not require modification or replacement of the existing traffic controller unit beyond adding the necessary system hardware.

D. The system shall provide adjustable timing capability to ensure adequate minimum traffic signal displays when priority control is active. The traffic engineer shall be able to establish the following within the limitations of the traffic controller unit and the timings stated in section IV.D. of this specification:

1) Minimum green times on non-desired greens.

2) Minimum display times of pedestrian WALK and DON'T WALK.

E. The system shall provide for up to 3 optical detectors to be connected to each channel to accomplish the following:

1) To provide adequate optical emitter detection range to allow sufficient time to deliver the desired traffic signal display in accordance with the minimum times required to terminate non-desired traffic signal displays.

2) To provide continuous line-of-sight contact between the optical emitter and the optical detector units.

F. Abnormal sequence of traffic signal displays will not occur.

G. Transitions from green to red without an appropriate yellow change interval will not occur.

H. The system shall cause the controller to deliver the desired traffic signal display even if the optical energy signals are interrupted before the desired display is obtained. This "commit to green" feature may be provided by the priority system or the traffic controller's software.

I. The system shall allow the traffic signal controller to resume normal timing operation after the desired signal display is obtained and optical signals have ceased for an appropriate period.

J. The system shall not attempt controller manipulation nor retain priority vehicle calls during periods of "Intersection Flash" operation.

IV. SYSTEM COMPONENT SPECIFICATIONS

A. Optical Emitter

1) The optical emitter shall include an optical energy emitting unit and emitter control.

2) The optical emitter shall operate over an ambient temperature range of -30°F(-34°C) to up to +140°F(+60°C).

3) The optical energy emitting unit shall contain an internal, regulated power supply to convert 12VDC (positive or negative ground) vehicle battery power to high voltage required for the flashtube and meet the following electrical requirements:

a) t 10 to 15 volts DC.

b) Have internal protection for sustained input voltage up to 25 volts DC.

c) Deliver sufficient optical energy to activate the optical detector up to 1800 feet (549m).

d) Power consumption of less than 40 watts.

4) The optical emitter shall weigh not more than4.5 lbs (9.9kg).

5) The optical emitter shall produce precisely timed pulses of high intensity light from a single light source.

6) The optical emitter shall be controlled by a single ON/OFF switch which requires no warm-up, setting, or adjustments by the vehicle operator.

7) The emitter shall produce crystal controlled optical energy pulses at a rate of 14.035 +/- .255Hz or 9.639 +/- .119H

B. Optical Detector

The optical detector shall be a lightweight, weatherproof device capable of sensing and transforming pulsed optical energy into electrical signals usable by the phase selection equipment.

The unit shall be high-impact polycarbonate construction with non corrosive hardware.

The unit shall be designed for simple mounting t or near an intersection on mast arm, pedestal, pipe, or span wire.

The unit shall accept optical signals from two directions and provide a single electrical output signal.

The unit shall include a design feature to allow aiming of the two optical sensing inputs for skewed approaches or slight curves.

The unit shall have a built-in terminal strip to simplify wiring connections.

The unit shall receive power from the phase selector and be operational from 16 to 40 unregulated DC volts.
The unit shall be responsive to the optical emitter at a distance of 1800 feet (549m).
The unit shall be capable of providing the necessary electrical signal to the phase s elector through up to 1000 feet (305m) of optical detector cable.
The unit shall employ a replaceable circuit board assembly and photocells to facilitate repair.

C. Optical Detector Cable

1) Optical system cable shall be tested and certified by the manufacturer of the priority system components that the cable meets or exceeds matched component system performance.
2) The cable must guarantee delivery of the necessary quality signal form the optical detector to the phase selector over a non-spliced distance of 1000 feet (305m).
3) The cable must guarantee sufficient power to the optical detector over a non-spliced distance of 1000 feet.
4) The cable must be of durable construction to satisfy the following installation methods:
-Direct burial
-Conduit and mast arm pull
-Exposed overhead (supported by messenger wire)
5) The weight must not exceed .04 lbs/ft (65.5 grams/meter).
6) The outside diameter shall not exceed 0.3 inches (7.62mm).
7) The insulation rating must be 600 volts minimum.
8) The temperature rating must be 80°C minimum.
9) The cable shall have 3 conductors of AWG20 (7 x 28) stranded, individually tinned, copper color coded as follows:
-Orange for delivery of optical detector power (+)
-Blue for optical detector power return (-)
-Yellow for optical detector signal
10) The conductors will be shielded with aluminized polyester and have an AWG20 (7 x 28) stranded and individually tinned drain wire to provide signal integrity and transient protection.
11) The shield wrapping shall have a 20% overlap to ensure shield integrity following conduit and mast arm pulls.

D. Phase Selection Equipment

1) The priority control system manufacturer shall offer devices to assure interface with electromechanical controllers, solid-state controllers with or without internal priority control capability, and Type 170 controllers with internal priority control software.
2) All phase selectors, in conjunction with appropriate devices, shall be capable of providing a basic, two channel system with traffic controllers operating up to eight phases. The systems shall be easily expanded to four channel operation by inserting an additional module or adding a phase selector unit. Each phase selector shall contain a power supply to support optical detectors and circuitry to recognize electrical signals from the optical detectors caused by priority equipped vehicles.
a) Phase selector for use with electro-mechanical controllers:
1) Shall have solid-state logic with relay contact outputs.
2) Shall be capable of sensing up to 5 yellow signal displays.
3) Shall sense the desired green phase for each channel.
4) Shall have front panel interval timing selections as follows:
-Green…1 to 10 seconds in 1.0 second increments each channel
-Yellow…1 to 10 seconds in 1.0 second increments each channel
-Shall have a (X2) switch to double timing for both channels
5) Shall have one optical detector input per channel, expandable up to four per channel via an auxiliary detector coupling unit.

6) Shall have recessed range controls to adjust optical sensitivity.
7) Shall have solid-state indicators for:
-Power ON
-"Signal" being received
-Channel "A" or "B" call registered
-"Advance" circuit operation
8) Shall have a test switch which operates to deliver an "A" or "B" channel call.
9) Shall have a switch to enable "Recall" to channel "A" after channel "B" call dropout for efficient resyncronization.
10) Shall have a control for adjusting the pulse width of the advance or manual pulses.
11) Shall have "commit to green" logic to insure delivery of desired green.
12) With additional equipment shall be capable of being disabled during flash or pre-empt (railroad, draw-bridge, etc.) operation.
13) With additional equipment shall be capable of disabling local coordinators during priority calls.
14) With additional equipment shall be capable of informing master controllers or computers that priority calls are being serviced.
15) Shall recognize signals from the optical detector.
16) Shall operate over an ambient temperature range of -30°F(34°to 165°F (74°C).
17) Shall operate over a voltage range of 95VAC to 135VAC, 60Hz.
18) Shall operate over a relative humidity range of 0 to 95%.
19) Shall not exceed the following physical dimensions:
-Length 11.25 inches (29cm)
-Width 3.5 inches (9cm)
-Height 7.25 inches (18.4cm)

b) Phase selector for use with solid-state actuated controllers with or without internal priority control capability:
1) Shall be modular, microprocessor controlled, two channel, four phase, single ring, expandable to four channel, eight phase, four channel, dual ring control.
2) Shall contain traffic signal sensing and output circuitry to direct the controller towards the desired intersection signal displays utilizing existing controller inputs.
3) Shall have crystal controlled optical recognition and timing circuits.
4) Shall be powered fro AC mains and contain an internal, regulated power supply to power optical detectors.
5) Shall be capable of recognizing 14.035 +/- .255Hz pulse rate as delivered by the optical detector.
6) Shall continuously monitor all Green, Walk, and Don't Walk displays for smooth transition from controller to phase selector interval timing.
7) Shall have the following user settable timing available for all monitored displays:
-Green(s)...0 to 9 seconds in 1.0 second increments
-Walk(s)...0 to 9 seconds in 1.0 second increments
-Don't Walk...0 to 9 seconds in 1.0 second increments
- "X2 Green" timing switch to double ped timing an increments
"X2 Ped." timing switch to double ranges and increments
8) Shall have the following user settable switches:
-"Ring Assignment" to match unit to controller configuration
-"Desired Green(s)" for each channel to select from available controller phases
-"Recall Green(s)" to select from available controller phases upon priority call dropout
9) Shall have capability for receiving up to 3 optical detector inputs per channel.

10) Shall have recessed range controls (3 per channel) to independently adjust optical detector signal sensitivity.

11) Shall have the following indicators:

-"Power-On"

-"Fault"

-"Advance"

-"Recall" active

-"Call" for each available channel which will flash during optical call validation and be steady-on during valid call registration and test switch operation.

12) Shall have "Test" switches to verity and Call and Recall delivery functions.

13) Shall have the capability to be disabled during flash or pre-empt.

14) Shall have op-to-isolation on all signal display monitor inputs.

15) Shall monitor 115 volt AC signals or dimmed signals as delivered to the traffic displays.

16) Shall be capable of disabling local coordinators during priority calls.

17) Shall be capable of informing master controllers or computers that priority calls are being serviced.

18) Shall have op-to-isolated auxiliary outputs with relay drive capability which will be active during the following conditions:

-"Unit Active" (a call or recall activity is in progress)

-"Channel Active" (one per available channel)

-"Call Satisfied" (the desired green(s) for the active channel is/are present)

-"Walk Active" (the unit is active and a Walk is being displayed)

-"Ped Clear Active" (the unit is active and a Flashing Don't Walk is being displayed)

19) Shall be intended for interfacing with controllers with nominal 24 volt I/O logic levels and have the following capabilities:

-"Vehicle Calls" (always logic common)

-"Delayed Force-off" (logic common or +24 volts)

-"Stop Time" (logic common or +24 volts)

-"Advance" (logic common or +24 volts)

20) Shall have automatic thermo-resettable optical detector power protection.

21) Shall contain controller manipulation parameters within the unit to allow customization via switch selections and minor wiring variations.

22) Shall properly identify an emitter signal from any combination of up to 9 signals being received simultaneously and asynchronously on any channel.

23) Shall not exceed the following physical dimensions:

-Length 11.25 inches (28.58cm)

-Width 8.75 inches (22.23cm)

-Height 7.05 inches (19.05cm)

c) Phase selector for use with Type 170 traffic controllers.

1) Shall be a plug-in, two channel, dual priority device intended to be installed directly into the input file of Type 170 controllers equipped with priority phase selection software.

2) Shall be powered from AC mains and contain an internal regulated power supply to power optical detectors.

3) Shall be capable of recognizing the following pulse rates as delivered by the optical detectors:

-9.639 +/- .119 Hz as Frequency I

-14.035 +/- .255Hz as Frequency II

4) Primary optical detector inputs and power outputs shall be on the card edge. Two additional detector inputs, per channel, shall be provided via a front panel connector.

5) An op-to isolated output shall provide the following signals to the card edge:

-6.25 +/- .02 Hz pulse in response
to a low frequency signal
-A "Steady-On" in response to a
high frequency signal.

6) Shall utilize crystal controlled timing and optical pulse rate recognition circuitry to assure:

-Accurate optical signal
recognition (dual frequencies)
-Synchronous logic
-Precise output pulse
-Accurate call drop-out time

7) Shall have six recessed range controls per channel, three per frequency, to independently adjust optical sensitivity.

8) Shall have a solid-state "Power-On" indicator.

9) Shall have a "Frequency I" and "Frequency II" solid-state indicator for each channel which performs as follows:

-Flashing during call validation
-Be steady-on when processing a valid call and during test switch operation

10) Shall have a test switch for each channel to deliver Frequency I or Frequency II signal pulse rates to verify proper function at both optical emitter flash rates, first-come, first-served operation, and Frequency II override capability.

11) Shall have a selectable call dropout time of 5 seconds (10 seconds optional) –0 to +2.5%.

12) Shall properly identify a Frequency II demand with any combination of up to 10 high and low priority emitter signals being received simultaneously and asynchronously on either channel.

13) Shall not exceed the following dimensions:

-Length (including handle) 7.91 inches (200.7mm)
-Width 1.11 inches (29.18mm)
-Height 4.50 inches (114.3mm)

V. RELIABILITY

A. All equipment supplied as part of the optical priority remote traffic control system intended for use in the controller cabinet shall meet the electrical and environmental specifications spelled out in the NEMA standards publication TSI – 1983 part 2:

1) Line voltage variations per NEMA TS1-2.1.2

Power source frequency per NEMA TS1-2.1.3

3) Primary power interruptions per NEMA TS1-2.1.04.A.1

4) Power source noise transients per NEMA TS1-2.1.6.1

5) Power source high energy transients per NEMA TS1-2.1.6.2

6) Nondestruct transient immunity per NEMA TS1-2.1.8

7) Input-Output noise immunity per NEMA TS1-2.1.7

8) Temperature range per NEMA TS1-2.1.5.1

9) Humidity per NEMA TS1-2.1.5.2

10) Shock test per NEMA TS1-2.1.13

11) Vibration per NEMA TS1-2.1.12

B. All equipment supplied as part of the priority control system intended for use in or on emergency vehicles shall operate properly under any combination of the following environmental conditions.

1) Temperature range: -30°F (-34°C) to +140°F (+60°C)
2) Relative Humidity: 0 to 95%
3) Vehicle battery voltage: 10 to 15 volts

VI. QUALIFICATIONS

A. The manufacturer shall verify the proven, safe operation of the system's optical communication technology. A list of twenty (20) user agencies having two (2) years or more experience interfacing priority control equipment with electro-mechanical, solid-state, and programmable controller types must be provided upon request.

B. The manufacturer must also demonstrate the ability to finance on-going technical support, product warranties, and responsibility for product failure. A copy of the manufacturer's last full year and four previous year's corporate financial statements must be provided upon request.

C. The manufacturer shall have an independent quality department that has complete authority to control product integrity and is answerable only to the senior officer of the organization.

D. The manufacturer shall operate according to documented quality systems that have been inspected and approved by a regulatory agency of the U.S. Government.

VII. RESPONSIBILITIES

A. The manufacturer and/or the manufacturer's representatives shall provide quality service before, during, and after installation of the priority control system. The manufacturer and/or the manufacturer's representative, as consultants to the installer, must provide certified trained technicians having traffic systems industry experience and operational knowledge of priority control systems.

B. Prior to bid/quote activity, the manufacturer or its authorized representative shall be required to conduct field surveys of intersection control equipment to determine the most appropriate phase selection device for each location and to recommend locations for installing optical detectors.

C. After an award, the manufacturer or its authorized representative shall be responsible for system documentation including the following:

1) Acquire all relevant controller information.
2) Determine the number of vehicle phases (greens).
3) Determine the desired greens for priority approaches.
4) Determine ring configuration of each controller.
5) Establish pedestrian phase timing requirements.
6) Establish minimum green times for non-priority phases.
7) Establish the manipulation method of eachcontroller type.
8) Supply interface information to installer.
9) Assist in system checkout prior to purchaser's acceptance by:
   -Verifying proper installation per recommended interfaces
   -Verifying that optical ranges are properly set
   -Verifying that phase selector timings or controller software timings are properly set

System checkout requirements when using the plug-in version of phase selector must include verification that when two plug-in units are used, the controller must recognize high frequency over low frequency and first-come, first-served. All possible conditions of priority control must be considered. This may require software and/or hardware changes in the traffic controller. Software and programming shall be the responsibility of the purchasing/using agency.

10) Instruct emergency vehicle operators or their representatives in the operation of the system. Instruction shall include introductory training, periodic training updates, and a leave-behind audio visual self instruction course for on-going training.
11) Instruct maintenance personnel in routine maintenance of the system.
12) Manufacturer's technical support shall include technical service, design engineering, manufacturing engineering, and research engineering for system development, process management of priority control components, and for in-depth training of system users.

VIII. GUARANTEED WARRANTY

A. Manufacturer shall warrant that, provided the priority control system has been properly installed, operated and maintained, component parts of a matched component system (see Section II) that prove to be defective in workmanship and/or material during the first ten (10) years from date of shipment from manufacturer shall be covered in a documented system protection plan.

Guaranteed warranty substantiates the manufacturer's financial ability to process warranty claims. This guarantee shall be determined in reference to the manufacturer's business assets and financial experience over the preceding five (5) year period.

B. In addition, upon request, the manufacturer shall provide documentation proving ability to financially support the ten (10) year provisions of the warranty. Documentation shall include appropriate financial reports for the previous five (5) business years.

C. The protection plan shall warrant that component parts, of a matched component system, that prove to be defective in workmanship and/or material during the first five (5) years from date of shipment from manufacturer will be repaired at no charge and that extended coverage with a fixed repair deductible will be available for an additional five (5) years.

D. In total, the warranty coverage must assure ten year operational reliability and interface compatibility with future components designed for the system.

E. A copy of the manufacturer's warranty outlining the conditions stated above shall be supplied with bid.

F. Warranties of existing opticom equipment not to be voided.

IX. CERTIFICATE OF INSURANCE

A. The manufacturer shall provide a certificate of insurance protection for $5,000,000. This certificate assures the priority control user that the manufacturer is insured against civil damages if proven to be a fault for an accident due to equipment failure within the system of matched priority control components. This certificate, however, need not, and is not meant to, provide liability insurance protection to the priority control system user.

X. USER SUPPPORT SERVICES

A. The manufacturer shall offer support programs to assist the purchase an implementation of a priority control system program including:
1) Preferred lease program to finance purchase of a system.
2) Public relations assistance to promote the system within the user community.
3) Intersection survey service to document appropriate equipment interfaces.
4) Custom designed proposals to assist the procurement process.

XI. CERTIFICATION

The manufacturer of the priority control system shall certify that al component products are designed, manufactured, and tested as a system of matched components and will meet or exceed the requirements of this specification.

ITEM S-001, IMPACT ATTENUATORS (CONSTRUCTION ZONE) (09/07): This item consists of furnishing, installing, maintaining and subsequently removing the device shown on the plans in accordance with manufacturer's recommendations, the directions of the engineer and the following requirements.

Impact attenuators shall be either the Kinetic or the inertial type, as shown on the plans. If the plans do not specify any particular type, either type may be installed, provided that the physical conditions of the roadway allow their application. Attenuators must have been successfully crash tested and conform to the requirements of NCHRP 350, Test Level 3. The contractor shall submit information on the type, size and the manufacturer of the attenuator he intends to use to the Project Engineer for forwarding to the Bridge Design Section for review and approval.

Impact attenuators shall be installed and maintained in good operational condition by qualified personnel until they are no longer required on the project and the engineer approves their removal.

All impact attenuators shall become the property of the contractor and removed upon completion of the project.

Payment for Impact Attenuator (Construction Zone) will be made at the contract unit price per each.

Item S-001, Impact Attenuators (Construction Zone), per each.

ITEM S-002, CLEANING EXISTING CULVERTS: This item consists of cleaning designated existing culverts of soil, debris and other materials to the invert elevation of the culvert in accordance with the following requirements.

Designated culverts shall be cleaned by approved methods that will not damage the culverts. Any damage caused by the contractor's operations shall be satisfactorily repaired at no direct pay.

Removed soil, debris and other materials shall be disposed of in accordance with Subsection 202.02 or as otherwise approved in writing.

Cleaning existing culverts will be measured by the linear foot of culvert cleaned and accepted.

Payment will be made at the contract unit price under:

Item S-002, Cleaning Existing Culverts, per linear foot.

ITEM S-003, VIBRATION MONITORING: The contractor shall obtain and pay for the services of a testing lab acceptable to the Engineer to conduct seismic monitoring of vibrations during the pile driving operations. The lab shall employ the services of a vibration specialist engineer who in conjunction with the lab shall render complete reports and interpretations of the data obtained including the possible effects of the measured vibrations on adjacent and surrounding structures. The vibrations shall be measured by means of a portable seismograph which directly measures particle velocity (rate of ground movement) in three mutual perpendicular directions (longitudinal, transverse, and vertical). Monitoring probes shall be located at various locations as directed by the vibration specialist engineer. If peak particle velocity levels exceed 0.1 inches per second at historic structures or 0.25 inches per second at non-historic structures, the contractor shall terminate driving operations and notify the Engineer. The Engineer shall make a determination before proceeding with construction. In addition to daily reports, a complete report of the vibration study, including seismographs, shall be furnished to the Engineer upon conclusion of the driving of all piles.

Payment will be made under;

Item S-003, Vibration Monitoring, per hour.

ITEM S-005, SHEET PILE: This item shall consist of providing continuous steel sheet piling with sufficient section to protect the existing subbase and base of the roadway in accordance with plan details, project specifications and as directed by the engineer.

Sheet Pile will be measured by the linear foot and payment will be made at contract unit price per linear foot.

Payment will be made under:

Item S-005, Sheet Pile, per linear foot.

ITEM S-007, SAW CUTTING (1/2" DEPTH): This item consists of the saw cutting of exiting concrete slabs ½ inch deep at the locations shown in the plans and as directed by the engineer. The cut is to be such that the exiting slab reinforcement is not damaged at the saw cut location, if so, it will be replaced at no direct pay.

Saw Cutting (1/2" Depth) will be measured per linear foot.

Payment will be made under:

Item S-007, Saw Cutting (1/2" Depth), per linear foot.

ITEM S-007-A, SAW CUTTING (1" DEPTH): This item consists of the saw cutting of exiting concrete slabs 1 inch deep at the locations shown in the plans and as directed by the engineer. The cut is to be such that the exiting slab reinforcement is not damaged at the saw cut location, if so, it will be replaced at no direct pay.

Saw Cutting (1" Depth) will be measured per linear foot.

Payment will be made under:

Item S-007-A, Saw Cutting (1" Depth), per linear foot.

ITEMS S-008-A THROUGH S-014:
SPECIFICATIONS FOR THE MATERIALS AND INSTALLATION OF A TRAFFIC SIGNAL SYSTEM PER JEFFERSON PARISH TRAFFIC ENGINEERING DIVISION STANDARDS

SECTION I: SCOPE OF WORK TO BE PERFORMED:

As shown on the drawings, the contractor shall furnish all labor, equipment, and material necessary to install the following:

Item S-008-A, One inch (1") PVC conduit in earth.
Item S-008-B, Two inch (2") PVC conduit in earth.
Item S-008-C, Three inch (3") PVC conduit in earth.
Item S-009, Traffic Manhole(s) as per attached drawing. Manhole covers to be marked "TRAFFIC".
Item S-011, Vehicle loop detectors cut in the roadway and measured as per attached drawings.
Item S-012-A, Type A one-way, three section, signal heads mounted on mast arms with mast arm mounting brackets as per attached drawings, complete with backplates.
Item S-012-B, Type B one-way, three section, signal heads mounted on mast arms with mast arm mounting brackets as per attached drawings, complete with backplates.
Item S-012-C, Type A one-way, three section, signal heads complete with slip-fitters for mounting on pedestals.
Item S-013, Priority control equipment as noted on drawings and in section III H of these specifications.
Item S-013-A, Cable (2c #14 AWG, 600V, with outer shield).
Item S-013-B, Cable (5c #14 AWG, 600V).
Item S-013-C, Cable (7c #14 AWG, 600V).

Item S-013-D, Cable (12c #19 AWG, 600v) (with outer shield).
Item S-014, Traffic signal pedestal pole and foundation(s) with ten-foot (10') ground rod.

MATERIAL AND SIGNAL EQUIPMENT SUBMITTAL: All material and signal equipment to be purchased and used by the contractor for construction of this project shall be submitted to the Engineer and Jefferson Parish Traffic Engineering Division for approval.

SECTION II. DETAILS:

After notification of awarding of the contract and prior to construction and equipment purchase, the Engineer with the Jefferson Parish Traffic Engineering Division shall call a pre-construction meeting. Attendees of the pre-construction meeting shall include the Jefferson Parish Traffic Engineering Division Signal Supervisor, the Electrical Contractor, the DOTD Project Coordinator/Engineer, and the Jefferson Parish Traffic Engineering Division Project Coordinator/Engineer.

The contract drawings show the APPROXIMATE location of all PARISH UTILITIES, i.e.: water, drainage, sewerage. Additionally, the location of the signal poles on the signal plan are such to avoid conflict with these utilities. It is the contractor's responsibility to contact DOTTIE and other service providers (Entergy, Cox Communications, etc.) to have all utilities located BEFORE holes are augered and piles driven. Should there be a conflict with the location of a signal pole during the auguring process, the contractor shall halt all construction regarding the subject pole, and call the Engineer and Traffic Engineering Office to have the Signal Supervisor find another suitable location for the subject signal pole.

If specifically noted within these specifications that utilities are to be relocated in order to facilitate the installation of the proposed signal equipment, the contractor shall be responsible for payment of the necessary utility adjustments, relocations, etc. These should be included in the cost of the project. Special attention should be given to any overhead electric lines which may have to be de-energized during construction since Entergy may charge for this service. Costs for this service should be included in this contract. No extra payment will be made for this charge to the contractor.

The contractor shall secure all necessary permits and/or inspections of the Jefferson Parish Inspection and Code Enforcement Department. It is the responsibility of the contractor to adhere to all Jefferson Parish ordinances, and NEC codes for electrical installation.

The contractor shall follow all Jefferson Parish Department of Public Works procedures and requirements for boring and street cutting operations.

The contractor shall restore areas of soil, sod and other plantings to their original state. The contractor shall repair all sidewalks, driveways, roadways, etc., which are damaged due to signal construction.

The contractor shall be responsible for providing safe and expeditious movement of traffic through the construction zones for the duration of the construction period. This shall include but not be limited to the installation and maintenance of such items as proper construction warning signs, signals, lighting devices, markings, barricades, channelization, and hand signaling devices (flagging operations) as prescribed and set forth in Part VI of the current Manual on Uniform Traffic Control Devices as revised. The contractor shall provide a traffic control device plan for review by the Engineer and Jefferson Parish Traffic Engineering Division prior to the start of construction. The Traffic Control Device Plan shall be submitted at the pre-construction meeting to be arranged by the contractor prior to beginning any construction. Additionally, the contractor shall provide sufficient notification (at least 48 hours) to the Engineer and Jefferson Parish Traffic Engineering Division of the necessity to close any portion of the roadway carrying vehicles or pedestrians. At no time will more than one lane of a roadway be closed to vehicles or pedestrians. With any such closings, adequate provision shall be made for the safe expeditious

movement of each. The contractor shall be responsible for removal, relocation, and/or replacement of any traffic control device in the construction area, which exists as part of the normal pre-construction traffic control scheme. Any such actions shall be performed by the contractor under the supervision, and in accordance with the specifications of the Traffic Engineering Division unless otherwise specified. The contractor should consult with the Engineer and Traffic Engineering Division immediately on any vehicular or pedestrian safety or efficiency problem incurred as a result of construction of the project.
All turns in PVC conduit to be made with thirty-six inch (36") long sweep elbows unless otherwise specified by the Engineer and Traffic Engineering Division.
Standard elbows shall be used when entering all pull boxes.
Long sweep PVC elbows to be used when entering all foundations.
All signal cable to be continuous and unspliced from controller cabinet to appropriate transformer base. *NOTE: NO SPLICES ARE TO BE MADE IN STRAIN POLES OR CONDUIT UNDER ANY CIRCUMSTANCES.
One complete loop of cable shall be installed in all manholes, pull boxes, and transformer bases. The size of the loop shall be approximately equivalent to the inner diameter of the enclosure (i.e. pull box, manhole, etc.)
All signal heads to be completely covered with sacks and secured at all times until signal are in operation.

Exact horizontal and vertical location of all traffic signal heads, foundations, and detectors to be as specified by the Engineer and Traffic Engineering Division.
Curbing is not to be cut when installing loop detectors.
All controller and cabinet electrical connections necessary for turn-on to be made by Jefferson Parish Traffic Engineering Division.
All cabinet keys to be delivered to the Engineer and Traffic Engineering Division upon completion of the project.
All PVC conduits installed in mast arm foundations, cabinet foundations, pedestal foundations, and/or pull boxes shall include a bell-end or other appropriate bushing installed on the exposed end entering the fixture (i.e. transformer base, pull box, cabinet, etc.)

SECTION III. MATERIAL/EQUIPMENT/INSTALLATION INSTRUCTIONS:
The contractor shall furnish and install as required on the drawings:
All conduit as shown on the attached drawings as follows:
All schedule #40 polyvinyl chloride conduit (PVC) and fittings as shown on drawings, and noted in Section I for underground installation.
All joints shall be solvent welded and watertight.
Conduit to be installed a minimum of three feet (3') below grade, unless otherwise specified by the Engineer and Traffic Engineering Division. When boring operations are employed, the contractor shall bore from one side of the roadway to the other. All excavations on side of roadway to be restored to their original condition.
Quazite Nestable Round Manhole(s) (Part No. LR2732BA36) or approved equal, as per attached drawing complete with covers marked "TRAFFIC". Covers shall be Heavy Duty and comprised of a skid resistant surface rated for no less than 15,000 pounds over a 10" square with a minimum applied test load of 12,000 pounds. The cover shall be secured to the enclosure using three 3/8-16 UNC stainless steel hex head bolts with washers. A minimum of six inches of gravel shall be installed in earth prior to setting the manholes. The gravel bed shall also extend two inches (2") beyond the walls of the manholes.
Service boxes (14" X 14" X 12.75") shall be Composolite as manufactured by Quazite Corporation (Part No. PC1212BA12 with PC1212CA00 cover) or approved equal. Enclosures

and covers shall be concrete gray color and rated for no less than 5000 pounds over a 10" X 10" area and be designed and tested to temperatures of –50 degrees Fahrenheit. Material compressive strength should be no less than 11000 psi. Covers shall be marked "TRAFFIC SIGNAL" and have a minimum coefficient of friction of 0.5. Covers to be attached using hex-head stainless steel bolts. Boxes to be stackable for extra depth. A minimum of six inches of gravel shall be installed in earth prior to setting the pull box. The gravel bed shall also extend two inches (2") beyond the walls of the box.

Service boxes (32.25" X 19.25" X 18") shall be Composolite as manufactured by Quazite Corporation (Part No. PG1730BA18 with PG1730ha00 cover) or approved equal. Enclosures and covers shall be concrete gray color and rated for no less than 5000 pounds over a 10" X 10" area and be designed and tested to temperatures of –50 degrees Fahrenheit. Material compressive strength should be no less than 11,000 psi. Covers shall be marked "TRAFFIC SIGNAL" and have a minimum coefficient of friction of 0.5. Covers to be attached using hex-head stainless steel bolts. Boxes to be stackable for extra depth. A minimum of six inches of gravel shall be installed in earth prior to setting the pull box. The gravel bed shall also extend two inches (2") beyond the walls of the box.

Electrical service to controller, signals and detectors to include:

Approximately thirty feet (30') of one and one-half inch (1-1/2" I.D.) rigid aluminum service conduit and fittings from the ground to the point of connection to the service drop conductors. Service conduit shall be equipped with a raintight service head. The service head shall have conductors of different potential brought out through separately bushed openings. All service conduit to be secured to the utility pole with stainless steel straps. The PVC conduit is to connect to the service conduit four inches (4") below grade at the base of the utility pole and a PVC pipe adapter is to be solvent welded to the PVC conduit. The one and one-half inch (1-1/2") rigid aluminum conduit is to extend to grade, connect through a one and one-half inch (1-1/2") "Type C" rigid aluminum conduit outlet body, and extend to the bottom of the load center.

Grounding shall be done in accordance with guidelines set forth in the Jefferson Parish code of ordinances, and current edition of the NEC.

One (1) electric meter socket. (3 wire 120/240 volt)

One (1) Square D #Q02-4L70RB load center and two (2) Square D #QO140 circuit breakers with Visi-Trip indicator. Note: Load center to be wired as 120/240 volt and shall include an electrode-grounding conductor as required by Jefferson Parish ordinances, and current NEC guidelines.

All service-entrance conductors and all feeder conductors shall be #8 AWG with one of the following types of insulation: THHN, THWN, RHH, RHW, USE.

The contractor is to use #12 AWG wire, IMSA specification No. 19-1 on traffic signal cable, stranded throughout, and color coded throughout the system from the master controller to the signal heads as follows:

CONDUCTOR COLOR CODING

CAUSEWAY BLVD. / VETERANS BLVD.

CABLE 1 7-CONDUCTOR 1" YELLOW TAPE

PHASE	SIGNAL COLOR	SIGNAL NO.	COLOR CODE
4	RED	1,2,29	RED
4	YELLOW	1,2,29	ORANGE
4	GREEN	1,2,29	GREEN
OLA	RED	15,16,17,18	BLACK
OLA	YELLOW	15,16,17,18	WHITE/BLACK
OLA	GREEN	15,16,17,18	BLUE
COMMON			WHITE

CABLE 2 7-CONDUCTOR 1" WHITE TAPE

PHASE	SIGNAL COLOR	SIGNAL NO.	COLOR CODE
6	RED	21,22,30	RED
6	YELLOW	21,22,30	ORANGE
6	GREEN	21,22,30	GREEN
OLC	RED	3,4	BLACK
OLC	YELLOW	3,4	WHITE/BLACK
OLC	GREEN	3,4	BLUE
COMMON			WHITE

CABLE 3 5-CONDUCTOR 1" RED TAPE

PHASE	SIGNAL COLOR	SIGNAL NO.	COLOR CODE
6	RED	19,20	RED
6	YELLOW	19,20	ORANGE
6	GREEN	19,20	GREEN
COMMON			WHITE
SPARE			BLACK

CAUSEWAY BLVD. / 22ND ST.

CABLE 1 7-CONDUCTOR 1" RED TAPE

PHASE	SIGNAL COLOR	SIGNAL NO.	COLOR CODE
2	RED	1,2,14	RED
2	YELLOW	1,2,14	ORANGE
2	GREEN	1,2,14	GREEN
4	RED	10,11	BLACK
4	YELLOW	10,11	WHITE/BLACK
4	GREEN	10,11	BLUE
COMMON			WHITE

Outer casing of each cable to be color coded by wrapping a one inch (1") wide colored band of Mystic tape around each of the cables, as per above chart. The cable shall be marked with tape on each end.

Contractor shall contact Jefferson Parish Traffic Engineering and verify tape color schemes prior to installation.

#12 AWG stranded type XHHW wire is to be used for loop detectors shown on print. As per attached sketch, all vehicle loop detectors to have three (3) turns and each loop detector to be made with a continuous (unspliced) wire from the pull box throughout the loop. NOTE: Presence loops are to be wound separate and independent of each other as per attached detail. All four independent loops are to be connected in parallel configuration to one lead-in cable within the pull box. Paired polyethylene insulated, polyethylene jacketed IMSA #50-2 communication cable with electrical shielding to be used from the control cabinet to the pull boxes and grounded at the controller end.

Ruscoe #983 Traffic Detector loop sealant, Preco Gold Label Flex 1P loop sealant, 3M Brand loop sealant, or Safety Coatings Loop Guard Four loop detector sealant shall be used to seal loop wires in roadway.

The Contractor is to use 3M Co. No. 20002 #18 spiral four pair shielded polyethylene insulated, polyvinyl-jacketed cable between all microwave detectors and detector panel within the control cabinet.

The outer casing of each detector lead-in cable to be color coded by wrapping a one inch (1") wide colored band of Mystic tape around each of the cables, and on each end of the cables as per the following chart:

CAUSEWAY BLVD. / VETERANS BLVD.

DETECTOR ZONE	COLOR
L-4A	YELLOW
L-4B	YELLOW/WHITE
L-2	WHITE

CAUSEWAY BLVD. / 22ND ST.

DETECTOR ZONE	COLOR
L-2	RED
L-4	RED/WHITE
L-5A	GREEN
L-5B	GREEN/WHITE

Contractor shall contact Jefferson Parish Traffic Engineering and verify tape color schemes prior to installation.
The Contractor is to use a voice grade twisted six (6) pair copper shielded wire, #19 AWG IMSA Specifications No. 20 for hardwire interconnect cable
For underground hardwire interconnect:
A voice grade twisted six (6) pair copper shielded wire, #19 AWG IMSA Specifications No. 20-2, polyethylene jacketed cable..
For overhead hardwire interconnect:
A voice grade twisted six (6) pair shielded wire, #19 AWG IMSA Specifications No.20-4, paired polyethylene-insulated, polyethylene jacketed, integral messenger communication cable is to be run in conduit, strain poles and attached to utility poles as per attached drawings with mounting hardware as specified.
Cable to be secured to the wood utility poles by using Joslyn #J2235 "Figure 8" cable hangers on utility poles with all bolts to be three inches (3") longer than pole diameters and having two (2) square nuts. Steel strain pole securing shall be by using #R5100 ¼ universal strandvises or Joslyn #2235 cable hanger attached to strain pole clamps.
A minimum cable "sag" shall be 3-5% of span length from pole to pole.
Overhead cable shall be minimum of eighteen feet (18') from ground to maximum point of "sag".
The transition from overhead to underground interconnect is to be done by installing twenty feet (20') of two inch (2" I.D.) rigid aluminum conduit on a wood utility pole next to large service box. Conduit shall be equipped with a raintight service head. All conduit to be secured to the utility pole with stainless steel straps. The PVC conduit is to connect to the aluminum conduit four inches (4") below grade at the base of the utility pole and a PVC pipe adapter is to be solvent welded to the PVC conduit.
Each pole and controller foundation to include one (1) ten-foot (10') ground rod
All foundations for the mast arm assemblies and controller as per attached sketches. Foundations shall be twenty-five hundred (2,500) pound concrete mix. Top of foundation to be as shown on sketches. A lower elevation may be requested. Anchor bolts furnished with assemblies shall be installed according to manufacturer's specifications prior to pouring of concrete. Only hexagonal nuts shall be used to secure the signal pole to the foundation. All PVC elbows to extend two inches (2") above the top of the foundation, and

shall include a bell-end or other appropriate bushing. Concrete to be tamped while pouring and allowed to cure a minimum of seven (7) days before installation of the signal assembly.
Pedestal foundations shall installed per the drawings. All PVC elbows to extend two inches (2") above the top and in the center of the foundation, and shall include a bell-end or other appropriate bushing. The foundation(s) shall each include a ten-foot (10') ground rod.
Mast Arm foundations will each require a forty-foot (40') long creosote woodpile ASTM 25-73 MP-2, with a butt circumference of approximately 44" (14" diameter). All foundations requiring piles to be augered prior to pile installation. All PVC elbows to extend two inches (2") above the top and in the center of the foundation, and shall include a bell-end or other appropriate bushing. The foundation(s) shall each include a ten-foot (10') ground rod.
All signal pole assemblies as follows:
Pedestal poles shall be Signal Engineering Inc. # SE-120 4-1/2" OD extruded aluminum shafts with #1660-A bases and foundations or approved equal. Pedestals to have 12-position, 24 terminal, terminal blocks on the base doors. Pedestal bases to be round. The base and shaft of the pedestal pole shall be threaded to match, and shall provide for attachment of equipment-grounding conductor as per Jefferson Parish ordinances, and current NEC guidelines. Only hexagonal nuts are to be used in securing the pedestal pole to the foundation.

Jemco cantilever standard mast arm assembly(s) including shafts, arms, and transformer bases. The transformer base shall allow attachment of an equipment-grounding conductor as per Jefferson Parish ordinances, and current NEC guidelines. Mast arm sizes to be provided as indicated on the drawings.
10' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 10'. (Part No. JIC – 10)
15' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 15'. (Part No. JIC – 15)
20' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 20'. (Part No. JIC – 20)
25' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 25'. (Part No. JIC – 25)
30' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 30'. (Part No. JIC – 30)
35' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 35'. (Part No. JIC – 35)
40' mast arm(s) with shaft dimensions and arm dimensions as per attached detail; arm length 40'. (Part No. JIC – 40)
45' mast arm with shaft dimensions and arm dimensions as per attached detail. Arm length to be 45' comprised of two sections: primary section 37' length, secondary section 9' length, as per attached detail. (Part No. JIC – 45)
50' mast arm(s) with shaft dimensions and arm dimensions as per attached detail. Arm length to be 50' comprised of two sections: primary section 32' length, secondary section 20' length, as per attached detail. (Part No. JIC – 50)
Jemco cantilever standard double mast arm assembly(s) including shafts, primary arms, clamp-on arms, and transformer base. The transformer base shall allow attachment of an equipment-grounding conductor as per Jefferson Parish ordinances and current NEC guidelines. Mast arm sizes to be provided as indicated on the drawings.
10' X double mast arm(s) with primary arm length 10', and clamp-on arm length with dimensions as per attached detail. (Part No. LA-10/)
15' X double mast arm(s) with primary arm length 15' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-15/)

20' X double mast arm(s) with primary arm length 20' and clamp-on arm length with dimensions as per attached detail. (Part no. LA-20/)
25' X double mast arm(s) with primary arm length 25' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-25/)
30' X double mast arm(s) with primary arm length 30' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-30/)
35' X double mast arm(s) with primary arm length 35' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-35/)
40'X double mast arm(s) with primary arm length 40' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-40/)
45' X double mast arm(s) with primary arm length 45' and clamp-on arm length with dimensions as per attached detail. (Part No. LA-45/)
Holes to be provided for appropriate connection to signals on arms and shafts. Hole in pole shaft for side mount signals to be drilled 1" minimum diameter. Hole shall be filed to remove any metal burrs. A bushing or grommet shall be installed in any drilled hole on the mast arm. All parts of assemblies to be hot dipped galvanized.

All signal heads and lamps as follows:
All signal heads to be dark green with fittings as follows:
SECO #S12A31 one-way, three section, 12" ploycarbonate traffic signal heads with cap visors and SECO Series 40 model CM-42-3M mid-mast arm mounting brackets with 14" arms and backplates or approved equal.
The top of the brackets shall be blank or fitted with a weatherproof plug cap unless otherwise specified.
The reflectors shall be alzak aluminum. The lamp sockets shall provide a means whereby it shall be possible to position the open end of the lamp filament in any desired position without the use of tools or without the disassembly of any components. The reflector shall be mounted in a separate polycarbonate hinged ring with neoprene reflector ring.
Each signal face shall be provided with a terminal strip equipped with a spare connector for connecting to the individual lamp socket leads.
Aluminum signal brackets and hardware shall be furnished with one coat of primer and two individual coats of dark green enamel.
Inside of all signal visors to be finished in dull (non-reflective) black.
All traffic signal heads and mounting hardware to use tri-stud or mono-stud connections. Studs to be 5/16: diameter with 18 threads per inch.
Mounting brackets shall be of one piece cast aluminum construction and shall provide for tri-stud connection to the signal sections.
All traffic signal heads to be fully equipped with Duro-Test 135 watt lamps (16,000 hours / two years) or approved equal.
All traffic signal heads to be fully equipped with Gel core LED lenses, or approved equal, as indicated below. The Contractor shall supply and install the lenses.

SIGNAL TYPE	TYPE LENS	PART NUMBER
Type A & B	12" RED BALL	DR6-RTFB-20A-40
Type A	12" YELLOW BALL	DR6-YTFB-20A-40
Type A	12" GREEN BALL	DR6-GCFB-20A-40
Type B	12" YELLOW ARROW	DR6-YTAAN-21A
Type B	12" GREEN ARROW	DR6-GCAAN-21A

All controller and related cabinet equipment as follows:
One (1) Kentronics, Inc. Model KMT1880 LCD TS 1/2 eight phase, fully expanded, solid state, fully actuated, digital timing, NEMA Standard, with integrated internal time base coordination, and Type M cabinet for mounting on mast arm, or approved equal. Access for signal cable and electrical service to be formed by using a two and one half inch (2-1/2" I.D.) type "LB" rigid aluminum conduit outlet body, and two (2) two and one half inch (2-1/2" I.D.) close nipples, (one threaded into the bottom of the control cabinet, and one threaded into the specified access on the mast arm shaft). Programming of controller to recall Period I and operate with phasing as per attached plan to be performed by Jefferson Parish Traffic Engineering Division.
Flashing sequence must cause all signal heads to flash red.
One (1) Kentronics, Inc. Model KMT1880 LCD TS 1/2 eight (8) phase, fully expanded, solid state, fully actuated, digital timing, NEMA Standard, with integrated internal time base coordination controller, and type P cabinet and related equipment to meet the attached specifications, or approved equal. Programming of controller to recall Period I and operate with phasing as per attached plan to be performed by Jefferson Parish Traffic Engineering Division.
Flashing sequence must cause all signal heads to flash red.
NOTE: Controller, cabinet, and related equipment will be shop-tested by Jefferson Parish Traffic Engineering Division prior to field installation. Upon completion of testing period (two weeks after delivery), and once the cabinet foundation is prepared for cabinet installation, the contractor will pick up the cabinet (without controller), deliver it to the job site, and install it upon the appropriate foundation under supervision of Jefferson Parish Traffic Engineering Division.
EDI model #LM 302t, two-channel digital loop detectors, or approved equal, for detection zones:
Not Used
One (1) EDI Model SSM-12LEPR NEMA Conflict Monitor, or approved equal.
The following signal equipment to be supplied for the signal priority control:
Six (6) 3-M Co. Optical Detectors Model No. 711, or approved equal.
Detectors to be equipped with Pelco Astro-mini-bracket with ¾" – 14 NPT threads and 29" bands for mounting on mast arms, part No. AB-0155-29-ALO, or approved equal.
Not Used
Not Used.
Three (3) 3-M Co. #138 Optical Detector Cable, (1,000 feet per roll), or approved equal.

SECTION IV: MEASUREMENT AND PAYMENT:
Measurement.

Item S-008-A - One inch (1") PVC conduit in earth shall be measured by the linear foot of installed and accepted conduit. Measurement will include conduit (including conduit inside junction boxes), clamps, fittings, above ground junction boxes, and all miscellaneous hardware required for a complete conduit installation.

Item S-008-B - Two inch (2") PVC conduit in earth shall be measured by the linear foot of installed and accepted conduit. Measurement will include conduit (including conduit inside junction boxes), clamps, fittings, above ground junction boxes, and all miscellaneous hardware required for a complete conduit installation.

Item S-008-C - Three inch (3") PVC conduit in earth shall be measured by the linear foot of installed and accepted conduit. Measurement will include conduit (including conduit inside junction boxes), clamps, fittings, above ground junction boxes, and all miscellaneous hardware required for a complete conduit installation.

Item S-009 – Manhole(s) shall be measured by each installed and accepted manhole.

Item S-011 Vehicle loop detector shall be measured by the roadway and as per attached drawings shall be measured by the linear foot of installed and accepted detector. Measurement

will include sawing, wire, and sealing. Measurement will be made from the edge of pavement and once around each loop perimeter.

Item S-012-A - Type A one-way, three section, signal heads mounted on mast arms with mast arm mounting brackets as per attached drawings, complete with backplates shall be measured by each installed and accepted signal head. Measurement will include disconnect hangers, traffic signal wiring attached to overhead span, closure caps, mounting hardware, lamps, head programming, mounting connections and hardware.

Item S-012-B - Type B one-way, three section, signal heads mounted on mast arms with mast arm mounting brackets as per attached drawings, complete with backplates shall be measured by each installed and accepted signal head. Measurement will include disconnect hangers, traffic signal wiring attached to overhead span, closure caps, mounting hardware, lamps, head programming, mounting connections and hardware.

Item S-012-C - Type A one-way, three section, signal heads complete with slip-fitters for mounting on pedestals as per attached drawings, complete with backplates shall be measured by each installed and accepted signal head. Measurement will include disconnect hangers, traffic signal wiring, closure caps, mounting hardware, lamps, head programming, mounting connections and hardware.

Item S-013 – Priority control equipment as noted on drawings and in Section III H of these specifications shall be measured on a lump sum basis for detectors, brackets, emitters, switches, and cable installed and accepted.

Item S-013-A - Two conductor traffic signal cable with outer shield from the controller cabinet to all vehicle detectors shall be measured by the linear foot of installed and accepted cable. Measurement will include cable, clamps, connectors, and all miscellaneous hardware required for a complete cable installation.

Item S-013-B - Five conductor traffic signal cable from the controller cabinet to all traffic signal heads shall be measured by the linear foot of installed and accepted cable. Measurement will include cable, clamps, connectors, and all miscellaneous hardware required for a complete cable installation.

Item S-013-C - Seven conductor traffic signal cable from the controller cabinet to all traffic signal heads shall be measured by the linear foot of installed and accepted cable. Measurement will include cable, clamps, connectors, and all miscellaneous hardware required for a complete cable installation.

Item S-013-D - Twelve conductor (twisted six (6) pair) hardwire interconnect cable with outer shield from the controller cabinet to controller cabinet shall be measured by the linear foot of installed and accepted cable. Measurement will include cable, clamps, connectors, and all miscellaneous hardware required for a complete cable installation.

Item S-014 – Traffic signal pedestal pole and foundation(s) with ten-foot (10') ground rod, as per attached drawings, shall be measured by each installed and accepted pedestal pole and foundation. Measurement will include pole, base, terminal blocks, anchor bolts with hex nuts, reinforcement, conduit connections, and hardware to make a complete installation.

Payment: Payment for traffic signal work will be made at the contract unit price. Payment will be made under:

Item S-008-A, Conduit (1" PVC), per linear foot.
Item S-008-B, Conduit (2" PVC), per linear foot.
Item S-008-C, Conduit (3" PVC), per linear foot.
Item S-009, Traffic Manhole, per each.
Item S-011, Loop Detector, per linear foot.
Item S-012-A, Signal Head (Type A) (Mast Arm Mount), per each.
Item S-012-B, Signal Head (Type B) (Mast Arm Mount), per each.

Item S-012-C, Signal Head (Type A) (Pedestal Mount), per each.
Item S-013, Priority Control Equipment, per lump sum.
Item S-013-A, Cable (2C #14 AWG, 600V) (With Outer Shield), per linear foot.
Item S-013-B, Cable (5C #14 AWG, 600V), per linear foot.
Item S-013-C, Cable (7C #14 AWG, 600V), per linear foot.
Item S-013-D, Cable (12C #19 AWG, 600 V) (with Outer Shield), per linear foot.
Item S-014, Signal Support (Pedestal Pole), per each.

Note: Attached are the following supplemental specifications for reference:
Controller Specifications
Base Cabinet Specifications
Priority Control System Specifications
LED Traffic Signal Lamp Specifications

ITEM S-101-A and S-101-B, DECK DRAINAGE SYSTEM: This item consists of furnishing and installing the complete deck drainage system for the structure in accordance with plan details and the following:

Pipe hangers, scuppers and drain grates shall be steel conforming to ASTM A 709, Grade 36 galvanized after fabrication in accordance with ASTM A 123.

Bolts, nuts and washers connecting drain grates and scuppers shall be stainless steel AISI Type 416. All other bolts, nuts, washers and screws shall conform to ASTM A 307, galvanized in accordance with ASTM A 153 or by an approved mechanical galvanizing process conforming to ASTM B 695 that provides the same coating thickness.

Piping and fittings shall be one of the following systems, at the Contractor's option. (1) Above ground piping shall be standard weight, schedule 40, galvanized steel pipe conforming to ASTM A 53, and underground piping shall be cast iron pipe conforming to ASTM A 74; or (2) all piping (both underground and above ground) shall be standard weight, schedule 40, galvanized, nickel-copper alloy steel pipe conforming to ASTM A 53, except the chemical composition shall include copper content of 0.75 to 1.25 percent by weight and nickel content of 1.60 to 2.20 percent by weight.

Ends of pipe shall be smooth at welded joints; otherwise, pipe ends shall be grooved to facilitate mechanical type couplings. Pipe couplings shall be mechanical type, to mechanically engage and lock the groove pipe or fitting ends in a positive couple to allow for angular deflection and contraction and expansion. Each coupling shall consist of malleable iron housing clamps in 2 or more parts, a sealing gasket, and 2 or more steel bolts as required to assemble the housing clamps. Couplings shall be Victaulic Standard Couplings, Type 77, (Victaulic Company of America, Elizabeth, New Jersey) or Gustin Bacon No. 100 (Gustin Bacon Company, Kansas City, Kansas) or other approved couplings.

Exposed metalwork not galvanized shall be painted in accordance with Section 811 of the Standard Specifications. Damaged galvanizing shall be required in accordance with Subsection 811.16.

Before ordering or fabricating any materials for this item, the Contractor shall prepare drawings as necessary to show the proposed piping layout, including fittings, and shall submit the required number of copies in accordance with Subsection 801.03.

The accepted quantity of deck drains will be paid for at the contract unit price per each, for the grate and scupper, under Item S-101(A), Deck Drainage System (Type A). Furnishing and installation of steel and PVC pipe and fittings, coupling and pipe supports will be paid for at the contract lump sum price under Item S-101(B), Deck Drainage System (Type B).

Item S-101-A, Deck Drainage System (Type A), per each.

Item S-101-B, Deck Drainage System (Type B), per lump sum.

ITEM S-102, LIGHT SUPPORT BASE: This item consists of furnishing and construction reinforced concrete (blisters) projecting beyond the fascia of the deck and railing for the support of future roadway lighting, in accordance with plan details, Section 805 and 806 of the Standard Specifications and the following requirements:

The light support base concrete shall be formed and placed monolithically with the deck slab and the concrete railing. Concrete shall be Class AA.

Anchor bolts steel shall conform to AISI 4140 or approved equal with minimum yield stress (Fy) as 55 KSI, minimum tensile strength as 75 KSI and 21% minimum elongation in 2 inch. All nuts and washers shall conform to A 675, Grade 90, or approved equal. Anchor bolts, nuts and washers shall be galvanized in accordance with ASTM A153. Anchor bolts shall be preset in the forms, properly oriented for the light support base plate, with the back of the bend so positioned as to provide a minimum 2" clearance to the face of concrete.

Light support bases will be paid for at the contract unit price per each, which includes furnishing and placing of all concrete, reinforcing steel, anchor U-bolt assemblies.

Payment will be made under:

Item S-102, Light Support Base, per each.

ITEMS S-103-A, SIGN SUPPORT BASE (SMALL) and S-103-B, SIGN SUPPORT BASE (OVERHEAD TRUSS): These items consist of furnishing and constructing reinforced concrete blisters and the steel for the supporting bracket projecting beyond the fascia of the deck and railing of the expressway and transit lanes structure for the support of future traffic signs in accordance with plan details, Sections 805 and 807 of the Standard Specifications, and the following requirements:.

The sign support base concrete shall be formed and placed monolithically with the deck slab and the concrete railing. Concrete shall be Class AA.

Anchor bolts, nuts and washers shall be galvanized to conform to ASTM Designation: A153. Anchor bolts shall be preset in the forms, properly oriented for the sign support base plate, with the end of the anchor bolt so positioned as to provide a minimum 2" clearance to the face of the concrete.

Steel for sign bracket shall conform to ASTM Designation: A36, galvanized after fabrication to conform to ASTM Designation: A123. All exposed steel surfaces shall be painted to match color of the plate girders. Preparation and painting of the galvanized surface shall conform to Subsection 811.15; damaged galvanizing shall be repaired in accordance with Subsection 811.16.

Bolts, nuts and washers connecting sign bracket to plate girder stiffener shall conform to ASTM Designation: AISI 4140, galvanized in accordance with ASTM Designation: A153. Concrete anchor studs shall conform to Subsection 1013.24.

Anchor bolts steel shall conform to AISI 4140 or approved equal with minimum yield stress (Fy) as 55 KSI, minimum tensile strength as 75 KSI and 21% minimum elongation in 2 inch. All nuts and washers shall conform to ASTM A-675, Grade 90 or approved equal. Anchor bolts, nuts and washers shall be galvanized in accordance with ASTM A153.

Reinforced concrete sign support bases will be paid for at the contract unit per each, which includes furnishing and placing of all concrete, reinforcing steel, anchor bolt assemblies and sign bracket supports.

Payment will be made under:

Item S-103-A, Sign Support Base (Small), per each.

Item S-103-B, Sign Support Base (Overhead Truss), per each.

ITEM S-104, IMPACT ATTENUATORS (KINETIC) (04/01): This item consists of furnishing and constructing a Kinetic Impact Attenuator, generally referred to as a Compression Crash Cushion, in accordance with plan details, manufacturer's recommended procedures and other requirements specified in this special provision. Kinetic Impact Attenuators shall be connected to a rigid backup wall to resist the impact loads. The backup wall shall be constructed in accordance with the plan details and may require some modification to achieve compatibility with the specific attenuator supplied by the contractor.

All attenuators must have been successfully crash tested and conform to the requirements of the NCHRP 350. Attenuators that do not meet the crash testing requirements of the NCHRP 350 will not be allowed on any Federal or State funded projects.

The attenuators shall provide the necessary protection for the entire designated area on the plan.

The contractor shall submit information on the type, size and the manufacturer of the attenuator he intends to utilize for each location including proposed backup wall modification to the Bridge Design Section for review and approval. A copy of this information will be retained in the District Maintenance Office. The contractor shall not modify the configuration of the gore area for the sake of accommodating the installation of a narrower attenuator, unless it is substantiated that no other type of attenuator is available in the market for a wide gore application.

All units shall be assembled with corrosion resistant fasteners. Bolts, nuts and washers shall be American National Standard. Miscellaneous metal work shall be fabricated from either M1020 merchant quality or ASTM A 36 steel and after fabrication, shall be galvanized in accordance with Subsection 811.12. All welding shall be performed by a certified welder in accordance with Section 815.

Hazard marker panels will be furnished by the Department and the contractor shall attach the hazard markers by approved methods.

The contractor shall furnish the engineer a certified statement that the Impact Attenuators and the material used conform to the plans and specifications.

Kinetic Impact Attenuators will be measured per each.

Item S-104, Impact Attenuator (Kinetic), per each.

ITEM S-105, BRICK VENEER (COLUMNS): This item consists of providing all labor and materials pertaining to masonry work as required in the plans and specified herein, while complying with all applicable building codes. Prior to biding the contractor shall review the construction documents and conduct a field review to determine type and color of brick to be used.

GENERAL REQUIREMENTS

1) After field review of existing brick work the contractor shall submit sample for face brick to the engineer for approval.

2) Mockups – the contractor shall construct a sample wall section approximately 48 inches by 48 inches high to demonstrate aesthetic effects and quality of materials and execution. Sample wall panel can be part of construction however if rejected work must be redone.

MATERIALS

Brick shall be 9"x 3 5/8" x 2 5/8" thick grade SW and be placed in a running bond with joints finished to produced a ¼" depth concave joint and ½ wide. Wall ties shall as described in the plans and as manufactured by Heckman building product, Inc. or approved equal.

Mortar and Grout

1) For masonry below grade or in contact with earth, use Type M grout.

2) For masonry above grade use type N grout.

3) Verify existing color and match existing.

4) Grout shall be in accordance with ASTM C270, Type M, 2500 psi concrete.

Expansion Joint

1) In accordance with the construction documents caulk a 3/8 Min. – 5/8 Max. expansion joint with an approved QPL silicone sealant.

EXECUTION

1) Place brick veneer masonry in accordance with lines and levels indicated on the drawings.
2) Maintain flush face on all brick veneer surfaces.
3) Cut masonry units with saw and install with cut surfaces and, where possible, cut edges concealed. Obtain engineer's approval prior to cutting or fitting any area which is not indicated on drawings or which may impair appearance or strength of masonry work.
4) Mix units for exposed masonry from several pallets or cubes as they are placed to produce uniform blend color and textures.
5) Match existing masonry: match coursing, bonding, color, and texture of existing masonry.
6) Do not shift or tap masonry after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.
7) Protect brick surfaces from damage and staining during masonry construction.
8) Keep expansion joint voids clear of mortar.
9) Clean soiled surfaces using non-acidic solution of type recommended by masonry manufacturer, which will not harm masonry or adjacent construction.

QUALITY ASSURANCE

1) Building Code Requirements for Masonry Structures, ACI 530-02/ASCE 5-02/TMS 402-02.
2) Manual of Standard Practice, MSP 1-01. Concrete Reinforcing Steel Institute.
3) Specification for Masonry Structures, ACI 530.1-02/ACE 6-02/TMS 602-02.

Payment will be made under:

Item S-105, Brick Veneer (Columns), per lump sum.

ITEMS S-150 THRU S-166, SANITARY SEWER SYSTEM: These items consist of furnishing the necessary labor, materials, equipment and installing a new sewer mains, manholes, house connections, etc., required by these drawings and specifications. This construction will become the property of Jefferson Parish Department of Engineering upon their acceptance for operation and maintenance of the system. All workmanship and materials shall conform with the requirements of the Jefferson Parish Department of Engineering.

General:

(a) Construction of sanitary sewer lines shall be defined as the excavation, placing bedding and/or foundation, laying of new pipe, backfill, and cleanup as required by the Contract Documents.

(b) Construction of manholes shall be defined as the excavation, placing of a new manhole including the required connection devices for all pipelines entering and exiting the construction, backfill, and cleanup as described and required by these Contract Documents.

(c) The Contractor shall notify the Jefferson Parish Department of Engineering in writing not less than three nor more than ten days in advance of starting the job so as to schedule the inspection of work affecting their system.

(d) The Jefferson Parish Department of Engineering Standard Notes for gravity sanitary sewer systems are included at the end of this section and are hereby made a supplemental mutation

amending the "Sewer Standard Detail" which is made part of these Documents for informational purposes. (Included with Plan Sheets.)

(e) "Deviations from Jefferson Parish Gravity Sewer System General Standard Notes" The following notes were deemed not appreciable to the Project requirements and are Not Used to avoid confusion:

Note No. 8
Note No. 14
Note No. 17
Note No. 19

(f) Contingent Discovery of "Truss Pipe" in existing sewerage system: Wherever the existing sewer system is discovered to be constructed of a product commonly known as "Truss Pipe" (i.e., PVC outer and inner shell, with asbestos-cement filled annular), the existing pipe shall not be cut-through and connected to any proposed manhole or gravity sewer line. Wherever such pipe exists, it shall be removed in full length to the next occurring joint with manufactured end-connections (no filed-cut or raw-cut pipe ends left in place). The removed "Truss Pipe" shall be replaced with 8" PVC sewer pipe same as specified herein for the proposed 8" gravity sewer line. The length of pipeline replaced under these circumstances will be paid for at the unit price bid cost for 8" PVC (SDR 35) sewer pipe, for the respective depth of cover.

Materials:

A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required for each item.

(a) Plastic Sewer Pipe:

(1) Six (6") through 8" plastic sewer pipe shall be PVC pipe meeting ASTM D3034-SDR35, the design requirements of Jefferson Parish Department of Engineering. Installation shall conform to Section D of ASTM D3034, "The Construction of Sewers", and the Plastic Pipe Association Specification UNI-B 78, "Recommended Practice of the Installation of Polyvinyl Chloride (PVC) Sewer Pipe"

(2) The fittings and bell stock for solid wall PVC pipe shall have a thickness not less than that of SDR-35 solid wall PVC pipe of the same internal diameter.

(3) The elastomeric gaskets shall be as recommended by the manufacturer, and ASTM D3212 and shall be glued or held in place by retainer rings.

(b) Foundation:

(1) Lumber used, as foundation under pipe sewers shall be laid longitudinally or laid transversely on rangers.

(2) The bedding material, which shall be riversand or limestone, shall be laid in accordance with the Contract Drawings or as directed by the Project Engineer.

(3) Lumber for use as foundation for sewers shall be No. 2 common unless substitutes are requested that meet with the approval of the Project Engineer.

(4) Continuous non-woven geotextile material shall be placed over both the pipe and the top of the bedding material. The fabric shall extend 12" above the top of pipe along the trench walls with a 24" overlap between sheets.

(5) Trench Section Details shall conform to the Sanitary Sewer Standard Trench, Foundation and Bedding Details, Type IV, for trench depths of 6 to 8 feet, and type III for trench depths of 4 to 6 feet, as shown on the "Sewer Standard Detail" Drawing by Jefferson Parish department of engineering, except that in lieu of "select" excavated material, backfill shall be granular material in conformance with Section 723.

(c) Manholes:

(1) Manholes shall be of brick, pre-cast concrete, or fiberglass construction, as required by Jefferson Parish "Sewer Standard Detail" and "General Notes" for Gravity

Sanitary Sewer systems. Manholes constructed of brick shall be submitted to Jefferson Parish Department of Engineering for Approval prior to installation.

(2) Manholes constructed of brick shall have 1" grout plaster on both the interior and exterior. As shown on "Sewer Standard detail" sheet of the Jefferson Parish Department of Engineering. All manholes shall conform to these Standards.

(3) Bricks used in the construction of manholes shall be of standard sewer brick size, unless otherwise specified.

a. Bricks shall have an average compressive strength, flatwise, of not less than 2500 lbs. per square inch; they shall withstand an average transverse load, applied at the center, of not less than 815 lbs. When laid flatwise on supports seven (7) inches apart. The absorption of a brick boiled in water for five hours shall not be more than seventeen (17) percent nor less than twelve (12) percent of the weight of the dry brick.

b. Bricks of other material than burned clay will be allowed only if, in addition to their ability to withstand the test already specified, satisfactory evidence is produced that they can resist the effects of weather, wear and chemicals. They must also be readily cut with a trowel to such shapes as may be needed and must bond well with the mortar.

c. If the Contractor desires to make use of radial bricks, whether solid or hollow, he ay be permitted to use them provided they meet the required strength in compressive tests in all three directions and also stand the absorption test.

(4) Mortar used in the construction of manholes shall consist of a uniform mixture composed of one part Portland cement, two and one-half parts of an approved sand to which shall be added hydrated lime in an amount not to exceed ten percent (10%) of the volume of cement.

(5) Iron Casings for manhole frames and covers shall be of tough gray iron, free from all injurious defects and such quality that a blow from a hammer on a square edge will produce an indentation of the casting without flaking the metal; when broken, the faces shall show a fine grain gray fracture.

a. Castings must be wire brushed until clean. No coating, dipping, or painting of castings will be allowed. They shall be of the designs and dimensions where shown in the drawings, and/or shall conform to the same type and quality of those approved for use in Jefferson Parish. All castings shall be made accurately to the dimensions specified and shall be planed where marked or where otherwise necessary to secure perfectly flat and true surfaces; allowances shall be made in the patterns so that the thickness shall not be reduced by the planning.

b. Manhole covers shall have the word "Sewer" cast into their surface, surrounded by a diamond pattern.

Execution:

(a) Method of Construction:

(1) Construction of a sewer line or manhole shall follow the sequential order as listed below:

a. Any existing sewer line or manhole involved in the new construction shall be isolated (normal flow re-routed if necessary by bypass pumping or other means).

b. The existing sewer line or manhole shall be excavated and completely uncovered. If well pointing shall be carried out.

c. For pipe placement, the trench shall be shaped to conform to the required slope and grade. As required by soil conditions, the trench shall be undercut as necessary for placement of pipe bedding as noted on the Plans and as Specified. The new sewer pipe shall then be laid in the trench, and all service connections made.

d. Manholes and pipe shall be tied in and the trench or excavation shall be backfilled.

(b) General Laying Conditions for Pipe and Fittings:

(1) Pipes and fittings shall be carefully inspected after delivery on the site of the work and will be rejected if in the opinion of the Engineer they are defective in such a way as to endanger the strength of the sewer or the tightness of the joint.
(2) Prior to beginning work, the Contractor shall verify the elevations of all existing inverts involved in the construction.
(3) No pipe shall be set in place and no joint shall be made with water standing in the trench or the bell hole.
(4) The pipe trench shall conform to the "Sanitary Sewer Standard Trench Details" as detailed on the "Sewer Standard Detail" drawing, included in these Documents, for the Type (I thru V) specified. All dimensions, foundation, bedding, geotextile material, lumber sheeting and bracing, etc., shall be as shown and noted on the detail drawing for the Standard Trench Type specified or called for.
(5) Whenever pipe laying is stopped, either for the night or for any other cause, the end of the pipe shall be securely closed to prevent the entrance of water, mud, or other matter, and shall be secured in such a manner as to prevent the end pipe from being dislodged by sliding or other movement of the backfilling.
(6) The pipes and fittings shall be so laid in the trench that after the sewer is completed, the invert thereof shall conform accurately to the grades and alignment required. At any stage of construction of a straight stretch between two consecutive manholes, the zero, or starting end of the pipe shall be clearly visible on looking through the pipe from the other end, with the full cross-section of the interior of the pipe in clear view.
(7) Wyes and tees for the reception of six (6") inch house connections shall be built into pipe sewers at points designated on the Plans, or as directed by the Project Engineer. The approximate number and locations will be given in the Contract Documents.
(8) All unused openings in branches of wyes and tees shall be closed with caps of the same material as the sewer, held in place by secure joints of such type that the cap can be removed when so desired without damage to the bell of the sewer; these caps shall be set in place before the fitting is laid in the trench.
(c) Determination of Inverts and Elevations:
(1) The Contractor shall verify the invert elevations of the existing tie-in manhole. That actual elevation shall determine the elevations of upstream manholes to be constructed under this Contract. The upstream manhole inverts shall be determined by the distance from the point of tie-in projecting a slope of 0.004 percent less otherwise shown or noted one the Plans. The Contractor shall notify the Project Engineer prior to work should the terminal end of the pipeline be determined to have less than three feet of cover.
(d) Sewer House Connections:
(1) The Contractor shall lay 6" sewer house connections from designated openings in the sewers to such points near the property lines where connections to existing service lines are to be performed, or as otherwise designated by the Project Engineer. The standard connection shall have a nominal depth of three and one half (3½') feet at the property line, a maximum of eight (8') feet at the sewer.
(2) These depths are measured for the finished grade at or near the property line to the top of the barrel of the house connection pipe. House connections of the same type of material as the main line sewers, unless otherwise authorized by the Project Engineer.
(3) All six-inch (6") sewer house connections, at the property line, shall have an adapter placed on the end of the pipe to connect to the house service.
(e) Manhole Foundation:
(1) Manholes shall rest on a minimum of 6" of compacted sand and/or limestone from the undisturbed sub-grade and shall be set to provide the invert elevations as shown on the contract drawings.

(2) In case the excavation for any structure is carried below the grade established by the Project Engineer, the Contractor shall fill the bottom of the excavation up to grade with limestone and in a manner acceptable to the Project Engineer.

(3) Each sewer manhole shall preferably be completely built as the sewer is laid up to it. No sewer shall be laid out of a manhole until the manhole has been properly set to its final elevation.

(f) Sewer Clean Out:

(1) A clean out shall be provided at each house connection. The cleanout shall consist of a Wye with the branch extended to just below the ground surface, and a plug installed on the end of the branch. The branch terminal shall be housed in a box, or cast iron frame and cover surrounded by a maintenance pad of concrete, 18" square as shown on the Jefferson Parish Department of Engineering Drawing "Sewer Standard Details"

(g) Detection Tape for Plastic Pipe: An approved electrically conductive tape shall be installed directly over and on the center of the sewer line for its entire length within the right-of-way to facilitate locating of the line with an electronic pipe locator. The placement shall be sufficient to prevent dislocation of the tape during backfill operations. The tape shall bear the words "CAUTION: SEWER LINE BURIED BELOW". The identifying tape shall be an inert material such as polyethylene plastic, with a 1-mil steel foil core, highly resistant to alkalies, acids or other chemical components likely to be found in soils. The tape shall be Terra T/D as manufactured by Griffolyn Company, Incorporated, or equal.

(h) Backfilling:

(1) Backfilling of sewer trenches shall begin as soon as the engineer is satisfied that the joints have been made properly and the locations of the wyes and tees are properly recorded, and after any required inspection by representatives of Jefferson Parish. Limestone shall be placed in the trench in such a manner as not to disturb the pipe and thoroughly, but carefully, compacted under and around the pipe as shown on the "Sewer standard detail" drawing. The granular backfill material (riversand) placed above the limestone shall conform to the requirements of section 723. After the trench is completely backfilled, the backhoe or mechanical equipment of equivalent weight shall roll over the trench repeatedly until the trench is compacted to meet the required densities specified and/or noted on the Jefferson Parish "Sewer Standard Detail" drawing.

(2) Backfilling around manholes shall be done when the Engineer considers the manhole properly aligned and set to the proper elevation. Riversand backfill material shall then be placed and compacted in six (6") inch layers to eighteen (18") inches above the top of the highest pipe. The backfilling above this point to be completed according to the paragraph above.

(i) Bypass Pumping:

(1) For any existing sewer lines, manholes, and house services involved in the construction work under this Contract (to be tied-in, etc.) the normal flow of sewage shall be re-routed and continued by the use of bypass pumping so as not to interrupt the flow to the treatment plant.

(j) Conditions of Acceptance:

(1) When the contract has been completed and tendered for acceptance, the Project Engineer will have it carefully inspected for defects. In order to be acceptable, the contract must be in a condition as herein described, namely:

a. The sewers shall be true and to line and grade and shall not have any infiltration of ground water. An infiltration measurement will be witnessed by the Project engineer, and will be performed by representatives of the Jefferson Parish Department of Engineering, at their expense, to determine acceptability. The Contractor will be responsible for paying the prevailing testing laboratory rate to the Jefferson Parish Department of Engineering pays its inspectors for any subsequent retesting due to failure of the system to pass the initial test.

b. Prior to final acceptance the Parish will verify the deflection in the solid wall PVC mains as stated hereinbefore and inspect a minimum of 10% of the system with a remote TV unit at their option. The pull line shall be placed in the lines by the Contractor.

c. The Contractor will be required to repair in an approved manner all defects disclosed by such inspections before final acceptance. Jefferson Parish shall reserve the right to TV the entire sewage system. The cost of all tests, inspection, and pulling of mandrels to verify correction of found defects, shall be borne by the contractor and shall be included in the cost of the sewer main.

d. There shall be no cracked or broken pipes or fittings in either the sewers or the house connection lines installed by the Contractor.

e. There shall be no defective joints.

f. The pipes, manholes, or other appurtenances shall be fee from mud, trash, debris, or other deleterious matter.

g. The manholes shall be properly built in accordance with the drawings and specifications shall show no cracks, displacement, or other defects in any part of the structure.

h. Paved, partially improved or unimproved surfaces disturbed by the work of the contract shall be in thoroughly good and stable condition.

i. Any deviations from the "As-Bid" plans shall be noted on the "As-Built" drawings, by the Contractor, showing changes in line and grade, submitted to Jefferson Parish prior to the final inspection. These drawings shall be certified correct by the Contractor.

(k) Guarantee Period:

(1) The Contractor shall guarantee all work for a period of one (1) year from the date of final acceptance by the Owner. During this period the Contractor shall remedy all defects attributable to defective materials and/or workmanship within ten (10) working days after receiving written notification by the Owner. Final acceptance will be contingent upon the installed system passing all inspections required by Jefferson Parish for their perpetual maintenance.

(2) In the event the Contractor fails to comply with this request within the allotted time, the necessary repair will be made by others and billed to the Contractor.

(l) Infiltration Test:

(1) Infiltration rate shall be 0 (zero) gallons per inch per mile per 24 hours; any detectable leaks shall be repaired by the Contractor. The infiltration test is the responsibility of the Contractor and shall be witnessed by the Parish's representative.

Measurement:

(a) Gravity Sewer Lines: Gravity sewer lines will be measured by the linear foot, parallel to the slope of the pipe, between manholes Sewer lines shall be measured separately for lines which have less than six (6) feet of cover, and those which have six (6) to eight (8) feet of cover, for the size of sewer line installed.

(b) Gravity Sewer Line Trench Foundation, Bedding, Sheeting and Bracing shall be measured by the linear foot of trench constructed, per each type of standard trench.

(c) Manholes: Manholes will be measured as each installed up to a depth of six (6) feet (to the invert), and as installed to a depth exceeding six (6) feet (to the invert).

(d) Service Lines: House service sewer lines up to six (6) inches in diameter (nominal) will be measured by the linear foot, parallel to the slope of the pipe, between its connections at either end of the portion of service pipeline installed. Fittings for Service Lines will be measured as each installed.

(e) Clean-Outs: Clean-outs for house service sewer lines will be measured as each installed.

(f) Detection and identification tape for plastic sewer line installation will be measured per 100 lineal footage, or fraction thereof, installed.

(g) Demolition of sewer Line: Sewer lines to be abandoned and removed will be measured by the linear foot, parallel to the slope of the pipe, between manholes or other fixtures/structures. Measurement for sewer lines to be demolished will not be differentiated by size or depth of the line.

(h) Demolition of Manholes: Sewer manholes to be abandoned and removed will be measured by the number of each manhole demolished, with no differentiated by depth.

(i) Excavation and backfill: Excavation will not be measured. Riversand (granular material) is to be used for all gravity sewer line backfill and will be calculated in net cubic yards for the volume of sand placed per Plan details.

Payment

(a) Payment for gravity sewer line placement shall be made at the unit price bid per linear foot of the size and depth of line installed. This price shall include the following:

(1) Connection of the new pipe to existing manholes as required.

(2) Removal and replacement of fences, storm sewers, utility lines, etc., that are disturbed by the line replacement.

(3) All materials used, including sewer pipe, service saddles, jointing materials, etc.

(4) All other labor, materials and equipment necessary to perform the replacement of lines and their testing except those specifically set out as pay items.

(5) Dewatering, when required.

(6) Additional timber shoring as required.

(7) Excavation.

(b) Payment for construction items detailed for Standard Trench, Types I thru c V will be paid at the unit price bid per linear foot for the Type Standard Trench installed.

(c) Payment for manholes shall be made at the unit price bid for each manhole, of the depth shown in the Proposal, complete and in place. This price shall include the following:

(1) Removal of the existing manhole in its entirety, where the manhole is to be replaced.

(2) Setting, proper base slab construction to accept sewer lines, brickwork, and setting of frame and cover to proper grade.

(3) All bedding and foundation as described in the specifications and as shown on the Plans.

(4) All grouting and forming of the channeled bottom of the manhole, as required.

(5) Dewatering, as required.

(6) Sheathing and shoring, as required.

(7) All excavation and backfill.

(d) Payment for clean-outs shall be made at the unit price for a complete installation per each.

(e) Payment for 6" PVC service line (house connection) shall be made at the unit price bid per foot of installed pipeline.

(f) Payment for 6" PVC fittings used in service lines (house connections) will be paid for at the unit bid price per each fitting installed, including the fitting in the main line where the connection is made.

(g) Plastic sewer line detection/identification tape will be paid for at the unit price bid per 100 lineal feet, or fraction thereof.

(h) All auxiliary and other work items, including labor and other direct or indirect cost related to proper construction of the proposed sewer system, including all required by-pass pumping to maintain sewage flow, that is no specifically addressed in the schedule of payment as Specific Bid Items, shall be included in the unit price bid for 8" PVC sewer pipe.

(i) Payment for riversand (granular material) used for sewer line construction will be made at the unit price bid for Granular Material Backfill for Sewer Line in net cubic yards.

(j) Payment for demolition of sewer Line, manholes, etc. will be made at the unit price bid for the removal of sewer line per linear foot, and for manhole removal, each, for demolition of the existing system within the Right-of-Way to the limits described on the Plans.

(a) Payment will be made at the contract price for the unit and lump sum prices under the following items:

Item S-150, 8" PVC (SDR26) Sewer Pipe at 4' to 6' of Cover, per linear foot.
Item S-151, 8" PVC (SDR26) Sewer Pipe at 6' to 8' of Cover, per linear foot.
Item S-152, Type III Standard Trench (4' to 6'), per linear foot.
Item S-153, Type IV Standard Trench (6' to 8'), per linear foot.
Item S-154, Standard Manholes less than 6' Deep, per each.
Item S-155, Standard Manholes at 6' to 8' Deep, per each.
Item S-156, 6" PVC (SDR26) Service Line, per linear foot.
Item S-157, 8" x 6" PVC 45 Degree Wyes, per each.
Item S-158, 6" PVC 45 Degree Elbows, per each.
Item S-159, 6" Clean Out Installation, per each.
Item S-160, Granular Material Backfill for Sewer Line, per cubic yard.
Item S-161, Sewer Line Marking Tape, per 100 linear feet.
Item S-162, Demolition of Existing Sewer Line, per linear foot.
Item S-163, Demolition of Existing House Service Line, per linear foot.
Item S-164, Demolition of Existing Manhole, per each.
Item S-165, 8" D.I. Pipe for Temporary Water Line, per linear foot.
Item S-166, D.I. Fittings w/Restr. Joints for Temp. Water Line, per ton.

Jefferson Parish
Department of Engineering
Gravity Sanitary Sewer System General Standard Notes*[1]

* [These notes shall be referenced and shall be included, in their entirety, unedited and unabridged, in all Jefferson Parish Specification Booklets, which include any work related to the parish gravity sanitary Sewer System. Insert a copy of these notes, on green paper, at the end of the "Gravity Sanitary Sewer System Technical Specification" Section of the Specification Booklet. Any deviations and/or variations from these General Standard Notes shall be tabulated under the heading of "Deviations from Jefferson Parish Gravity Sanitary Sewer System"].

1. CONTRACTORS SHALL NOTIFY THE DEPARTMENT OF SEWERAGE AT 736-6610 AND THE DEPARTENT OF ENGINEERING, INSPECTION DIVISION AT 736-6793, 48 HOURS PRIOR TO ANY FIELD WORK RELATING TO JEFFERSON PARISH SANITARY SEWER SYSTEM.
2. THE MINIMUM ACCEPTABLE SIZE FOR NEW GRAVITY SEWER LINES IS 8 INCHES IN DIAMETER.
3. POLYVINYL CHLORIDE (PVC) GRAVITY PIPE 4 INCHES THROUGH 15 INCHES IN DIAMETER (MAINS AND LATERAL SERVICE CONNECTION) SHALL MEET ASTM SPECIFIATION D3034 (LATEST REVISION) DR26 WITH MINIMUM PIPE STIFFNESS OF 115 PSI. PVC PIPE LARGER THAN 1 5 INCHES IN DIAMETER SHALL MEET ASTM SPECIFICATION F-679, DR35 (T-1 WALL THICKNESS) OR DR37.6 (T-2 WALL THICKNESS) WITH MINIMUM PIPE STIFFNESS OF 46 PSI. FITTINGS SHALL MEET ASTM SPECIFICATION D-3034 (LATEST REVISION), DR35. PIPE SECTIONS AND FITTINGS SHALL BE INTEGRAL CAST BELL AND ELASTOMERIC GASKET AS RECOMMENDED BY THE MANUFACTURER AND ASTM SPECIFICATION D-3212. INSTALLATION OF THE SEWER GRAVITY LINES SHALL CONFORM TO ATM SPECIFICATIONS D-2321.
4. SERVICE CONNECTIONS SHALL BE 6-INCH IN DIAMETER AND SHALL BE INSTALLED IN ACCORDANCE WITH JEFFERSON PARISH SEWER STANDARD DETAILS. SERVICE CONNECTIONS SHALL EXTEND FROM MAIN TO PROPERTY LINE.
5. TRENCH CONSTRUCTION FOR THE GRAVITY SANITARY SEWER LINES SHALL BE DETERMINED BY THE EXISTING SOIL TYPE AND THE DEPTH OF INSTALLATION. REFER TO JEFFERSON PARISH SEWER STANDARD DETAIL SHEET (LATEST REVSION). USE SOIL TYPE I.

[1] Jefferson Parish Department of Engineering "Gravity Sanitary Sewer System General Standard Notes", December 2002.

6. TIMBER SHEETING AND BRACING SHOWN (JEFFERSON PARISH SEWER STANDARD DETAIL SHEET, LATEST REVISION). FOR SANITARY SEWER TRENCHES, ARE THE MINIMUM REQUIRED TO CONTROL THE WIDTH OF THE EXCAVATED TRENCH AND TO SAFEGUARD THE INTEGRITY OF THE SANITARY SEWER FOUNDATION, BEDDING AND BAKFILL. IN ADDITION TO THESE MINIMUM REQUIREMENTS, THE CONTRACTOR MUST PROVIDE SUFFICIENT AMOUNT OF SHEETING AND BRACING TO INSURE SAFE WORKING CONDITIONS FOR HIS WORKMENT.

7. NO INFILTRATION IS ALLOWED WITHIN THE GRAVITY SANITARY SEWER SYSTEM (MANHOLES, MAINS & SERVICE CONNECTIONS).

8. NOT USED

9. SEWER LINES SHALL NOT BE INSTALLED CLOSER THAN 10 FEET (MEASURED HORIZONTALLY) FROM ANY BUILDING FOUNDATION, WALL OR BUILDING OVERHANG. THIS 10-FOOT CLEARANCE MAY BE REDUCED TO 6 FEET IN AREAS HAVING COMMERCIAL ZONING WITH LIMITED RIGHT-OF-WAY AND WITH APPROVAL OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT.

10. SEWER SERVICE CONNECTIONS MAY CROSS OVER WATER AINS WITH A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER SERVICE CONNECTION TO MAINTAIN LINE AND GRADE. ONLY TYPE III, IV&V SEWER STANDARD TRENCH (SEE JEFFERSON PARISH SEWER STANDARD DETAILS) SHALL BE PERMITTED. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER MAIN JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.

11. FIBERGLASS MANHOLES AS WELL AS BRICK, CAST –IN-PLACE AND PRECAST CONCRETE MANHOLES MAY BE SPECIFIED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, FOR MANHOLES, TO THE PARISH'S CONSULTANT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

12. SEWER SERVICEHOUSECONNECTIONS CONNECTED TO A TERMINAL MANHOLE SHALL BE CONNECTED AT THE INVERT OF THE TERMINAL MANHOLE.

13. MINIMUM DEPTH FOR SEWER MANHOLES AND AINS SHALL BE 3.5 FEET. DROP SEWER MANHOLES SHALL BE INSTALLED WHEN THE VERTICAL DISTANCE FROM THE MANHOLE INVERT TO THE SEWER MAIN INVERT EXCEEDS THREE (3) FEET.

14. NOT USED.

15. EXISTING SANITARY SEWER HOUSE CONNECTIONS, IF DISTRUBED, SHALL BE REPAIRED, ADJUSTED OR REPLACED AS FOLLOWS:

- IF THE EXISTING SANITARY SEWER HOUSE CONNECTION IS MANDE OF PVC MATERIAL, ANY REPAIRS OR ADJUSTMENTS SHALL BE ALLOWED ONLY SDR-35 REPAIR COUPLINGS WILL BE ALLOWED FOR REPAIR FO THE EXISTING PVC SANITARY SEWER HOUSE CONNECTIONS UNDER ROADWAYS.
- IF THE EXISTING SANITARY SEWER HOUSE CONNECTION IS MADE OF ANY MATERIAL OTHER THAN PVC MATERIAL, REPAIRSOR OR ADJUSTMENTS SHALL NOT BE ALLOWED. THESE CONNECTIONS SHALL BE REPLACED WITH PVC PIPE AND FITTINGS FRO THE MAIN TO THE PROPERTY LINE OR TO THE JEFFERSON PARISH MAINTENANCE CLEANOUT, WHICHEVER IS PRACTICAL.
- BEDDING AND BACKFILL OF THE SANITARY SEWER HOUSE CONNECTIONS MUST BE AS INDICATED ON JEFFERSON PARISH SEWER STANDARD DETAIL SHEET (LATEST REVISION).

- NO SIPHONS WILL BE ALLOWED.

16. MANHOLE CONNECTIONS (CONNECTION OF SEWER PIPES TO MANHOLES) SHALL BE WATERTIGHT. CONNECTION OF PVC SEWER PIPE TO MANHOLES WITH CONCRETE GROUT, WITHOUT SOME FORM OF APPROVED MANHOLE CONNECTOR OR WATER STOP, SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR MANHOLE CONNECTIONS TO THE PARISH ENGINEER FOR APPROVAL PRIOR TO CONSTUCTION.

17. NOT USED.

18. WHEN SANITARY SEWER LINES ARE PARALLEL TO WATER LINES, THE CLEARANCE SHALL BE A MINIMUM OF 6 FEET (MEASURED HORIZONTALLY): WHEN SEWER AND WATER LINES CROSS, VERTICAL CLEARANCE SHALL BE 18 INCHES, WITH THE WATER LINE CROSSING ON TOP IF THESE CONDITIONS CANNOT BE MET DUE TO FIELD CONDITIONS, THE "10 STATE STANDARDS" ((PHONE (518) 439-7286, WEBSIT: WWW.HES.ORG)) GUIEDLINES CAN BE FOLLOWED. WITH APPROVAL OF THE JEFFERSON PARISH ENGINEERING DEPARTMENT.

19. NOT USED.

20. THE DEPARTMENT OF ENGINEERING HAS THE RIGHT TO REJET ANY AND ALL EQUIPMENT, OR WORK, WHICH DOES NOT CONFORM TO SPECIFICATIONS. ANY WORK SO REJECTED SHALL BE REDONE BY THE CONTRATOR AT HIS OWN EXPENSE.

21. BACKFILL ALL TRENCHES WITHIN STREET RIGHT-OF-WAY WITH PUMPED RIVER SAND.

22. THE CONTRACTOR SHALL PERFORM A PRE-CONSTRUCTION AND POST-CONSTRUCTION VIDEO INSPECTIONS OF ANY VITRIFIED CLAY SANITARY SEWER PIPE WITHIN THE PROJECT LIMITS. THE PURPOSE OF PRE-CONSTRUCTION VIDEO INSPECTION WOULD BE TO PROVIDE ADDITIONAL INFORMATION ABOUT THE CONDITION OF THESE LINES BEFORE CONSTRUCTION VIDEO INSPECTION WOULD BE TO REFLECT ANY DAAGED CAUSED BY THE COSTRUCTION. COPIES OF THESE VIDEOS SHALL BE SENT TO THE JEFFERSON PARISH DEPARTMENTS OF ENGINEEERING AND SEWERAGE, IMMEDIATELY, AS THEY BECOME AVAILABLE.

23. THE CONTRACTOR SHALL FURNISH TO THE JEFFERSON PARISH DEPARTMENT OF ENGINEERING "AS-BUILT" PLANS (ONE DITITAL CD, ONE MYLAR & THREE BLUE-LINE SETS). AS-BUILT PLANS SHALL INCLUDE AS A MINIMUM, THE FOLLOWING:

- DISTANCE OF SEWER HOUSE CONNECTIONS (HC) FROM DOWNSTREAM MANHOLES. THIS DISTANCE SHALL BE MEAURED ALOND THE CENTERLINE OF THE MAIN AND SHALL BE EQUAL TO THE DISTANE FROM THE CENTER OF THE DOWNSTREAM MANHOLE TO THE PROJECTION POINT OF EACH HC (HC AT PROPERTY LINE) ONTO THE MAIN.
- ELEVATION OF SERVICE HOUSE CONNECTIONS AT THE PROPERTY LINE.
- THE INVERT AND TOP OF CASTING ELEVATIONS AND DEPTH OF EACH MANHOLE.
- PIPE INVERTS AT MANHOLES.
- THE CENTER-TO-CENTER DISTANCES OF CONSECUTIVE MANHOLES.

ITEMS S-170 THRU S-192, WATER DISTRIBUTION SYSTEM: These items consist of furnishing the necessary labor, materials, equipment and installing a new eight (8) inch water distribution system in accordance with these specifications and in conformity with the lines and grades shown or noted on the plans or established by the Engineer.

Materials

A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required for each item.

(a) Plastic Pipe: Plastic pipe and tubing shall be polyvinyl chloride (PVC)

(1) Polyvinyl Chloride (PV) pipe shall conform to ASTM D 2241 and be pressure rated at 150 psi working pressure. The pipe shall be made from Polyvinyl Chloride compounds conforming to class 1245B (Type 1, Grade 1), ASTM D 1784. Unless otherwise noted, where PVC pipe is called for on the Plans, pipe shall be supplied with rubber gasketed bell and spigot joints. Flanged piping where called for on the plans shall be schedule 80 unless noted otherwise. PVC pipe 6" and larger shall be DR-18 and shall comply with requirements of AWWA C-900, AWWA C-905, and Uni-Bell-11, as applicable. Fittings for 4" and larger PVC pipe for buried service shall be rubber gasketed ductile iron with mechanical joints. All bolts and nuts shall be 316 stainless steel installed using anti-seize compound, or heat-treated Teflon coated "COR-TEN". Where shown on the plans, fittings for aboveground PVC piping installations shall be flanged ductile iron in conformance with these documents. Flange bolts, where used, shall be 316 Stainless Steel, installed using anti-seize compound or heat treated Teflon coated "COR-TEN". All four (4) inch and larger PVC piping and associated fittings shall be restrained where noted on the plans, and as specified herein.

(2) Where shown on the plans, Schedule 40 PVC shall be in accordance with ASTM D 17785, Schedule 40, PVC 1120.

(3) Plastic pipe and fittings must bear the seal or NSF mark of the National Sanitation Foundation or other approved marking indicating approval for use in transporting potable water.

(4) Welding solvent and solvent thinner shall conform to ASTM D 2564.

(5) Thrust Restraint for PVC Pipe Joints shall be performed by tying joints together with restraining devices, as well as with the use of the thrust blocking, in all sections of pipe subject to thrust forces. Reaction backing alone will not be allowed. Mechanical joint restraint shall be accomplished by a device or series of devices, which firmly hold, without slipping or damaging the exterior of the pipe, and in a uniform manner, the circumference of the pipe. These devices must be connected to the adjacent fitting or pipe end by a series of rods and/or bolts and structural shapes sufficient to restrain the forces generated by the test pressure, and the working and surge pressures. Flexibility of the joint must remain after burial, and the device must be suitable for use with standard 316 Stainless Steel threaded rods or machine bolts of 316 Stainless Steel, all to be installed using anti-seize compound, or heat-treated Teflon-coated "COR-TEN", and must be capable of restraining all thrust forces generated within the pressure range required by the piping system. Any device proposed for use as a restraining device that is not a specified, or approved system of joint restraint must receive approval of the Jefferson Parish department of Engineering prior to its use for bid pricing. Devices submitted for approval shall be subject to Jefferson Parish's decision alone. Where restrainers are fabricated from stainless steel, the material shall be 316 Stainless Steel. Bolts or rods used with the steel restrainers shall be 316 Stainless Steel. Restrained joints

are indicated to be used for restraint against internal thrust (such as at abrupt changes of direction in the pipeline alignment by elbows, tees, etc., or at dead ends or other situations requiring restrain of thrust), restraint shall be accomplished by installing pipe with restrained joints fro the point of directional change (elbow, tee, etc.) outward in either direction along the length of the pipe extending from the point of change, the distances shown in the table below, unless otherwise detailed on the plans or specified in these documents.

TABLE T-W WATER DISTRIBUTION PIPING SYSTEM

Length of restrained pipe required, in each direction, from each of the fittings shown:

PIPE	HORIZONTAL DEFLECTION				VERTICAL OFFSET	DEAD-END THRUST
	90 DEG ELBOW	45DEG ELBOW	22.5 DEG ELBOW	11.25 DEG ELBOW	45 DEG ELBOW	DEAD-ENDS & TEE BRANCH RUNS
12"	60'	40'	20'	10'	60'	80'
8"	40'	20'	15'	8'	40'	60'
6"	30'	16'	12'	8'	36'	54'

In addition to the use of restrained joints for distances shown above, all restrained fittings at changes in direction shall be additionally blocked with timber to restrain thrust forces.

(6) Thrust restraint using timber thrust blocking will be required for 6" pipe at changes in direction of 22.5 degrees or more, and at tees or dead ends. 6" pipe shall be additionally restrained with joint clamps for thrust restraint wherever noted on the plans. Timber thrust blocking shall also be used to augment, or supplement, restrained 12" or 8" piping, at change in direction, same as described for 6" pipe. Timber blocking shall additionally be used to restrain thrust forces at points of tie-in to existing lines, which are not restrained, or cannot be restrained. Thrust blocks shall be made with treated timber unless permission is received by the contractor to use other type timber or he is directed to use concrete. The thrust block shall be of sufficient size to resist the resultant force generated by the internal pressure of the pipeline operating at test conditions. Concrete in thrust blocks shall not cover pipe joints. Timber thrust blocks shall be made by setting two (2) inch by twelve (12) inch planks against the undisturbed soil of the trench wall and appropriate size blocking wedged between those planks and the fittings or hydrant to be blocked. Enough planks shall be placed against the undisturbed soil to distribute the thrust sufficiently so that the bearing capacity of the soil will adequately resist the reaction of the fitting or hydrant.

(7) Detection tape for Plastic Pipe: An approved electrically conductive tape shall be installed directly over and on the center of all water pipe for its entire length within the right –of-way to facilitate locating of the line with an electronic pipe locator. Tape shall be placed no more than one (1) foot above and centered on the pipeline. The placement shall be sufficient to prevent dislocation of the tape during backfill operations. The tape shall bear the words "CAUTION: WATER LINE BURIED BELOW." The identifying tape shall be an inert material such as polyethylene plastic, with a one (1) mil steel foil core, highly resistant to alkalines, acids or other chemical components likely to be found in soils. The tape shall be Terra T/D as manufactured by Griffolyn Company, Incorporated, or equal.

(b) Cast Iron and Ductile Iron Pipe:

(1) Cast Iron Pipe: cast iron pipe shall be made of gray cast iron and shall conform to ANSI A21.6 (centrifugally cast in metal molds) or A21.8 (centrifugally cast in sand molds). Iron in the pipe shall have a bursting tensile strength of at least 21,000 psi and the pipe shall have a ring modulus of rupture of at least 45,000 psi.

(2) Ductile Iron Pipe for buried service shall be centrifugally cast with dimensions for thickness class 51 and tested prior to shipment in accordance with ANSI specification A21.51. Thickness design shall conform to ANSI A21.50. Pipe shall meet all requirements for push-on rubber gasketed joints in accordance with ANSI A21.11. All pipe and fittings shall have a cement mortar lining in accordance with the latest revision of ANSI specification A21.4 (AWWA Specification C-104). Manufacturer's certificates shall be furnished to the Engineer covering the above-specified tests. All buried pipe shall be coated with a factory asphaltic exterior coating as hereinafter specified in subparagraph 2(f) and encased in a polyethylene tube in accordance with ANSI/AWWA C105/A21.5. Where called for on the plans or as required under this specification, restrained pipe shall be supplied with an external joint clamping system. External joint clamps shall be made using socket clamps, ¾" stainless steel rods, or shall be commercially supplied, and shall be installed with adequate thrust blocking (timber) as shown on the water details sheet. All bolts and nuts shall be stainless steel with anti-seize compound. T-headed bolts and nuts for mechanical joints shall be heat treated Teflon coated "COR-TEN".

(3) Cast ductile iron fittings shall conform to ANSI specification A21.10. All fittings shall have a cement motor lining in accordance with the latest revision of ANSI specifications A21.4 and AWWA Specifications C104. Bell and Spigot joints shall conform to ANSI A21.11 (AWWA C110). Unless otherwise noted or specified, fittings for buried ductile iron pipe or PVC pipe shall be supplied with mechanical joint ends. All bolts and nuts shall be stainless steel, and T-headed bolts and nuts for mechanical joints shall be heat-treated Teflon coated "COR-TEN". Anti-seize compound shall be used on stainless bolts and nuts. Where called for on the plans or as require under the specifications fittings shall be provided with an external clamping system to restrain joints, similar to that specified above for ductile iron pipe. External joint clamps shall be compatible with both the fitting and the pipe to which it is connected. All buried fittings shall be coated with a factory applied asphaltic exterior coating as hereinafter specified in subparagraph 2 (f), and shall be encased in a polyethylene tube, same as for Ductile Iron Pipe.

(4) Where pipe or fittings with dissimilar joints must be connected, it shall be the Contractor's responsibility to furnish and install the necessary fittings or adapters to make the transition.

(5) Where field cutting and jointing to existing pipe is necessary, there shall be a minimum 1'-6" section of straight pipe preceding valves, fittings, etc.

(c) Gate Valves and Valve Boxes:

(1) Gate Valves: Gate Valves 4" – 12" shall be iron body, bronze mounted, resilient seat type with a 200 psi working pressure. Valves shall conform to AWWA C 509 and have a non-rising stem, 2" operating nut, and shall open in a counter-clockwise direction. Gate valves shall have a factory applied exterior epoxy coating, and shall have stainless steel or heat-treated Teflon coated "COR-TEN" bolts and nuts. No cadmium –plated nuts or bolts will be permitted. Valves shall be as manufactured by Mueller, Kennedy, M&H or Clow only.

(2) Valve boxes shall be approved cast iron, 2-piece, heavy roadway type. Valves boxes for 12" or larger valves shall be of the 3-piece type with oval base. The term "water" shall be cast on each valve cover. Each valve box shall be provided with a "Valve-Saver". The "Valve-Saver" shall be installed in all boxes to eliminate dirt and debris from hampering access the operating nut. The dish-shaped insert body shall be manufactured from a corrosion-resistant material such as stainless steel, FRP, or approved equal. A closed cell neoprene gasket with a pressure sensitive adhesive shall affix the gasket to the bottom of the Lip. The insert shall have a 1" wide nylon strap attached to the base of the insert for removing it from the box. This strap and its attachment to the insert base shall be of sufficient strength to withstand a minimum 500 lb Pull during removal. The valve box insert shall be a "Valve Saver" as manufactured by Southwestern Packing and Seals, (P.O. Box 19369, Shreveport, LA) or approved equal.

(d) Tapping Sleeves and Valves: Tapping Sleeves for PVC, AC and Ductile Iron pipe shall be manufactured of 18-8, 304 stainless steel with a ductile iron flange. The ductile iron flange shall conform to the latest revision of ASTM A536, ANSI B16.1 and shall be suitable for a working pressure of 150 psi. All nuts and bolts shall be stainless steel with anti-seize compound or heat treated Teflon coated "COR-TEN". Tapping valves shall be manufactured by Mueller, Clow, M&H, or Kennedy. Valves shall have end connections suitable for make up to tapping sleeve and adjacent pipe.

(e) Fire hydrants: Fire hydrants shall conform to AWWA Designation: C502 for 3-way compression type hydrants with working pressures of 150 psi. Hydrant inlet connections shall be flanged joints. Two 2½" hose nozzles and one 4¼" pumper nozzle shall be provided; hose connections shall meet the thread standards of the Sewerage and Water Board of the City of New Orleans. Hydrants shall be set so there is 18" from nozzle centerline to ground. Hydrants shall have bronze seal rings, automatic drain openings and O-ring seals. Minimum inlet connection of 5¼" shall be provided. Hydrants shall contain a breakaway feature at ground level consisting of breakaway bolts or flange and breakaway coupling on the rod. Main valve and valve seat shall be replaceable without digging up the hydrant. All hydrant leads, regardless or water main size shall be fitted with a 6" gate valve between the hydrant and tee. The hydrant exterior shall be painted with approved enamel and shall be repainted after installation (color: silver). All hydrants shall be Mueller Super Centurion 200 (A-423) as manufactured by the Mueller Company, or Kennedy Guardian (Fig K81A).

(f) Coatings for Pipe, Valves, and fittings, etc.: All pipe shall receive an exterior asphaltic coating in accordance with ANSI/AWWA C151/A21.51, and all fittings shall receive a similar coating in accordance with ANSI/AWWA C110/A21.10. Valves shall be supplied with a factory-applied epoxy. Stainless steel bolts and bolts and connectors that have other type corrosion protection shall not be coated.

Execution:

(b) General:

(1) Handling: Care shall be taken in lading, transporting, and unloading to prevent injury to the pipe or coatings. Pipe or fittings shall not be dropped. All pipe fittings shall be examined before installation, and no piece shall be installed which is found to be defective.

(2) Existing Underground Utilities and Obstructions: All water lines, gas lines, telephone conduits, drainage structures, etc. shall be located and protected by the Contractor during construction. Existing underground facilities and utilities are indicated on the contract drawings only to the extent that such information was made available to or

discovered by the engineer in preparing the Contract drawings. There is no guarantee as to the accuracy or completeness of such information, and all responsibility for the accuracy and completeness thereof is expressly disclaimed. If the contractor fails to discover an underground installation and damages the same, he shall be responsible for the cost of repair.

(c) Trench Excavation:

(1) Excavation: Excavation shall conform to subsections 701.03 and 701.04, and the following requirements.

a. Protection of Excavation: sheeting, shoring and hand excavation shall be used as necessary for protection of the work. Sheeting shall be withdrawn as backfilling is being done, except where the Engineer directs that the sheeting and shoring be left in place, or where the Engineer permits the sheeting to be left in place. The Contractor shall cut off any sheeting left in place at least 18" below finished grade. Sheeting and bracing will not be paid for directly, unless directed to be left in place by the Project Engineer or Owner.

b. Trench Depth: Unless otherwise noted or indicated on the plans, minimum bury (depth from grade to top of pipe) for 8" pipe in non-paved areas, and under pavement or surfacing shall be 4 feet. Minimum bury under ditches shall be 2 feet. Minimum cover for encased railroad crossings shall be 5 feet above the casing pipe, unless otherwise noted.

c. Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at each joint location to permit the joint to be properly made and the pipe barrel to rest firmly on the trench bottom.

(2) Under Pavement:

a. Removing Pavement: The contractor shall remove existing pavement as necessary for trench excavation. Pavement shall be cut back from the tope edges of trenches at least 24" on each side of the trench. The requirements of section 724 shall be followed for removing and replacing pavement except that no separate payment will be made for this work.

b. Jacking and Boring: the Contractor may elect to jack and bore pipe under existing pavement where practical; however, separate payment for jack and bored pipe will only be made when jacking or boring of pipe is specified or shown on the Plans. Jacked or bored casing shall be installed in accordance with Section 728.

(3) Encased Roadway Crossings:

a. Water mains under roadways shall be cased where indicated on the drawings. The casings may be installed by open cut method, unless otherwise noted on the plans.

b. Unless otherwise noted on the contract Plans, all casing shall be electro-welded steel pipe conforming to al requirements of ASTM A36 Grade B. The diameters and thickness of casing pipe shall be as indicated on the drawings, to establish minimum requirements.

c. The Contractor shall submit to the Engineer all details of installing the water mains within any type of casing at least 10 days before this construction is to take place. No water mains shall be placed in casings without approval of the Project Engineer. Carrier pipe shall be fitted with runners' spacers in order to assist installation and prevent pipe from excessive vertical movement once installed. Ends of casing shall be fitted with bulkheads.

d. Where noted on the Plans, casing pipe shall be installed by jack and bore methods, and shall conform to the construction requirements of section 728, Paragraph 728.03. casing materials shall be as noted on the plans.
e. Payment shall be as described in the "Measurement and Payment" section of these specifications.
f. Connection to existing Mains: Connection to existing mains shall be made with appropriate fittings as shown on the plans or as directed. When it is necessary to make such connections under pressure (i.e., when normal water service must be maintained) a tapping valve and sleeve shall be used. The Contractor shall furnish the valve tapping machine and other equipment required.

(3) Location: The Contractor shall, before opening pipe line trenches, locate the points where connections are to be made to existing pipe lines and shall uncover as necessary for the Project Engineer to prescribe the types of connections and fittings to be installed.

(d) Interruption of Service: connections to existing pipe lines where permitted shall be made under the direct supervision of the representative of the Jefferson Parish Department of Engineering. The supervisor shall determine the time at which these connections shall be made, and he shall direct the operation of all valves on the existing system, and may operations, which might affect the potability of the water.

(e) Laying Water Mains and Appurtenances:

(1) Sequence of Work: Excavation, cleaning, laying, jointing and backfilling shall be kept up as closely as possible. Pipe shall not be left in the trench overnight without completely jointing and capping. The Contractors shall backfill and compact the trench as soon as possible after laying, jointing and testing is complete. Each day at the close of work, and when laying is not in progress, the exposed end of the pipeline in the trench shall be closed with an approved barrier of wood or metal. If it is necessary to cover the end of an uncompleted pipe line with backfill, the end of the pipe shall be closed using a satisfactory cap or plug.

(2) Alignment and gradient: Pipe line alignment and gradient shall be straight, or shall be deflected to follow true curves as nearly as practical. Deflection of pipe lines shall be within the allowable laying deflection angle, both horizontal and vertical as recommended by the pipe manufacturer.

(3) Installation:

a. Connections: Connections, which are made inside roadway shoulders, or curbs and gutters, shall be made with flexible joints.
b. Cutting: Where pipe or special castings are required to be cut, cutting shall be done using pipe cutters.
c. Gate Valves: Gate valves shall be installed and jointed as specified above for water mains. Installation of gate valves shall include valve boxes, where installed below grade.
d. Fire hydrants: Hydrants shall be installed and jointed as specified above for water mains. Installation of hydrants shall include vertical extension sections if required, pipe straps, concrete or wood blocking, aggregate drain and backfill. Hydrants on all lines shall be installed with a 6" gate valve between the hydrant and the main, as shown on the Plans. All joints shall be flanged or otherwise restrained. All bolts shall be 316 Stainless Steel.
e. Backfilling: Backfilling of all water line trenches shall conform to Subsection 701.08 of the 2000 Louisiana Standard Specifications and amended as follows: Backfill shall be granular material, per section 723 same as for plastic culvert

pipe, except backfill shall be placed and compacted in 6" layers to 985of its maximum density.

f. When testing for leaks in open trenches, backfilling shall not be done until testing has been completed and leaks eliminated.

g. Where adjacent pavements are to be retained, unauthorized removal of pavement for pipe line trenches shall be replaced in kind or when approved, with equal or better material. After backfilling, the contractor shall maintain a satisfactory riding surface until repaving is completed. No separate payment will be made for replaced pavement.

h. Pipe Foundation: Foundation for all water line pipe shall also conform to Subsection 701-08 of the Louisiana Standard Specifications for backfilling and is amended as follows: granular backfill material conforming to Section 723 shall be placed in the trench bottom in a maximum of 6" layers, and compacted to 100% of its maximum density for pipe foundation material, to the depth shown on the plans.

(f) Testing and Disinfection:

(1) Testing: When a section of pipe is approved for testing, the Contractor shall furnish all materials, equipment and labor to properly carry out this operation. This shall include a test pup and means of accurate measurement of water necessary to maintain required pressure during testing. The Contractor shall furnish and install any flanges, plugs, and corporation stops at high points in pipe lines and at the test pump and install (and subsequently remove) any temporary bulkheads, all as necessary.

a. Sequence of Testing: When conditions permit, pipe lines shall be tested before the trench is backfilled and before the service lines are installed; however, if high pressure testing must be done after the service lines are in place, they shall be shut off at the corporation stops. After necessary joints bulkheads, etc. have been installed, corporation stops if not other means can be provided, shall be placed in the high points of the pipe line and at the pump as required, and the pipe bled free of air in accordance with accepted procedures.

b. Test Pressure: All pressure pipe installed shall be subject to a hydrostatic test pressure of at least 100 psi. There shall be no discernable pressure loss. The minimum test period shall be 2 hours. However, if additional testing is required the Contractor shall perform the procedure at his expense. When service lines cannot be isolated (i.e. shut off from the section to be tested), or other conditions exist where pressure testing as described above may tested under normal operating pressure when approved. This work shall be done in open trenches, where possible, and testing repeated until leaks are eliminated

c. Leaks and Defective Materials or Workmanship: Joints which leak shall be remade. Cracked, broken or defective materials shall be replaced. Defective workmanship shall be corrected. After the above conditions have been corrected, the line shall be retested as described above until the line passes the requirements. The Contractor shall receive no additional compensation of the corrections or retesting.

(2) Disinfection: Pipe lines and appurtenances, both exiting and new which are the responsibility of the Contractor, shall be disinfected before being placed in service. The disinfection process may be done in conjunction with the pressure test and shall be in accordance with AWWA C601 and these requirements. A solution of calcium hypochlorite (such as HTH, Perchloron, Clorox, etc.) liquid chlorine or other approved disinfectant shall be used to obtain a solution of at least 50 ppm of available

chlorine throughout the pipe system. No chlorine shall be applied to the pipe as lines are being laid.

a. For this work, the Contractor shall furnish suitable corporation stops, plugs or caps for the pipe, injection pumps, pipe connections and other equipment, and all labor required, at no additional cost to the Owner.
b. While disinfectant is being applied to any section of the system, the water shall be allowed to escape at all extremities of this section until an orthotolidine test shallow a deep orange color. The disinfectant shall be allowed to remain in the pipe at least 6 hours and tests shall be made to determine that a chlorine residual of at least 5 ppm remains. If there is not sufficient residual chlorine, disinfection shall be repeated.
c. After disinfection, lines shall be thoroughly flushed to remove the chlorine. If bacteriological tests indicate that the lines are not free of coliform organisms, the disinfection procedure shall be repeated on that part of the system until proven to be free of contamination.
d. Disinfection shall be made in the presence of the Project Engineer and representative of the Jefferson Parish Department of Engineering. The Contractor shall notify the Project Engineer at least 48 hours prior to the time lines are to be disinfected.
e. The Contractor shall furnish taps, corporation stops, tubing and faucets, and furnish labor to obtain water samples from disinfected lines. The water samples shall be collected and submitted to a biological laboratory of the State Board of Health. Copies of laboratory reports shall be submitted to the Engineer. Disinfection shall be considered acceptable when reports indicate lines to be free of contamination. Lines shall be disinfected as soon after completion of testing as possible.
f. When tests are completed, test risers shall be removed and corporation stops plugged with an approved brass plug.

(g) Laying Service Lines and Appurtenances: Except as modified below, construction and installation of service lines shall conform to the requirements for laying water mains. Service lines shall include complete installation of the new service line piping from the water main to the final location of the meter, or to such points as directed to connect with existing future service lines and abutting property. Installation of service line pipe shall include necessary connections, including unions, valves, fittings, corporation stops, goosenecks where permitted, and curb stops.

(1) Excavation and Backfill:
   a. Excavation: Excavation shall be done as specified elsewhere herein.
   b. Backfill: Backfilling shall be done as specified herein after the leakage test has been made under normal operation pressure in open trenches and leaks eliminated.

(2) Laying and Jointing: Jointing of copper pipe, galvanized steel pipe and plastic pipe shall be in accordance with standard practice for jointing water pipe and approved installation methods. Selected backfill material shall be placed and compacted to 6" above the pipe before proceeding with normal backfill operations.

(3) Service to Existing Water Meters:
   a. Water meters are located generally at the property line, or edge of Right-of-Way, throughout the Project. The Contractor shall be responsible for replacing the service to the existing meters, which are affected by the relocation of the water lines along Causeway Boulevard. Where existing meters are to remain at the edge

of the Right-of-way have been procured, requiring that the meters be relocated, the Contractor shall be responsible for the abandonment of the existing service, and installation of a new service line, in kind and size as existing service line, connecting the proposed water main to the relocated meter. Meters that are relocated will be placed at the direction of the Project Engineer.

b. New service lines to be installed shall be polyethylene tubing, conforming to all requirements of AWWA C901 and ASTM D1248, (Type III, Class C, category 5, grade P34) or the same size as the existing service. Connections shall be accomplished using compression fittings. Service taps at the (main) supply line shall be accomplished using the appropriately sized service saddle and corporation stop. Service saddle shall be stainless steel type, and shall be Cascade Style CS12, Smith –Blair 391, Romac type 202BS or approved equal. The corporation stop shall be bronze with "Mueller" threaded inlet and female L.P. outlet, and shall be Mueller H-10045-10000 Series, or approved equal. The stop shall be provided with an adapter to mate with compression fittings.

(4) Service Transfers: It shall be the Contractor's responsibility to maintain service at all times to all existing metered connections until the service can be transferred to the new water mains. Existing mains, which are to be abandoned under this Project, must be kept in service while construction of the proposed water main progresses. If at any time during the Project it would be required the at the exiting supply main be taken out of normal service, it shall be the Contractor's responsibility to provide a temporary service line, at least 2" in diameter in order to provide temporary service. The temporary supply shall be galvanized iron or schedule 80 PVC, and shall be installed in a shallow (1 foot minimum) trench, or if permissible by the Project Engineer, laid atop the ground and covered with a minimum 9 inches of soil cover. Upon completion of the proposed water main, and subsequent to testing, flushing, sterilization, and acceptance for service by Jefferson Parish Department of Engineering, in whole or in part, the service transfers from the exiting to the new main shall be accomplished for the accepted line. All service transfers shall be witnessed by the Jefferson Parish Department of Engineering, and there shall be no transfers performed without their representation and permission. Twenty-four hour prior notification is required by Jefferson for any meter transfers.

Measurement:

(a) Water Mains: Water mains will be measured by the linear foot along the center, parallel to the slope of the pipe, from end to end of each installation through all fittings and valves.

(b) Fittings: Pipe fittings will be measured by weight of fittings provided and installed.

(c) Gate valves, including boxes when required, will be measured by the number of each size installed.

(d) Tapping sleeve and valve assembly will be measured by the number of each size installed, including valve box and pad.

(e) Fire hydrants will be measured by the number of each installed, including stop off gate valve, valve box and barrier system, as detailed.

(f) Excavation and Backfill: Excavation and excavation material is not intended to be used for backfill and will not be measured for payment. Riversand (granular material) is to be used for foundation and backfill material for the pipeline and will be calculated in net cubic yards for the volume of sand required per Plan details.

(g) Pipe and fittings with restrained joints will be measured as linear foot and tonnage, respectively, of pipe and fittings supplied with restrained joints.

(h) Water meter relocation will be measured by the number of each size tap installed.
(i) Water service line (including temporary service) will be measured by the linear foot of each size line installed.
(j) Water meter service taps will be measured by the number of each size tap installed.
(k) Detection and identification tape for all pipe installation will be measured per 100 lineal footage, or fraction thereof, installed.
(l) Air valve installation will be measured by the number installed.
(m) Incidentals: Any and all pressure testing for the system, including all temporary connections, testing, disinfection and any re-testing or re-disinfection required will not be measured for payment.
(n) Abandonment and removal of existing water line and connected appurtenances will be measured by linear footage of pipe abandoned and removed.

Payment:

(b) Water main pipe will be paid for per linear foot for each pipe installed, which includes excavation, removal and replacement of pavement, testing, sterilizing, and laying pipe in casing when required.
(c) Gate valves will be paid for per each, which includes box if required, and joint connections.
(d) Tapping sleeve and valve assemblies will be paid for per each, which includes joint connections.
(e) Fire hydrants will be paid for each, which includes vertical extensions, stop-off gate valve and valve box joint, connections, pipe straps and stone drain.
(f) Restrained joint ductile iron fittings will be paid for at the total weight of those fittings installed as determined by invoice weight.
(g) Water line detection/identification type will be paid for at the unit price bid per 100 lineal feet, or fraction thereof.
(h) Air valve installations will be paid for per each installed.
(i) Payment for temporary water service lines will be paid for at the unit price bid per foot of line installed.
(j) Payment for water meter relocations shall be made at the price bid for the size of the meter to be relocated, and shall include all work and materials to disconnect the meter and abandoned the existing service from the main, relocate the existing meter and box, and adjust and re-connect the relocated meter to the house connection and new service line.
(k) Payment for water meter service taps shall be made at the price bid for the size of service tap (2", ¾", etc) and shall cover all labor and materials, including service clap, corporation stop, tapping and connection to the service line.
(l) Payment for polyethylene service line (between water main and meter) shall be made at the unit price bid for the size of service line installed.
(m) Payment for treated timber used for thrust blocking will be made at the unit price bid per thousand board foot measurement for "Timber Thrust Blocking".
(n) Payment for riversand (granular material) used for water line foundation will be made at the unit price bid for "Granular Material for Water Line Foundation" in net cubic yards.
(o) Payment for riversand (granular material) used for backfill for water line trenches will be made at the unit price bid for "Granular Material Backfill for Water Line" in net cubic yards.
(p) Payment for abandonment and removal (demolition) of water line and all connected appurtenances will be paid at the unit bid price per foot of pipeline removed.

(q) Payment for water line construction items will be made at the contract unit and lump sum prices under:

Item S-170, 8" PVC Pipe (C-900), per linear foot.
Item S-171, 8" PVC Pipe (C-900) with Restrained Joints, per linear foot.
Item S-172, 8" Ductile Iron Pipe with Restrained Joints, per linear foot.
Item S-173, 6" Ductile Iron Pipe, with Restrained Joints, per linear foot.
Item S-174, Ductile Iron Fittings, per ton.
Item S-175, Ductile Iron Fittings with Restrained Joints, per ton.
Item S-176, Air Valve Installations, per each.
Item S-177, 8" Valve with Restrained Joints, per each.
Item S-178, 6" Valve with Restrained Joints, per each.
Item S-179, Hydrant Installation (Including Valves, etc.), per each.
Item S-180, 2" Meter Relocation, per each.
Item S-181, ¾" Meter Relocation, per each.
Item S-182, 2" P.E. Service Line, per linear foot.
Item S-183, ¾" P.E. Service Line, per linear foot.
Item S-184, 2" Galv. Iron (Sch. 40) Temp. Service Line, per linear foot.
Item S-185, 2" PVC (Sch. 80) Temp. Service Line, per linear foot.
Item S-186, 2" Service Tap, per each.
Item S-187, ¾" Service Tap, per each.
Item S-188, Timber Thrust Blocking, per MFBM.
Item S-189, Granular Material for Water Line Foundation, per cubic yard.
Item S-190, Granular Material Backfill for Water Line, per linear foot.
Item S-191, Water Line Marking Tape, per 100 linear feet.
Item S-192, Abandonment & Removal of All Water Pipe Along Causeway Blvd., per lump sum.

ITEM S-193, POLICE DETAIL FOR I-10 WESTBOUND CLOSURE: This item consists of providing police for the direction of traffic for the I-10 westbound and C-D road closures during construction. Police direction will be needed at all signalized intersections along the Causeway Boulevard and Veterans Memorial Boulevard detour.

The contractor shall be responsible for contacting the State Police and Jefferson Parish Sheriffs Office, to provide police to direct traffic along this detour during the closure of I-10 westbound. The contractor will pay the Jefferson Parish Sheriffs office directly for this work.

The number of hours shown in the Summary of Estimated Quantities is for estimating purposes only. Actual quantity may vary in the field.

Payment will be made at the contract unit price under:

Item S-193, Police Detail for I-10 Westbound Closure, per hour.

ITEM S-194, POLICE DETAIL FOR 1-10 EASTBOUND CLOSURE: This item consists of providing police for the direction of traffic for the I-10 eastbound and C-D road closures during construction. Police direction will be needed at all signalized intersections along the Causeway Boulevard and Veterans Memorial Boulevard detour.

The contractor shall be responsible for contacting the State Police and Jefferson Parish Sheriffs Office, to provide police to direct traffic along this detour during the closure of I-10 eastbound. The contractor will pay the Jefferson Parish Sheriffs office directly for this work.

The number of hours shown in the Summary of Estimated Quantities is for estimating purposes only. Actual quantity may vary in the field.

Payment will be made at the contract unit price under:

Item S-193, Police Detail for I-10 Eastbound Closure, per hour.

ITEM S-195, I-10 WB CLOSURE: This item consists of furnishing all labor and materials needed to install signs, barricades, channelizing devices and other items necessary for providing a detour for the I-10 Westbound traffic, during the I-10 Westbound closures in accordance with plan details, Project Specifications and as directed by the engineer.

The signs shown in the plans are the minimum signs needed for the direction of traffic. Additional signs may be required as directed by the engineer at no additional cost.

I-10 Westbound will have to be closed for the following procedures:

1. Placement of Steel girders for the Span NCW 17.
2. Slab pouring of Span NCW 17.
3. Installation of concrete barrier railing Span NCW 17.

Additional closures may be needed as directed by the engineer. The additional closures will be done at no additional payment, except for the police detail described elsewhere herein.

Payment for the I-10 Westbound closures will be made at the contract lump sum price under:

Item S-195, I-10 WB Closure, per lump sum.

ITEM S-196, I-10 EB CLOSURE: This item consists of furnishing all labor and materials needed to install signs, barricades, channelizing devices and other items necessary for providing a detour for the I-10 Eastbound traffic, during the I-10 Eastbound closures in accordance with plan details, Project Specifications and as directed by the engineer.

The signs shown in the plans are the minimum signs needed for the direction of traffic. Additional signs may be required as directed by the engineer at no additional cost.

I-10 Eastbound will have to be closed for the following procedures:

1. Placement of Steel girders for the Span NCW 16.
2. Slab pouring of Span NCW 16.
3. Installation of concrete barrier railing Span NCW 16.

Additional closures may be needed as directed by the engineer. The additional closures will be done at no additional payment, except for the police detail described elsewhere herein.

Payment for the I-10 Eastbound closures will be made at the contract lump sum price under:

Item S-196, I-10 EB Closure, per lump sum.

ITEM S-197, DYNAMIC MESSAGE SIGN UNIT (12/04): This work consists of furnishing, operating and maintaining solar powered portable dynamic (changeable) message signs to be used at locations designated on the plans or as directed by the engineer.

The dynamic message sign shall be in good operational condition when delivered to the job site. The engineer will inspect the signs, and if they are found to be in good operational condition with all working parts functioning, the signs will be approved for use on the project.

The message sign shall consist of three separate lines. Each line shall consist of eight characters. Each character shall nominally be 18 inches (450 mm) in height. The width shall be adequate to meet the below legibility requirements. Each character shall be a 5 x 7 LED module or hybrid LED disk. Characters shall be separated at a distance such that the legibility requirements are maintained.

All internally illuminated portions of the sign shall be amber in color. All other illuminated surfaces meant for message display shall be fluorescent yellow. All other surfaces on the front panel shall be flat black in color.

The sign shall be clearly visible under all conditions and all lanes of travel from a distance of 1000 feet (300 m) perpendicular to the sign center. The sign shall maintain this legibility throughout the entire project. The contractor shall be responsible for maintaining this minimum legibility. Determination of legibility distance shall rest solely with the engineer.

The portable dynamic message sign shall be used in conjunction with other traffic signs and devices in accordance with the plans, project specifications and as directed by the engineer.

The signs shall be stored in an approved secure storage area when not in use. The contractor shall be required to perform all maintenance operations recommended by the manufacturer and keep adequate records of such operations.

The signs shall be kept clean and in good repair at all times. This includes keeping unit clean.

Measurement of the dynamic message sign unit will be per each.

Payment for the dynamic message signs will be made at the contract unit price per each which will be full compensation for furnishing, operating, relocating and maintaining the unit during the life of the contract and includes all equipment, tools, labor and incidentals necessary for this item of work.

Payment will be made under:

Item S-197, Dynamic Message Sign Unit, per each.

CONTRACT TIME: The entire contract shall be completed in all details and ready for final acceptance in accordance with Subsection 105.17(b) within the time specified by the contractor, which shall not exceed the maximum allowable contract time stated on the "Contract Time" form contained elsewhere herein.

Prior to assessment of contract time, the contractor will be allowed **90 calendar days** from the date stipulated in the Notice to Proceed to commence with portions of the contract work including but not limited to assembly periods, preparatory work for materials fabrications such as test piles, or other activities which hinder progress in the beginning stages of construction. Prior to issuance of the Notice to Proceed, the Department will consider extending the assembly period, upon written request from the contractor justifying the need for additional time.

The contractor shall be responsible for maintenance of traffic from the beginning of the assembly period. During the assembly period, the contractor will be allowed to do patching and other maintenance work necessary to maintain the roadway with no time charges when approved by the engineer.

If the contractor begins regular construction operations prior to expiration of the assembly period, the assessment of contract time will commence at the time construction operations are begun.

The contractor is directed to the special provisions and the plans for any restrictions that may affect work schedules.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS
(FOR 2006 STANDARD SPECIFICATIONS)

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LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

The 2006 Louisiana Standard Specifications for Roads and Bridges and supplemental specifications thereto are amended as follows.

SECTION 101 – GENERAL INFORMATION, DEFINITIONS, AND TERMS:

Subsection 101.03 – Definitions (07/07), Pages 3 – 13).

Delete the definition for "Proposal/Bid Guaranty" and substitute the following.

Proposal / Bid Guaranty. The required security furnished with a bid. The only form of security acceptable is a Bid Bond.

SECTION 102 – BIDDING REQUIREMENTS:

Subsection 102.09 – Proposal / Bid Guaranty (07/07), Page 19.

Delete the contents of this subsection and substitute the following.

PROPOSAL/BID GUARANTY. Each bid shall be accompanied by a proposal/bid guaranty in an amount not less than five percent of the total bid amount when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than $50,000. No proposal/bid guaranty is required for projects when the bidder's total bid amount as calculated by the Department is $50,000 or less. The official total bid amount for projects that include alternates is the total of the bidder's base bid and all alternates bid on and accepted by the Department. The proposal/bid guaranty submitted by the bidder shall be a bid bond made payable to the contracting agency as specified on the bid bond form provided in the construction proposal. No other form of security will be accepted.

The bid bond shall be on the "Bid Bond" form provided in the construction proposal, on a form that is materially the same in all respects to the "Bid Bond" form provided, or on an electronic form that has received Department approval prior to submission. The bid bond shall be filled in completely, shall be signed by an authorized officer, owner or partner of the bidding entity, or each entity representing a joint venture; shall be signed by the surety's agent or attorney-in-fact; and shall be accompanied by a notarized document granting general power of attorney to the surety's signer. The bid bond shall not contain any provisions that limit the face amount of the bond.

The bid bond will be written by a surety or insurance company that is in good standing and currently licensed to write surety bonds in the State of Louisiana by the Louisiana Department of Insurance and also conform to the requirements of LSA-R.S. 48:253.

All signatures required on the bid bond may be original, mechanical reproductions, facsimiles or electronic. Electronic bonds issued in conjunction with electronic bids must have written Departmental approval prior to use. The Department will make a listing of approved electronic sureties providers on the Bidx.com site.

SECTION 108 – PROSECUTION AND PROGRESS:

Subsection 108.04 – Prosecution of Work (03/05) Pages 74 and 75.

Add the following sentence to the third paragraph of Heading (b).

Should the surety or the Department take over prosecution of the work, the contractor shall remain disqualified for a period of one year from the completion of the project, unless debarment proceedings are instituted.

When the Department of Transportation and Development is not the contracting agency on the project, the second paragraph under Heading (c) is deleted.

SECTION 202 – REMOVING OR RELOCATING STRUCTURES AND OBSTRUCTIONS:

Subsection 202.06 – Plugging or Relocating Existing Water Wells (03/04), Page 105.

Delete the first sentence and substitute the following.

All abandoned wells shall be plugged and sealed at the locations shown on the plans, or as directed by the engineer, in accordance with the "Water Well Rules, Regulations, and Standards, State of Louisiana." This document is available at the Department of Transportation and Development, Water Resources Section, P. O. Box 94245, Baton Rouge, Louisiana 70804-9245. The Water Resource Section's telephone number is (225) 274-4172.

SECTION 302 – CLASS II BASE COURSE:

Subsection 302.05 – Mixing (08/06), Pages 152 and 153.

Delete the first sentence of Subheading (b)(1), In-Place Mixing, and substitute the following.

In-place mixing shall conform to Heading (a)(1) except that the percentage of Type I portland cement required will be 6 percent by volume.

SECTION 308 – IN-PLACE CEMENT TREATED BASE COURSE:

All Subsections within Section 308 – (07/07), Pages 191 – 198.

Whenever the reference to "DOTD TR-432, Method D" is used, it shall mean "DOTD TR-432".

SECTION 502 – SUPERPAVE ASPHALTIC CONCRETE MIXTURES:

Subsection 502.02 – Materials (08/06), Pages 210 – 213.

Delete Table 502-3, Aggregate Friction Rating under Subheading (c)(1) and substitute the following.

Table 502-3
Aggregate Friction Rating

Friction Rating	Allowable Usage
I	All mixtures
II	All mixtures
III	All mixtures, except travel lane wearing courses with plan ADT greater than 7000[1]
IV	All mixtures, except travel lane wearing courses[2]

[1] When plan current average daily traffic (ADT) is greater than 7000, blending of Friction Rating III aggregates and Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 30 percent by weight (mass) of the total aggregates shall have a Friction Rating of I, or at least 50 percent by weight (mass) of the total aggregate shall have a Friction Rating of II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

[2] When the average daily traffic (ADT) is less than 2500, blending of Friction Rating IV aggregates with Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 50 percent by weight (mass) of the total aggregate in the mixture shall have a Friction Rating of I or II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

SECTION 704 – GUARD RAIL:

Subsection 704.03 – General Construction Requirements (01/05), Pages 368 and 369.

Add the following to Heading (d), Guard Rail End Treatments.

All end treatments shall bear a label indicating the manufacturer and exact product name of the end treatment along with its assigned NCHRP 350 test level. This label shall resist weathering and shall be permanently affixed to the railing in such a way as to be readily visible.

SECTION 713 – TEMPORARY TRAFFIC CONTROL:

Subsection 713.06 – Pavement Markings (08/06), Pages 400 – 403.

Delete Table 713-1, Temporary Pavement Markings and substitute the following.

Table 713-1
Temporary Pavement Markings[1,2]

		Two-lane Highways	Undivided Multilane Highways	Divided Multilane Highways
SHORT TERM	ADT<1500; or ADT>1500 and time<3 days	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers; with "Do Not Pass" and "Pass With Care" signs as required		
	ADT>1500; Time>3 days and<2 weeks	Lane lines 4-foot (1.2-m) tape on 40-foot (12-m) centers with no passing zone markings		
	All ADT's with time <2 weeks		Lane lines 4-foot (1.2m) tape on 40-foot (12 m) centers; double yellow centerline	Lane lines 4-foot (1.2 m) tape on 40-foot (12 m) centers
LONG TERM	All ADT's with time >2 weeks	Standard lane lines, no-passing zone markings, legends and symbols and when pavement width is 22 feet (6.7 m) or greater, edge lines	Standard lane lines, centerlines, edge lines, and legends and symbols	Standard lane lines, centerlines, edge lines, and legends and symbols.

[1]No-passing zones shall be delineated as indicated whenever a project is open to traffic.
[2]On all Asphaltic Surface Treatments that are open to traffic and used as a final wearing course or as an interlayer, temporary pavement markings (tabs) on 20-foot (6 m) centers shall be used, in lieu of the 4-foot (1.2 m) tape, on 40-foot (12 m) centers.

SECTION 729 – TRAFFIC SIGNS AND DEVICES:
Subsection 729.02 – Materials (04/07), Pages 456 and 457.

Delete the contents of Heading (a), Sign and Marker Sheeting, and substitute the following.

(a) Sign and Marker Sheeting: Sheeting material for sign panels, delineators, barricades and other markers shall comply with Section 1015. All permanent signs shall meet the requirements of ASTM D 4956, Type III, except as follows:

Reflective sheeting for the permanent signs of Table 729-1 shall meet the requirements of ASTM D 4956, Type IX or Type X as modified in Subsection 1015.05.

Table 729-1
Permanent Signs for Use With Type IX or X (modified) Reflective Sheeting

Sign	MUTCD Number
Stop	R1-1
Yield	R1-2
4-Way	R1-3
All Way	R1-4
Do Not Enter	R5-1
Wrong Way	R5-1a
Chevrons	W1-8
No Passing Zone Pennants	W14-3
Type 3 Object Marker	OM-3 (Right & Left)
Type 2 Object Marker	-------
Guardrail End Decals	-------

Subsection 729.04, Fabrication of Sign Panels and Markers (04/07), Pages 458 – 460.

Delete the third paragraph of Heading (c), Sheeting Application and substitute the following.

ASTM D 4956 Type IX or X (modified) reflective sheeting shall be applied with an orientation determined by the engineer to obtain the optimum entrance angle performance. Fabricated vertical splices in ASTM D 4956 Type IX or X (modified) reflective sheeting will be allowed only when the horizontal dimension of the sign face or attached shield is in excess of the maximum manufactured width of the sheeting. Fabricated vertical splices in ASTM D 4956 Type IX or X (modified) reflective sheeting will also be allowed when the specified orientation will create excessive sheeting waste.

SECTION 804 – DRIVEN PILES:

Subsection 804.08 – Construction Requirements (04/07), Pages548 – 554.

Delete the first sentence of Heading (a), Preboring and substitute the following.

Preboring by augering, wet-rotary drilling, or other methods used to facilitate pile driving will not be permitted unless specified in the plans or allowed by the engineer.

Delete the first sentence of Heading (b), Jetting and substitute the following.

Jetting will not be permitted unless allowed in the plans or allowed by the engineer.

SECTION 901 – PORTLAND CEMENT CONCRETE:

Subsection 901.06 – Quality Control of Concrete (08/06), Pages 726 – 731.

Add the following to the contents of Heading (b), Quality Control Tests.

The contractor shall be responsible for monitoring the components (cement, mineral and chemical admixtures, aggregates) in their mix to protect against any changes due to component variations. As component shipments arrive, the contractor shall verify slump, air content and set

time by testing at ambient temperatures. The contractor shall make adjustments to the mix design to rectify any changes which would adversely affect constructability, concrete placement or the specifications. The contractor shall submit test results to the Department for review each day of paving. Testing to validate component consistency will be documented on the control logs. Conformance or variation in mix parameters (workability, set times, air content, etc.) shall be noted on the control logs. The contractor shall provide a copy of the proposed testing plan to the engineer for record. Acceptance of the plan does not relieve the contractor's responsibility for consistency.

Subsection 901.08 – Composition of Concrete (12/05), Pages 732 – 734.

Add the following to Heading (a).

The blended cement containing up to 50 percent of grade 100 or grade 120 ground granulated blast-furnace slag must be in compliance with Subsection 1001.04 for portland blast-furnace slag cement.

SECTION 1003 – AGGREGATES:

Subsection 1003.02 – Aggregates for Portland Cement Concrete and Mortar (07/07), Pages 763 – 766.

Delete the contents of Heading (c), Aggregates for Types B and D Pavements, and substitute the following.

(c) Aggregates for Types B and D Pavements: For the combined aggregates for the proposed portland cement concrete pavement mix, the percent retained based on the dry weight (mass) of the total aggregates shall meet the requirements of Table 1003-1A for the type of pavement specified in the plans. Additionally, the sum of the percents retained on any two adjacent sieves so designated in the table shall be at least 12 percent of the total combined aggregates. The maximum amounts by weight (mass) of deleterious materials for the total aggregate shall be the same as shown in Subsection 1003.02(b).

Table 1003-1A
Aggregates for Types B and D Pavements

U.S. Sieve	Metric Sieve	Percent Retained of Total Combined Aggregates	
		Pavement Type	
		Type B	Type D
2 1/2 inch	63 mm	0	0
2 inch	50 mm	0	0-20
1 1/2 inch	37.5 mm	0-20	0-20
1 inch	25.0 mm	0-20	5-20
3/4 inch	19.0 mm	5-20	5-20
1/2 inch	12.5 mm	5-20	5-20
3/8 inch	9.5 mm	5-20	5-20
No. 4	4.75 mm	5-20	5-20
No. 8	2.36 mm	5-20	5-20
No. 16	1.18 mm	5-20	5-20
No. 30	600 µm	5-20	5-20
No. 50	300 µm	0-20	0-20
No. 100	150 µm	0-20	0-20
No. 200	75 µm	0-5	0-5
Note: For the sieves in the shaded areas, the sum of any two adjacent sieves shall be a minimum of 12 percent of the total combined aggregates.			

Each type of aggregate to be used in the proposed mixture shall be sampled and tested individually. The percent of total combined aggregates retained shall be determined mathematically based on the proportions of the combined aggregate blend. All gradation calculations shall be based on percent of dry weight (mass).

SECTION 1005 – JOINT MATERIALS FOR PAVEMENTS AND STRUCTURES:
Subsection 1005.04 – Combination Joint Former/Sealer (11/05), Pages 782 and 783.

Delete Heading (a) and substitute the following.

(a) Description: This joint former/sealer is intended for use in simultaneously forming and sealing a weakened plane in portland cement concrete pavements.

The material shall consist of an elastomeric strip permanently bonded either mechanically or chemically at the top of each of two rigid plastic side frames and covered with a removable plastic top cap. Side frames shall be of such configuration that when the sealer is inserted into plastic concrete and vibrated, a permanent bond forms between side frames and concrete.

Delete Heading (b)(1) and substitute the following.

(1) Elastomer: The elastomer strip portion of the material shall be manufactured from vulcanized elastomeric compound using polymerized chloroprene or thermoplastic vulcanizate as the base polymer, and shall comply with the following requirements:

Property	ASTM Test Method	Requirements	
		Polymerized Chloroprene	Thermoplastic Vulcanizate
Tensile Strength, kPa, Min.	D 412	12,400	7,400
Elongation at Break, % Min.	D 412	200	400
Hardness, Shore A	D 2240	65 ± 10	65 ± 10
Properties after Aging, 70 h @ 100°C	D 573		
Tensile Strength, % Loss, Max.		20	20
Elongation, % loss, Max.		25	25
Hardness, pts. increase, Max.		10	10
Ozone Resistance, 20% strain or bentloop, 300 pphm in air, 70 h @ 40°C	D 1149	no cracks	no cracks
Oil Swell, IRM 903, 70 h @ 100°C, wt change, % Max.	D 471	45	75

Delete Headings (b)(2) and (b)(3) and substitute the following:

(2) Bond of Elastomer to Plastic: The force required to shear the elastomer from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

(3) Bond of Plastic to Cement Mortar: This bond will be evaluated and shall meet the following requirements:

The force required to separate the cement mortar from the plastic shall be a minimum of 5.0 pounds per linear inch (90 g/mm) of sealer when tested in accordance with DOTD TR 636.

SECTION 1006 – CONCRETE AND PLASTIC PIPE:

Subsection 1006.09 – Plastic Yard Drain Pipe (06/07), Page 789.

Delete the contents of Subheading (a)(3), Ribbed Polyvinyl Chloride Pipe (RPVCP) and substitute the following.

Ribbed Polyvinyl Chloride Pipe (RPVCP): Ribbed Polyvinyl Chloride Pipe shall comply with ASTM F 794, Series 46 or ASTM F 949 (46 psi).

SECTION 1013 – METALS:

Subsection 1013.09 – Steel Piles (08/06) Page 822.

Delete the title and references to "Steel Piles" in this subsection and substitute "Steel H Piles".

SECTION 1015 – SIGNS AND PAVEMENT MARKINGS:

Subsection 1015.04 – Sign Panels (05/07), Pages 832 and 833.

Delete the contents of Heading (a), Permanent Sign Panels and substitute the following.

(a) Permanent Sign Panels: Flat panels shall be aluminum sheets or plates complying with ASTM B 209, Alloy 6061-T6 or Alloy 5052-H38. Extruded aluminum panels shall comply with ASTM B 221 (ASTM B 221M), Alloy 6063-T6 and after fabrication, have a flatness equal to or less than 0.031 inch per foot of length and 0.004 inch per inch of width.

Subsection 1015.05 - Reflective Sheeting (05/07), Pages 833 – 838.

Add the following to Heading (a), Permanent and Temporary Standard Sheeting.

Type X (Modified) (White, Yellow, Red) - A super high-intensity retroreflective sheeting having highest retroreflectivity characteristics at medium distances. This sheeting is typically an unmetalized microprismatic retroreflective element material. This material shall meet the requirements of ASTM D 4956 Type X except as modified below.

(1) Retroreflectivity: Minimum Coefficients of Retroreflection for Type X (Modified) White, Yellow, and Red sheeting shall be as specified in Table 1015-a.

Table 1015-a
Coefficients of Retroreflection for Type X (Modified) Sheeting[1]

Observation Angle, degrees	Entrance Angle, degrees	White	Yellow	Red
0.2	-4	600	450	90
0.2	+30	300	225	45
0.5	-4	240	180	36
0.5	+30	120	90	18

[1]Minimum Coefficient of Retroreflection (R_A) (cd $lx^{-1}m^{-2}$)

Heading (d), Accelerated Weathering.

Delete Table 1015-3, Accelerated Weathering Standards and substitute the following.

Table 1015-3
Accelerated Weathering Standards[1]

Type	Retroreflectivity[2]				Colorfastness[3]	
	Orange		All colors, except orange		Orange	All colors, except orange
III	1 year	80[4]	3 years	80[4]	1 year	3 years
III (for drums)	1 year	80[4]	1 year	80[4]	1 year	1 year
VI	1/2 year	50[5]	1/2 year	50[5]	1/2 year	1/2 year
IX	Not used		3 years	80[6]	Not used	3 years
X (Fluorescent Orange)	1 year	80[7]	Not used		1 year	Not used
X (Modified)	Not used		3 years	80[8]	Not used	3 years

[1]At an angle of 45° from the horizontal and facing south in accordance with ASTM G 7 at an approved test facility in Louisiana or South Florida.
[2]Percent retained retroreflectivity of referenced table after the outdoor test exposure time specified.
[3]Colors shall conform to the color specification limits of ASTM D 4956 after the outdoor test exposure time specified.
[4]ASTM D 4956, Table 8.
[5]ASTM D 4956, Table 13.
[6]ASTM D 4956, Table 3.
[7]ASTM D 4956, Table 4.
[8] DOTD Standard Specifications, Table 1015-a.

Heading (e), Performance.

Delete Table 1015-4, Reflective Sheeting Performance Standards and substitute the following.

Table 1015-4
Reflective Sheeting Performance Standards

Type	Retroreflectivity[1] -- Durability[2]				Colorfastness[3]
	Orange		All colors, except orange		
III	3 years	80[4]	10 years	80[4]	3 years
IX	Not used		7 years	80[5]	3 years
X (Fluorescent. Orange)	3 years	80[6]	Not used		3 years
X (Modified)	Not used		7 years	80[7]	3 years

[1]Percent retained retroreflectivity of referenced table after installation and the field exposure time specified.
[2]All sheeting shall maintain its structural integrity, adhesion and functionality after installation and the field exposure time specified.
[3]All colors shall conform to the color specification limits of ASTM D4956 after installation and the field exposure time specified.
[4]ASTM D4956, Table 8.
[5]ASTM D 4956, Table 3.
[6]ASTM D 4956, Table 4.
[7] DOTD Standard Specifications, Table 1015-a.

Heading (g), Sheeting Guaranty.

Delete Table 1015-5, Manufacturer's Guaranty-Reflective Sheeting and substitute the following.

Table 1015-5
Manufacturer's Guaranty-Reflective Sheeting

Type	Manufacturer shall restore the sign face in its field location to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below		Manufacturer shall replace the sheeting required to restore the sign face to its original effectiveness at no cost to the Department if failure occurs during the time period[1] as specified below
	Orange	All colors, except orange	All colors, except orange
III	<3 years	<7 years	7-10 years
IX	Not used	<5 years	5-7 years
X (Fluorescent Orange)	<3 years	Not used	**Not used**
X (Modified)	Not used	< 5 years	**5-7 years**

[1]From the date of sign installation.

Subsection 1015.11 - Preformed Plastic Pavement Marking Tape (06/07), Pages 842 – 844.

Delete the contents of this subsection and substitute the following.

1015.11 PREFORMED PLASTIC PAVEMENT MARKING TAPE.

(a) General: Preformed plastic pavement marking tape shall be approved products listed on QPL 64 and shall comply with ASTM D4505 Retroreflectivity Level I or Level II, or DOTD Intersection Grade (as specified below), except as modified herein. The marking tape shall be Class 2 or 3. The type and color shall be in accordance with the plans and the MUTCD.

(b) Thickness: All preformed plastic pavement marking tape shall have a minimum overall thickness of 0.060 inches (1.5 mm) when tested without the adhesive.

(c) Friction Resistance: The surface of the Retroreflectivity Level II preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 35 British Polish Number (BPN) when tested according to ASTM E303. The surface of the Retroreflectivity Level I and DOTD Intersection Grade preformed plastic pavement marking tape shall provide a minimum frictional resistance value of 45 BPN when tested according to ASTM E303. Values for the Retroreflectivity Level I material with a raised surface pattern as defined in ASTM D4505 are calculated by averaging values taken at downweb and at a 45 degrees angle from downweb.

(d) Retroreflective Requirements: The preformed plastic pavement marking tape shall have the minimum initial specific luminance values shown in Table 1015-7 when measured in accordance with ASTM D 4061.

Table 1015-7
Specific Luminance of Preformed Plastic Tape

Type	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
Retroreflectivity Level I	1.05	88.76	500	300
DOTD Intersection Grade	1.05	88.76	375	250
Retroreflectivity Level II	1.05	88.76	250	175

(e) Durability Requirements: The DOTD Intersection Grade preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 12 months after placement when placed in accordance with the manufacturer's recommended procedures on pavement surfaces having a daily traffic count not to exceed 15,000 ADT per lane.

The Retroreflectivity Level I preformed plastic pavement marking tape shall show no appreciable fading, lifting or shrinkage for a least 4 years after placement for longitudinal lines and at least 2 years after placement for symbols and legends.

The Retroreflectivity Level I preformed plastic pavement marking tape shall also retain the following reflectance values for the time period detailed in Table 1015-8.

Table 1015-8
Retained Specific Luminance for Retroreflectivity Level I
Preformed Plastic Pavement Marking Tape

Time	Observation Angle, degrees	Entrance Angle, degrees	Specific Luminance (mcd/sq m/lx)	
			White	Yellow
1 year	1.05	88.76	400	240
4 years (2 years for symbols and legend)	1.05	88.76	100	100

(f) Plastic Pavement Marking Tape Guaranty (DOTD Intersection Grade and Retroreflectivity Level I): If the plastic pavement marking tape fails to comply with the performance and durability requirements of this subsection within 12 months for DOTD Intersection Grade and 4 years for Retroreflectivity Level I, the manufacturer shall replace the plastic pavement marking material at no cost to the Department.

SECTION 1020 – TRAFFIC SIGNALS:

Subsection 1020.01 – Traffic Signal Heads (06/07), Pages 873 – 884.

Delete the contents of Heading (a), General Requirements and substitute the following.

(a) General Requirements: Traffic signal sections, beacon sections and pedestrian signal sections shall be of the adjustable type. Materials and construction of each section shall be the same.

Signals shall be constructed for either 8 or 12-inch (200 mm or 300 mm) lens in accordance with the plans. Signal sections shall have three to five sections per face and beacon

sections have only one section per face. Signal sections and associated brackets shall be finished inside and out with two coats of high grade dark olive green enamel, color number 14056 according to Federal Standard No. 595b with each coat independently baked. Visors shall be coated green on the outside and black on the inside. Edges shall be deburred and smooth with no sharp edges.

Subsection 1020.04 – Poles for Traffic Signal Systems (06/07), Pages 890 – 894.

Delete the sixth paragraph of Heading (a), Pedestal Support Signal Poles, and substitute the following.

Pedestals shall be finished with at least one coat of rustproofing primer, applied to a clean surface and one coat of dark olive green enamel, color number 14056 according to Federal Standard No. 595b.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

SECTION 741
WATER DISTRIBUTION SYSTEM

The 2006 Standard Specifications are amended to include this Section 741.

741.01 DESCRIPTION: This work consists of furnishing the necessary materials and installing, relocating and adjusting water distribution systems in accordance with these specifications and in conformity with the lines and grades shown on the plans or established by the engineer.

741.02 MATERIALS: A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required for each item.

(a) Cast Iron and Ductile Iron Pipe:

(1) Cast Iron Pipe: Cast iron pipe shall be made of grey cast iron and shall conform to ANSI A 21.6 (centrifugally cast in metal molds) or A 21.8 (centrifugally cast in sand lined molds). Iron in the pipe shall have a bursting tensile strength of at least 21,000 psi (145 MPa) and the pipe shall have a ring modulus of rupture of at least 45,000 psi (310 MPa).

(2) Ductile Iron Pipe: Ductile iron pipe shall consist of ductile cast iron and shall conform to ANSI A 21.51 (centrifugally cast in metal or sand lined molds).

(3) Fittings: Fittings for cast iron or ductile iron pipe shall conform to ANSI A 21.10.

(4) Coating and Lining of Pipe: Cast iron and ductile iron pipe and fittings shall be asphalt or vinyl coated outside, as specified, and cement lined and seal coated inside in accordance with ANSI A 21.4.

(5) Joints: Pipe joints shall conform to ANSI A 21.11 with the following criteria used for joint selection.

a. Mechanical Joint (Type III) with alloy steel bolts and nuts.
b. Boltless single gasket push-on joint.
c. Submarine, flexible, ball and socket joint.
d. Flanged joint.

Pipe shall be installed with joint types (a) or (b) for mains under normal service conditions, joint type (c) for stream or canal crossings and when specified, joint type (d) for above ground installations such as pumps.

(b) Gate Valves and Valve Boxes:

(1) Valves shall be non-rising stem, iron body, bronze mounted, double-disk gate valves conforming to AWWA C 500. Valves shall have mechanical joint ends except that valves used with 2 inches (50 mm) or less diameter pipe, or galvanized iron pipe, shall have threaded ends. Valves shall open counterclockwise and shall be operated by nut method. Operating nuts shall conform to that used by the utility system.

(2) Valve boxes shall be approved cast iron, 2-piece, heavy roadway type. Valve boxes for 12 inches (300 mm) or larger valves shall be of the 3-piece type with oval base. The term "water" shall be cast on each valve box cover.

(c) Tapping Sleeves and Valves: Tapping sleeves shall be the split- sleeve, mechanical joint type. Gate valve connections shall be mechanical joint. Sleeves shall meet the requirements for cast iron fittings except the cement lining will not be required. Minimum working pressure shall be that specified for the system.

(d) Fire Hydrants: Fire hydrants shall conform to AWWA Designation: C 502 for 3-way type hydrants with working pressure of 150 psi (1.0 MPa). Hydrants shall be compression type and inlet connections shall be mechanical joint bell. Two 2 1/2 inches (65 mm) hose nozzles and one 4 1/2 inches (115 mm) pumper nozzle shall be provided; hose connections shall have National Standard threads. Hydrants shall have bronze seal rings, automatic drain openings and 0-ring seals. Minimum valve openings of 4 inches shall be provided. Hydrants shall contain a breakaway feature at ground level consisting of breakaway bolts or flange and breakaway coupling on the rod. Main valve and valve seat shall be replaceable without digging up the hydrant. The hydrant exterior shall be painted with approved enamel and shall be repainted after installation (color: yellow).

(e) Plastic Pipe: Plastic pipe and tubing shall be polyvinyl chloride or polyethlene pipe and tubing.

(1) Polyvinyl chloride (PVC) pipe shall conform to ASTM D 2241 and be pressure rated at 200 psi (1.3 MPa) minimum. The pipe shall be made from polyvinyl chloride compounds conforming to Class 12454B (Type 1, Grade 1), ASTM D 1784.

(2) Polyethylene (PE) pipe and tubing shall conform to ASTM D 2239 (pipe) and D 2737 (tubing). Pipe or tubing shall be rated for use with water at 73.4°F (23°C) at a hydrostatic design stress of 630 psi (4.3 MPa). Pipe or tubing shall be made from polyethylene plastics conforming to Type III, Grade 3, ASTM D 1248.

(3) When specified, Schedule 40 PVC shall be in accordance with ASTM D 1785, Schedule 40, PVC 1120.

(4) Plastic pipe and fittings must bear the seal or "NSF" mark of the National Sanitation Foundation or other approved marking indicating approval for use in transporting potable water.

(5) Welding Solvent and Solvent Thinner shall conform to ASTM D 2564.

(f) Galvanized Steel Pipe: These pipes and fittings shall be galvanized steel seamless pipe conforming to ASTM A 53 (A 53M), standard weight. Fittings shall be malleable iron conforming to ANSI B 16.3 except the nipples and couplings shall be the same material as the pipe. Fittings shall be galvanized in accordance with ASTM A 53 (A 53M).

(g) Copper Pipe or Tubing: This pipe shall conform to ASTM B 88, Type K. Copper fittings shall be of the cast pattern or wrought pattern. Fittings for rigid copper pipe shall be of the solder joint type. Fittings for conceded soft draw pipe may be the flared mechanical type. Unions shall be the ground joint type.

(h) Detection Wire for Plastic Pipe: An approved electrically conductive insulated wire or tape shall be installed directly over and on the center of the plastic pipe for its entire length within highway right-of-way to facilitate locating of line with an electronic pipe locator. Wire or tape must be connected to all fixtures and appurtenances.

741.03 CONSTRUCTION REQUIREMENTS:

(a) General:

(1) Handling: Pipe, fittings and other materials shall be carefully handled to prevent breakage or damage, especially to the cement mortar lining in pipe and fittings.

(2) Existing Underground Utilities and Obstructions: All water lines, gas lines, telephone conduits, drainage structures, etc. shall be located and protected by the contractor during construction.

(b) Trench Excavation:

(1) Excavation: Excavation shall conform to Subsections 701.03 and 701.04, and the following requirements.

a. Protection of Excavation: Sheeting, shoring and hand excavation shall be used as necessary for protection of the work. Sheeting shall be withdrawn as backfilling is being done, except where the engineer directs that the sheeting and shoring be left in place, or where the engineer permits the sheeting to be left in place. The contractor shall cut off any sheeting left in place at least 18 inches (450 mm) below finished grade. Sheeting and bracing will not be paid for directly.

b. Trench Depth: Minimum bury (depth from grade to top of pipe) under pavement or surfacing shall be 4 feet (1.2 m). Minimum bury under ditches and in other non-paved areas shall be 2 feet (0.6 m).

c. Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at each joint location to permit the joint to be properly made and the pipe barrel to rest firmly on the trench bottom.

(2) Under Pavement:

a. Removing Pavement: The contractor shall remove existing pavement as necessary for trench excavation. Pavement shall be cut back from the top edges of trenches at least 24 inches (0.6 m) on each side of the trench. The requirements of Sections 510 and 602 shall be followed for removing and replacing pavement except that no separate payment will be made for this work.

b. Jacking and Boring: The contractor may elect to jack or bore pipe under existing pavement where practical; however, separate payment for jacked or bored pipe will only be made when jacking or boring of pipe is specified. Jacked or bored pipe shall be installed in accordance with Section 728.

(c) Connection to Existing Mains: Connection to existing mains shall be made with appropriate fittings as shown on the plans or as directed. When it is necessary to make such connections under pressure (i.e., when normal water service must be maintained) a tapping sleeve and valve shall be used. The contractor shall furnish the valve tapping machine and other equipment required.

(1) Location: The contractor shall, before opening pipe line trenches, locate the points where connections are to be made to existing pipe lines and shall uncover as necessary for the engineer to prescribe the types of connections and fittings to be installed.

(2) Interruption of Service: Connections to existing pipe lines shall be made at such times and in such manner as will meet operating requirements. No cut shall be made in existing lines until permission has been obtained as to time and manner of making cuts and connections.

(d) Laying Water Mains and Appurtenances:

(1) Sequence of Work: Excavation, cleaning, laying, jointing and backfilling shall be kept up as closely as possible. Pipe shall not be left in the trench overnight without completely jointing and capping. The contractor shall backfill and compact the trench as soon as possible after laying, jointing and testing is complete. Each day at the close of work, and when laying is not in progress, the exposed end of the pipe line in the trench shall be closed with an approved barrier of wood or metal. If it is necessary to cover the end of an uncompleted pipe line with backfill, the end of the pipe shall be closed using a satisfactory cap or plug.

(2) Alignment and Gradient: Pipe line alignment and gradient shall be straight, or shall be deflected to follow true curves as nearly as practical. Deflection of pipe lines shall be within the allowable laying deflection angle, both horizontal and vertical.

(3) Installation:

a. Connections: Connections which are made inside roadway shoulders, or curbs and gutters, shall be made with flexible joints.

b. Cutting: Where pipe or special castings are required to be cut, cutting shall be done using pipe cutters.

c. Gate Valves: Gate valves shall be installed and jointed as specified above for water mains. Installation of gate valves shall include valve boxes, where required.

d. Fire hydrants: Hydrants shall be installed and jointed as specified above for water mains. Installation of hydrants shall include vertical extension sections if required, pipe straps, concrete blocking, aggregate drain and backfill.

e. Concrete Blocking: Concrete blocking shall be Class R concrete conforming to Section 901 and shall be formed and poured at the backs of fittings, including elbows, tees, pipe plugs, fire hydrants and other locations shown on the plans or directed by the engineer.

f. Backfilling: Backfilling shall conform to Subsection 701.08 and these requirements.

When testing for leaks in open trenches, backfilling shall not be done until testing has been completed and leaks eliminated.

Where adjacent pavements are to be retained, pavement removed for pipe line trenches shall be replaced in kind or when approved, with equal or better material. After backfilling, the contractor shall maintain a satisfactory riding surface until repaving is completed. No separate payment will be made for replaced pavement.

g. Testing and Disinfection:

1. Testing: When a section of pipe is approved for testing, the contractor shall furnish all materials, equipment and labor to properly carry out this operation. This shall include a test pump and means of accurate measurement of water necessary to maintain required pressure during testing. The contractor shall furnish, install and remove any temporary bulkheads, flanges, plugs and corporation stops at high points in pipe lines and at the test pump, as necessary.

A. Sequence of Testing: When conditions permit, pipe lines shall be tested before the trench is backfilled and before service lines are installed; however, if high pressure testing must be done after service lines are in place, they shall be shut off at the corporation stops.

After necessary joints, bulkheads, etc. have been installed, corporation stops, if no other means can be provided, shall be placed in the high points of the pipe line and at the pump as required, and the pipe blown free from air according to accepted procedure.

B. Test Pressure: Test pressure shall be 50 psi (0.3 MPa) higher than the designated class pressure of pipe and fittings. Leakage shall not exceed 15 gallons per inch (1.4 L/mm) of pipe diameter per mile (km) per 24 hours. The minimum test period shall be 2 hours. However, if additional testing is required the contractor shall perform the procedure at his expense. When service lines cannot be isolated (i.e., shut off from the section to be tested), or other conditions exist where pressure testing as described above may cause damage, the line may be tested under normal operating pressure when approved. This work shall be done in open trenches, where possible, and testing repeated until leaks are eliminated.

C. Leaks and Defective Materials or Workmanship: Joints which leak shall be remade. Cracked, broken or defective materials shall be replaced. Defective workmanship shall be corrected. After the above conditions have been corrected, the line shall be retested as described above until the line passes the requirements. The contractor shall receive no additional compensation for the corrections or retesting.

2. Disinfection: Pipe lines and appurtenances, both existing and new which are the responsibility of the contractor, shall be disinfected before being placed in service. The disinfection process may be done in conjunction with the pressure test and shall be in accordance with AWWA C 601 and these requirements.

A solution of calcium hypochlorite or sodium hypochlorite (such as HTH, Perchloron, Chlorox, etc.) liquid chlorine or other approved disinfectant shall be used to obtain a solution of at least 50 ppm of available chlorine throughout the pipe system. No chlorine shall be applied to pipe as lines are being laid.

For this work, the contractor shall furnish suitable corporation stops, plugs or caps for the pipe, injection pumps, pipe connections and other equipment, and all labor required, at no additional cost to the Department.

While disinfectant is being applied to any section of the system, the water shall be allowed to escape at all extremities of this section until an orthotolidine test shows a deep orange color. The disinfectant shall be allowed to remain in the pipe at least 6 hours and tests shall be made to determine that a chlorine residual of at least 5 ppm remains. If there is not sufficient residual chlorine, disinfection shall be repeated. After disinfection, lines shall be thoroughly flushed to remove the chlorine. If bacteriological tests indicate that the lines are not free of coliform organisms, the disinfection procedure shall be repeated on that part of the system until proven to be free of contamination.

Disinfection shall be made in the presence of the engineer. The contractor shall notify the engineer at least 48 hours prior to the time lines are to be disinfected. The contractor shall furnish taps, corporation stops, tubing and faucets, and furnish labor to obtain samples of water from disinfected lines. These shall be collected and submitted to a biological laboratory of the State Board of Health. Copies of laboratory reports shall be submitted to the engineer. Disinfection shall be considered acceptable when reports indicate lines to be free of contamination. Lines shall be disinfected as soon after completion of testing as possible.

When tests are completed, test risers shall be removed and corporation stops plugged with an approved brass plug.

(e) Laying Service Lines and Appurtenances: Except as modified below, construction and installation of service lines shall conform to the requirements for laying water mains. Service lines shall include complete installation of the new pipe from the water main to the final location of the meter, or to such points as directed to connect with existing or future service lines and abutting property. Installation of service line pipe shall include necessary connections, including unions, valves, fittings, corporation stops, goosenecks where permitted, and curb stops.

(1) Excavation and Backfill:

a. Excavation: Excavation shall be done as specified elsewhere herein.

b. Backfill: Backfilling shall be done as specified herein after leakage test has been made under normal operation pressure in open trenches and leaks eliminated.

(2) Laying and Jointing: Jointing of copper pipe, galvanized steel pipe and plastic pipe shall be in accordance with standard practice for jointing water pipe and approved installation methods. Plastic pipe shall be placed in the trench to allow at least 1 percent additional length of pipe for thermal connection, and selected backfill material shall be placed and compacted to 6 inches above pipe before proceeding with normal backfill operations.

(f) Relocations, Adjustments and Removals:

(1) Water Valves, including valve boxes and fire hydrants, shall be relocated, adjusted to grade or removed as shown on the plans or as designated. The contractor shall protect all parts during the removing and relocating operation and shall replace all items lost or damaged at his expense. All lead or composition joints shall be melted out and each joint disconnected before being removed from the trench.

Relocated gate valves or fire hydrants shall be installed as specified for new gate valves or fire hydrants. Concrete blocking will be required for fire hydrants. Leakage tests shall be performed as specified above. Backfilling shall be done as specified herein. Concrete blocking and any additional pipe required in resetting the gate valve or fire hydrant at its new location will be paid for separately. Valve boxes, when they exist, shall be considered to be a part of the valve assembly and shall be removed with the valve.

(2) Existing water meters and boxes shall be relocated as shown on the plans or as designated. Relocation shall include removing the existing meter, meter box, all required pipe, unions and appurtenances, storage, protection where necessary, and reinstalling the meter, meter box and curb stop in the existing service line as directed. The contractor, with the engineer, shall inspect each meter before its removal to determine its condition. If a meter is defective, the contractor will be furnished a replacement meter for the installation.

(3) Existing water service lines shall be adjusted to grade, by excavating for, and lowering or raising the existing service lines and backfilling at the same location, as shown on the plans or directed. Any new materials or fittings required for the adjustment shall be furnished by the contractor without additional compensation. He shall also make any required changes in the connection at the main which are the result of this work. All leaks and damage caused by the contractor's operations shall be repaired at his expense. If a water meter is to be retained at the same location in an existing service line that is to be adjusted, the meter and box shall also be adjusted to proper grade. No additional compensation will be allowed for this adjustment.

(4) Existing water meter and water valve boxes shall be lowered or raised to the grade established on the plans or by the engineer.

(5) Existing house connections shall be adjusted as required. New pipe and fittings required to adjust house connections shall be equal in quality to that of the existing installation and meet requirements of the utility and code.

741.04 MEASUREMENT:

(a) Water Mains: Water mains will be measured by the linear foot (lin m) along the center, parallel to the slope of the pipe, from end to end of each installation through all fittings.

(b) Fittings: Pipe fittings will be considered subsidiary to the water line in which they are used.

(c) Gate valves, including boxes when required, will be measured by the number of each size installed.

(d) Tapping sleeve and valve assembly will be measured by the number of each size installed.

(e) Fire hydrants will be measured by the number of each installed.

(f) Service Lines: Service lines will be measured by the linear foot (lin m) from end to end, and from center of lines to ends of branches, including valves and fittings.

(g) Relocating Fire Hydrants, Water Valves and Water Meters: Existing fire hydrants, water valves and water meters will be measured by the number of each relocated, including relocation of boxes for such valves and meters.

(h) Adjusting Meter Boxes and Valve Boxes: Existing meter boxes and valve boxes adjusted to grade in their original locations will be measured by the number adjusted.

(i) Removal of Water Valves and Fire Hydrants: Existing water valves, including boxes when necessary, and fire hydrants will be measured by the number of each removed.

(j) Excavation and Backfill: Excavation and backfill will not be measured for payment.

(k) Concrete Blocking: Concrete blocking will be measured by the cubic yard (cu m) of concrete used.

(l) Adjusting Water House Connections: This item will be measured by the number of house connections adjusted.

(m) Adjusting Service Lines to Grade: This item will be measured in linear feet (lin m) of service line pipe lowered or raised, including valves, fittings, meters, boxes and other appurtenances. Measurement will be made from end to end of adjusted service line.

(n) Incidentals: Pavement removed and replaced, including sawing, testing, disinfection and detection wire for plastic pipe, will not be measured for payment.

(o) Casing will be measured by the linear foot (lin m) along the center, parallel to the slope of the casing.

(p) Butterfly valves, including boxes when required, will be measured by the number of each installed.

(q) Double strap saddles will be measured by the number of each installed.

741.05 PAYMENT:

(a) Water main pipe will be paid for per linear foot (lin m) for each size of pipe installed, which includes fittings, excavation, backfilling, removal and replacement of pavement, testing, sterilizing, and laying pipe in casing when required.

(b) Gate valves will be paid for per each, which includes box if required, and joint connections.

(c) Tapping sleeve and valve assemblies will be paid for per each, which includes joint connections.

(d) Fire hydrants will be paid for per each, which includes vertical extensions, joint connections, pipe straps and stone drain.

(e) Service line pipe will be paid for per linear foot (lin m), which includes excavation, backfilling, removal and replacement of pavement, testing, sterilizing, corporation and curb stops, goosenecks where required, fittings, jointing, connecting to the main, and laying pipe in casing when required.

(f) Relocating fire hydrant will be paid for per each, which includes crushed stone drain.

(g) Relocating water valve including box will be paid for per each, which includes excavation and backfill.

(h) Relocating water meter including box will be paid for per each set, which includes excavation and backfill.

(i) Adjusting water house connections will be paid for per each, which includes necessary adjustment of service lines not exceeding 20 linear feet (6.1 lin m) per house connection, and required new pipe and fittings.

(j) Adjusting water service lines in excess of 20 linear feet (6.1 lin m) per house connection will be paid for per linear foot (lin m) of adjusted service line, which includes required new pipe and fittings.

(k) Adjusting meter boxes and valve boxes to grade will be paid for per each.

(l) Removal of water valves will be paid for per each, which includes valve box.

(m) Removal of fire hydrants will be paid for per each.

(n) Concrete blocking will be paid for per cubic yard (cu m).

(o) Casing will be paid for per linear foot (lin m), which includes excavation, backfilling, and removal and replacement of pavement.

(p) Butterfly valves will be paid for per each size, which includes box if required, and joint connections.

(q) Double strap saddles will be paid for per each, which includes joint connections.

(r) Payment will be made at the contract unit prices under:

Item No.	Pay Item	Pay Unit
741-01	Water Main (Size & Type)	Linear Foot (Lin m)
741-02	Gate Valve (Size)	Each
741-03	Tapping Sleeve and Valve Assembly (Size)	Each
741-04	Fire Hydrant	Each
741-05	Water Service Line (Size & Type)	Linear Foot (Lin m)
741-06	Relocating Fire Hydrant	Each
741-07	Relocating Water Valve	Each
741-08	Relocating Water Meter	Each
741-09	Adjusting Water House Connections	Each
741-10	Adjusting Water Service Lines	Linear Foot (Lin m)
741-11	Adjusting Water Valve and Meter Box	Each
741-12	Removing Water Valve Including Box	Each
741-13	Removing Fire Hydrant	Each
741-14	Concrete Blocking	Cubic Yard (Cu m)
741-15	Casing (Size & Type)	Linear Foot (Lin m)
741-16	Butterfly Valve (Size)	Each
741-17	Double Strap Saddle (Size)	Each

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

SECTION 742
SANITARY SEWER SYSTEMS

The 2006 Standard Specifications are amended to include this Section.

742.01 DESCRIPTION. This work consists of furnishing the necessary materials and installing, relocating and adjusting sanitary sewers and appurtenances in accordance with these specifications and in conformity with the lines and grades shown on the plans or established by the engineer.

Sewer manholes and junction boxes shall be constructed or reconstructed in accordance with the plans and Section 702.

The contractor shall coordinate his work activities with utility owners in accordance with Subsections 105.06 and 107.20 and shall observe all laws in accordance with Subsection 107.01.

742.02 MATERIALS. A certificate of compliance from the manufacturer showing the chemical and physical properties of the materials used and conformance with the specifications will be required in accordance with Subsection 106.04.

When the item "Sanitary Sewer Pipe" is included in the contract, the contractor has the option of furnishing any of the following materials unless otherwise specified.

(a) Cast Iron and Ductile Iron Pipe:

(1) Cast Iron Pipe: Cast iron pipe shall be made of gray cast iron and shall conform to ANSI A 21.6 (centrifugally cast in metal molds) or A 21.8 (centrifugally cast in sand lined molds). The iron in the pipe shall have a bursting tensile strength of at least 21,000 psi (145 MPa) and shall have a ring modulus of rupture of at least 45,000 psi (310 MPa). Pipe shall have thickness corresponding to Class 25 of A 21.6 or A 21.80.

(2) Ductile Iron Pipe: Ductile iron pipe shall consist of ductile cast iron and shall conform to ANSI A 21.51 (centrifugally cast in metal or sand lined molds). Pipe shall have thickness corresponding to Class 5 of A 21.51.

(3) Fittings: Fittings for cast iron or ductile iron pipe shall conform to ANSI A 21.10.

(4) Coating: The exterior and interior of pipe and fittings shall be covered with an approved bituminous coating in accordance with the above specifications.

(5) Joints: Pipe joints shall conform to ANSI A 21.11 and shall be the following types, as specified.

a. Mechanical Joint (Type III) with alloy steel bolts and nuts.
b. Boltless single gasket and push-on joint.
c. Submarine, flexible, ball and socket joint.
d. Flanged joint.

Flange bolts in contact with sewage or sludge shall be stainless steel or bronze.

(b) Clay Pipe: Vitrified clay sewer pipe and fittings shall conform to ASTM C 700 and shall have compression joints conforming to ASTM C 425. Pipe 6 inches (150 mm) and under shall be "Standard Strength Clay Pipe", and above 6 inches (150 mm) shall be "Extra Strength Clay Pipe".

(c) Plastic Pipe:

(1) Acrylonitrile-Butadiene-Styrene (ABS): Pipe and fittings shall conform to ASTM D 2680 for composite-wall pipe, and ASTM D 2751 (SDR 35) for solid-wall pipe.

(2) Polyvinyl Chloride (PVC): Pipe and fittings shall conform to ASTM D 3034, Type PSM (SDR 35).

(3) Detection Wire for Plastic Pipe: An approved electrically conductive insulated wire or tape shall be installed on the center of the plastic pipe for its entire length within highway right-of-way to facilitate location of line with an electronic pipe locator. Wire or tape must be connected to all fixtures and appurtenances.

(d) Concrete Sewer Pipe: Nonreinforced concrete sewer pipe shall conform to ASTM C 14 (C 14M), Class 2. Joints shall be Type 3 in accordance with Subsection 1006.05.

(e) Reinforced Concrete Sewer Pipe: Reinforced Concrete Sewer Pipe shall conform to Subsection 1006.03. Joints shall be Type 3 in accordance with Subsection 1006.05.

742.03 MAINTENANCE OF SEWAGE FLOW. The contractor shall maintain continuous flow of sewage during relocation operations. No diversion of sewage flow into open trenches or streams will be permitted.

742.04 CONSTRUCTION REQUIREMENTS.

(a) General: Underground water lines, gas lines, telephone conduits, drainage structures, etc. shall be located and protected by the contractor during construction.

(b) Trench Excavation:

(1) Excavation: The requirements of Subsections 701.03 and 701.04 and these additional requirements shall be met.

a. Protection of Excavation: Sheeting, shoring and hand excavation shall be used as necessary for protection of the work. Sheeting in excavation shall be withdrawn as backfilling is being done, except where the engineer directs that sheeting and shoring be left in place, or where the engineer permits sheeting to be left in place at the contractor's expense. The contractor shall cut off sheeting left in place at least 18 inches (450 mm) below finished grade. Sheeting and bracing will not be paid for directly unless there is a contract item for this work or unless sheeting and bracing were left in place by order of the engineer. The pipe grade and line shall not be disturbed.

b. Minimum Trench Depth (Bury): Minimum bury under pavement or surfacing shall be 4 feet (1.2 m). Minimum bury under ditches shall be 24 inches (0.6 m). Minimum bury for installations parallel to roadway shall be 24 inches (0.6 m).

c. Joints and Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at each joint location to permit the joint to be properly made and

the pipe barrel to rest firmly on the ditch bottom. The trench shall be dry when jointing and laying pipe.

(2) Under Pavement:

a. Removing Pavement: The contractor shall remove existing pavement as necessary for trench excavation. Pavement shall be cut back from top edges of trenches at least 24 inches (0.6 m) on each side of the trench. The requirements of Sections 510 and 602 shall be followed for removing and replacing pavement except that no separate payment will be made for this work unless a pay item for pavement patching is provided.

b. Jacking and Boring: The contractor may jack or bore pipe under existing pavement where practical, but payment in these instances will be made under the item for installation in an open trench. Separate payment for jacked or bored pipe will be made when the plans or specifications require that the pipe be installed in that manner and an item is included in the contract. Pipe that is jacked or bored shall be installed in accordance with Section 728.

(c) Connections: No pipe shall be cut for connections except as indicated on the plans or directed. The cost for making connections, including connections to existing facilities, shall be included in the contract price for sewer pipe.

(1) Manhole Connections: The contractor shall use care in connecting new sewer lines to existing manholes and connecting existing sewer lines to new manholes to avoid infiltration of foreign substances. Manholes shall be cleaned of fallen masonry or debris.

(2) Connections for Future Use: Connections for future use shall be capped and sealed in accordance with the requirements for sealing joints.

(3) House Connections: Wyes and tees installed in a common sewer for house connections shall be installed as shown on the plans or as directed.

(d) Adjusting Sanitary Sewer House Connections and Service Lines: New pipe and fittings required to adjust house connections shall be equal in quality to that of the existing installation and meet the requirements of the utility and code.

742.05 TESTS. Completed sewer lines shall be tested with reflected light and shall show an unobstructed view between manholes. Infiltration shall not exceed 10 gallons per day per inch (1.5 L/mm per day) diameter per 100 feet (30 m) of pipe. On lines where flow indicates infiltration in excess of this amount, a leakage test shall be conducted at the contractor's expense by a method satisfactory to the engineer. Sewer lines showing excessive leakage or undue deviation from line or grade shall be repaired or replaced by the contractor at his expense.

742.06 MEASUREMENT.

(a) Excavation and Backfill: Excavation, foundation preparation material and backfill will not be measured for payment, with the following exception. If an item for Bedding Material is included in the contract, this item will be paid for within the limits specified and in accordance with Section 726.

(b) Sanitary Sewer Pipe: Pipe will be measured in linear feet (lin m) along the centerline of the pipe.

(c) Wyes, Tees and Other Fittings: These items will not be measured separately but will be included in the overall measurement as indicated above.

(d) Manholes: Sanitary or combination sewer manholes will be measured in accordance with Section 702.

(e) Adjustment of Existing Manholes: Adjustment of existing sanitary or combination sewer manholes will be measured in accordance with Section 702.

(f) Concrete Blocking: Concrete blocking will not be measured for payment.

(g) Adjusting Sanitary Sewer House Connections and Service Lines: Adjusting sanitary sewer house connections will be measured per each connection. Adjusting sanitary sewer service lines will be measured by the linear foot (lin m) of adjusted line.

(h) Casings: Casings will be measured by the linear foot (lin m) along the centerline of casing.

(i) Incidentals: Pavement removed and replaced, including sawing, connections, testing and detection wire for plastic pipe, will not be measured for payment.

742.07 PAYMENT:

(a) Sewer pipe installations, sanitary or combination, will be paid for at the contract price per linear foot (lin m), which includes furnishing and hauling all materials; excavation and backfill; connections; capping and sealing connections for future use; and the maintenance of continuous flow of sewage in existing sewers during relocating operations.
When a pay item for Bedding Material is included in the contract, payment will be in accordance with Section 726.

(b) Manholes and manhole adjustments will be paid for in accordance with Section 702.

(c) Payment for adjusting house connections will include adjustment of service lines not exceeding 20 linear feet (6.1 lin m) per house connection. Payment for service line adjustments in excess of 20 linear feet (6.1 lin m) per house connection will be made by the linear foot (lin m) of adjusted service line. Payment for these items includes required new pipe and fittings, and excavation and backfill.

(d) Casings will be paid for at the contract unit price per linear foot (lin m).

(e) Payment will be made under:

Item No.	Pay Item	Pay Unit
742-01	Sanitary Sewer Pipe (Size)	Linear Foot (Lin m)
742-02	Adjusting Sanitary Sewer House Connections	Each
742-03	Adjusting Sanitary Sewer Service Lines	Linear Foot (Lin m)
742-04	Casing (Size & Type)	Linear Foot (Lin m)

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

FEMALE AND MINORITY PARTICIPATION IN CONSTRUCTION

The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the director of OFCCP. Execution of the contract by the successful bidder and any subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in this notice.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

AREA	PARISH OR COUNTY	GOAL (%)
	FEMALE PARTICIPATION	
-	All Covered Areas	6.9
	MINORITY PARTICIPATION (UNDER NEW ORLEANS PLAN)	
-	* See Note Below	20 to 23
	MINORITY PARTICIPATION (NOT UNDER NEW ORLEANS PLAN)	
1	Jefferson LA, Orleans LA, St. Bernard LA, St. Tammany LA	31.0
2	Assumption LA, Lafourche LA, Plaquemines LA, St. Charles LA, St. James LA, St. John the Baptist LA, Tangipahoa LA, Terrebonne LA, Washington LA, Forrest MS, Lamar MS, Marion MS, Pearl River MS, Perry MS, Pike MS, Walthall MS	27.7
3	Ascension LA, East Baton Rouge LA, Livingston LA, West Baton Rouge, LA	26.1
4	Concordia LA, East Feliciana LA, Iberville, LA, Pointe Coupee LA, St. Helena LA, West Feliciana LA, Adams MS, Amite MS, Wilkinson, MS	30.4
5	Lafayette LA	20.6
6	Acadia LA, Evangeline LA, Iberia LA, St. Landry LA, St. Martin LA, St. Mary LA, Vermillion LA	24.1
7	Calcasieu LA	19.3
8	Allen LA, Beauregard LA, Cameron LA, Jefferson Davis LA, Vernon LA	17.8
9	Grant LA, Rapides LA	25.7
10	Avoyelles LA, Bienville LA, Bossier LA, Caddo LA, Claiborne LA, DeSoto LA, Natchitoches LA, Red River LA, Sabine LA, Webster LA, Winn LA	29.3
11	Ouachita LA	22.8
12	Caldwell LA, Catahoula LA, East Carroll LA, Franklin LA, Jackson LA, LaSalle LA, Lincoln LA, Madison LA, Morehouse LA, Richland LA, Tensas LA, Union LA, West Carroll LA,	27.9

*These goals apply only to those contractors signatory to the New Orleans Plan and only with respect to those trades which have unions participating in said Plan. The New Orleans Plan Covered Area is as follows: The parishes of Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John the Baptist, Plaquemines, Washington, Terrebonne, Tangipahoa (that area east of the Illinois Central Railroad), Livingston (that area southeast of the line from a point off the Livingston and Tangipahoa Parish line adjacent from New Orleans and Baton Rouge), St. James (that area southeast of a line drawn from the Town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes), and Lafourche.

These goals are applicable to all the contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor is also subject to the goals for both its federally involved and non-federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor, or from project to project, for the purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Regional Administrator of the Office of Federal Contract Compliance Programs (555 Griffin Square Building, Dallas, TX 75202) within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and geographical area in which the contract is to be performed.

4. As used in this Notice and in the contract, the "covered area" is that area shown in the foregoing table in which the project is located.

The following Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts in excess of $10,000. Execution of the contract by the successful bidder and any

subsequent subcontracts will be considered the contractor's and subcontractor's commitment to the EEO provisions contained in these Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941.
   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. If the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, he shall include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is required to comply with his obligations under the EEO clause, and to make good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractor or subcontractors toward a goal in an

approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office or from federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women, shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications will be based on his effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign 2 or more women to each construction project. The contractor shall ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to

community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the contractor has taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman set by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting his EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendent, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in ny advertising in the news media, including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than 1 month prior to the date for the acceptance of

applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above describing the openings, screening procedures and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet his goals and timetables and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A goal for minorities and a separate goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a group is employed

in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a minority group of women in underutilized).

10. The contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The contractor shall not enter into a subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling his obligations under these specifications, shall implement specific affirmative actions steps, at least as extensive as the standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors will not be required to maintain separate records.

15. Nothing herein shall be construed as a limitation on the application of other laws which establish different standards of compliance or on the application of requirements for hiring of local or other area residents (e.g., those under the Pubic Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and subcontractors holding subcontracts (not including material suppliers) in excess of $10,000

shall submit for every month of July during which work is performed, employment data as contained under Form FHWA-1391 in accordance with instructions included thereon.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS

NEW ORLEANS PLAN

Each bidder, contractor or subcontractor (hereinafter called the contractor) must fully comply with these bid conditions as to each construction trade intended to be used on this construction contract and all other construction work (both federal and nonfederal) in New Orleans Plan Area during the performance of this contract or subcontract. The contractor commits to the minority and female employment utilization goals set forth herein and all other requirements, terms and conditions expressed herein by submitting a properly signed bid.

The contractor shall appoint a company executive to assume the responsibility for implementation of the requirements, terms and conditions of these bid conditions.

These specifications implementing the New Orleans Plan for employment of minorities and females have been imposed by the U. S. Department of Labor by order on September 8, 1971, as amended, for all nonexempt federal and federally assisted construction contracts to be awarded in the area of jurisdiction of the Southeast Louisiana Building and Construction Trades Council in the City of New Orleans and Southeast Louisiana. This area consists of the parishes of Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John the Baptist, Plaquemines, Washington, Terrebonne, Tangipahoa (that area east of the Illinois Central Railroad), Livingston (that area southeast of the line from a point off the Livingston and Tangipahoa Parish line adjacent from New Orleans and Baton Rouge), St. James (that area southeast of a line drawn from the Town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes), and Lafourche.

The provisions of these bid conditions apply to contractors which are party to collective bargaining agreements with labor organizations which together have agreed to the New Orleans Area Construction Program (hereinafter called the New Orleans Plan) for equal opportunity and have jointly made a commitment to goals of minority and female utilization. The New Orleans Plan is a voluntary agreement between (1) Southeast Louisiana Building and Construction Trades Council; (2) contractors and subcontractors who are signatory to the New Orleans Plan; (3) the Urban League of Greater New Orleans and representatives of the minority community; and (4) the City of New Orleans. The New Orleans Plan, together with all implementing agreements that have been and may hereafter be developed pursuant thereto, are incorporated herein by reference.

The requirements set forth herein shall constitute the specific affirmative action requirements for activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

The contractor and all subcontractors holding contracts in excess of $10,000 shall comply with the following minimum requirement activities of equal employment opportunity. The contractor shall include these requirements in every subcontract in excess of $10,000 with such modification of language as necessary to make them binding on the subcontractor.

Each contractor and subcontractor shall submit a monthly employment utilization report, Standard Form 257, covering the contractor's entire work force employed on all contracts (both federal and nonfederal) held in the New Orleans Area. In addition, a list of the federal and nonfederal contracts which are covered by the report shall be furnished. The report shall be submitted to the engineer no later than the 10th day following the end of the month being reported. The report shall end on the next to the last Saturday in the month being reported and shall reflect all hours worked between this date and the close out date in the preceding month. Copies of all payrolls and personnel data shall be retained for 3 years after final acceptance of the project. These records and documents, or copies thereof, shall be made available at reasonable times and places for inspection by an authorized representative of the State or Federal Government and shall be submitted upon request with any other compliance information which such representative may require.

In addition to the reporting requirements set forth above, the contractor and the subcontractors holding subcontracts, not including material suppliers, in excess of $10,000 shall submit for every month of July during which work is performed, employment data as contained under Form FHWA-1391, and in accordance with the instructions included thereon.

A contractor may be in compliance with these bid conditions by its participation in the New Orleans Plan and applicable provisions contained in the "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)" and Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246).

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SUPPLEMENTAL SPECIFICATIONS
JOB TRAINING

These supplemental specifications are in implementation of 23 USC 140(a). Training under this contract shall be optional to the successful bidder, provided the item for which training is requested is less than 70 percent complete. If the contractor elects to provide training under the contract as established in these specifications, he may submit a written request to the project engineer with a copy to the Construction Section. A plan change will be prepared to incorporate a pay item using the trainee hours stated in the Special Provisions elsewhere herein. Training will only be reimbursed after the approval of this plan change.

Training under these supplemental specifications will only be reimbursed in those trades identified by the Department as critical. A statewide critical trade is defined as a job category with 30 or more employees where underrepresentation of minorities and women exists in relation to their availability in the civilian labor force. Training shall be conducted in the critical trades listed in Table 1.

It is intended that training under these supplemental specifications be in crafts directly related to highway construction. Therefore, training in classifications such as clerk-typist, secretary, bookkeeper, fireman, office engineer, estimator, timekeeper, or flagger will not be approved for participation under these supplemental specifications.

No employee shall be employed as a trainee in any classification which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. The contractor shall satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records shall document the findings in each case.

The contractor will be reimbursed $2.00 per hour of training provided to minorities and women in accordance with an approved training program. Reimbursement will be made for training minorities and women in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the contractor from receiving other reimbursement. The contractor will be reimbursed for the number of trainee hours actually trained on the project in accordance with these supplemental specifications.

TABLE 1
STATEWIDE CRITICAL TRADES

MINORITIES	WOMEN
FOREMAN	FOREMAN
EQUIPMENT OPERATORS	EQUIPMENT OPERATORS
MECHANICS	MECHANICS
CARPENTERS	TRUCK DRIVERS
---	IRONWORKERS
---	CARPENTERS
---	CEMENT MASONS
---	PAINTERS
---	SEMI-SKILLED LABORERS

The contractor shall submit to the Department for approval, the training program to be used, the number of trainees to be trained in each selected job classification, and the approximate time training will begin. Only classifications contained in the critical trades included in Table 1 shall be used by the contractor. The contractor will be credited for each trainee employed on the work who is currently enrolled or becomes enrolled in an approved training program and will be reimbursed for such trainees as provided in these supplemental specifications.

The minimum length and type of training for each classification will be established in the training program selected by the contractor approved by the Department, Federal Highway Administration (FHWA), and/or Office of Federal Contract Compliance Programs (OFCCP). The Department, FHWA, and/or OFCCP will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Apprenticeship programs registered with the U. S. Department of Labor, Bureau of Apprenticeship and Training or with a state apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U. S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training will also be considered acceptable if it is being administered in a manner consistent with the equal employment obligations of federal-aid highway construction contracts.

It is normally expected that a trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his/her work classification or until he/she has completed the training program.

Enrollment of minorities and women in excess of the required number will be permitted, with approval to allow the contractor to maintain the required continuous effort to complete the training of individual trainees.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent of the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by these supplemental specifications.

The contractor, prior to the start of training, shall provide written notice to each person to be trained under these supplemental specifications of that person's designation as a trainee, the training program and classification under which training will be provided, the length of the training program, and the hourly wage rate to be paid to the trainee.

The Department shall furnish each trainee an identification card identifying the trainee by name, social security number, and training program classification. Upon graduation, the contractor shall furnish the trainee a certification showing the type and length of training satisfactorily completed along with a permanent photo identification card designating the bearer as a graduate journey person of the appropriate training program.

The contractor shall submit an initial enrollment report for each employee on the project who is enrolled as a trainee in an approved training program or apprenticeship program. The reports shall be submitted to the Construction Section within the first payroll period in which each trainee or apprentice is assigned to the project. The Initial Report of Trainee Employed on Federal Aid Project Form, DOTD 03-40-5018, will be furnished by the Construction Section.

In order to collect the $2.00 per hour reimbursement for training minorities and women, the contractor shall submit two copies of Form DOTD-03-37-0014, Request for Reimbursement for Training, to the project engineer each month that training is conducted on the project. Instructions for furnishing this information and copies of these forms may be obtained from the Department's Construction Section.

At anytime during the life of the project, provided that the item for which training is requested is less than 70 percent complete, a subcontractor may elect to train. The contractor should make

known on Form OMF-1A, Request to Sublet, which is submitted to the Department's Contracts Management Section, the specific program the subcontractor intends to utilize. If the subcontractor does not utilize a previously approved training program, he is directed to develop and submit a training program to the Department for approval by DOTD and FHWA.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, orprobation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will

implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any

account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. *Apprentices:*

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State

apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. *Trainees:*

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. *Helpers*:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than

one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each apprentice, trainee, and helper) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all

may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and

similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

Notice to all Personnel engaged on Federal-Aid Highway Projects

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 92-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:** (Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered

transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:** (Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/ordebarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

REQUIRED CONTRACT PROVISIONS FOR DBE PARTICIPATION IN FEDERAL AID CONSTRUCTION CONTRACTS (DBE GOAL PROJECT)

A. AUTHORITY AND DIRECTIVE: The Code of Federal Regulations, Title 49, Part 26 (49 CFR Part 26) as amended and the Louisiana Department of Transportation and Development's (DOTD) Disadvantaged Business Enterprise (DBE) Program are hereby made a part of and incorporated by this reference into this contract. Copies of these documents are available, upon request, from DOTD Compliance Programs Office, P. O. Box 94245, Baton Rouge, LA 70804-9245.

B. POLICY: It is the policy of the DOTD that it shall not discriminate on the basis of race, color, national origin, or sex in the award of any United States Department of Transportation (US DOT) financially assisted contracts or in the administration of its DBE program or the requirements of 49 CFR Part 26. The DOTD shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of US DOT assisted contracts. The DBE program, as required by 49 CFR Part 26 and as approved by US DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification of failure to carry out the approved DBE program, the US DOT may impose sanctions as provided for under 49 CFR Part 26 and may in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C.3801 et seq.).

C. DBE OBLIGATION: The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of US DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the DOTD deems appropriate.

The preceding policy and DBE obligation shall apply to this contract and shall be included in the requirements of any subcontract. Failure to carry out the requirements set forth therein shall constitute a breach of contract and, after notification by DOTD, may result in termination of the contract, a deduction from the contract funds due or to become due the contractor or other such remedy as DOTD deems appropriate. The contractor is encouraged to use the services offered by banks in the community which are owned and controlled by minorities or women when feasible and beneficial. The term DBE is inclusive of women business enterprises (WBE) and all obligations applicable to DBE shall apply to firms certified and listed as WBE.

D. FAILURE TO COMPLY WITH DBE REQUIREMENTS: All contractors and subcontractors are hereby advised that failure to carry out the requirements set forth above shall constitute a breach of contract and, after notification by DOTD may result in rejection of the bid; termination of the contract; a deduction from the contract funds due or to become due the contractor; or other such remedy as DOTD deems appropriate. Failure to comply with the DBE requirements shall include but not be limited to failure to meet the established goal and/or failure to submit documentation of good faith efforts; failure to exert a reasonable good faith effort (as determined by DOTD) to meet established goals; and failure to realize the DBE participation set forth on approved Form CS-6AAA and attachments. Failure to submit Form CS-6AAA and attachments and/or reasonable good faith efforts' documentation within the specified time requirements will result in the Department taking the actions specified in Heading G(6) below. The utilization of DBE is in addition to all other equal opportunity requirements of the contract. The contractor shall include the provisions in Sections B, C and D of these provisions in subcontracts so that such provisions will be binding upon each subcontractor, regular dealer, manufacturer, consultant, or service agency.

E. ELIGIBILITY OF DBE: The DOTD has included as part of the solicitation of bids a current list containing the names of firms that have been certified as eligible to participate as DBE on US DOT assisted contracts. This list is not an endorsement of the quality of performance of the firm but is simply an acknowledgment of the firm's

eligibility as a DBE. This list indicates the project numbers and letting date for which this list is effective. Only DBE listed on this list may be utilized to meet the established DBE goal for these projects.

F. COUNTING DBE PARTICIPATION TOWARD DBE GOALS: DBE participation toward attainment of the goal will be credited on the basis of total subcontract prices agreed to between the contractor and subcontractors for the contract items or portions of items being sublet as reflected on Form CS-6AAA and attachments, in accordance with the DOTD DBE Program, and the following criteria.

(1) Credit will only be given for use of DBE that are certified by the Louisiana Unified Certification Program. Certification of DBE by other agencies is not recognized.

(2) The total value of subcontracts awarded for construction and services to an eligible DBE is counted toward the DBE goal provided the DBE performs a commercially useful function. The contractor is responsible for ensuring that the goal is met using DBE that perform a commercially useful function.

The contractor shall operate in a manner consistent with the guidelines set forth in the DOTD DBE Program. A commercially useful function is performed when a DBE is responsible for the execution of a distinct element of work by actually managing, supervising, and performing the work in accordance with standard industry practices except when such practices are inconsistent with 49 CFR Part 26 as amended, and the DOTD DBE Program, and when the DBE receives due compensation as agreed upon for the work performed. To determine whether a DBE is performing a commercially useful function, the DOTD shall evaluate the work subcontracted in accordance with the DOTD DBE Program, industry practices and other relevant factors. When an arrangement between the contractor and the DBE represents standard industry practice, if such arrangement erodes the ownership, control or independence of the DBE, or fails to meet the commercially useful function requirement, the contractor will not receive credit toward the goal.

(3) A DBE prime contractor may count only the contract amount toward DBE participation for work he/she actually performs and for which he/she is paid. Any subcontract amounts awarded to certified DBE by a DBE prime will also be credited toward DBE participation provided the DBE subcontractor performs a commercially useful function.

(4) A contractor may count toward the DBE goal 100 percent of verified delivery fees paid to a DBE trucker. The DBE trucker must manage and supervise the trucking operations with its own employees and use equipment owned by the DBE trucker. No credit will be counted for the purchase or sale of material hauled unless the DBE trucker is also a DOTD certified DBE supplier. No credit will be counted unless the DBE trucker is an approved subcontractor.

(5) A contractor may count toward the DBE goal that portion of the dollar value with a joint venture equal to the percentage of the ownership and control of the DBE partner in the joint venture. Such crediting is subject to a favorable DOTD review of the joint venture agreement to be furnished by the apparent low bidder before award of the contract. The joint venture agreement shall include a detailed breakdown of the following:

a. Contract responsibility of the DBE for specific items of work.
b. Capital participation by the DBE.

c. Specific equipment to be provided to the joint venture by the DBE.

d. Specific responsibilities of the DBE in the control of the joint venture.

e. Specific manpower and skills to be provided to the joint venture by the DBE.

f. Percentage distribution to the DBE of the projected profit or loss incurred by the joint venture.

(6) A contractor may count toward the DBE goal only expenditures for materials and supplies obtained from DBE suppliers and manufacturers in accordance with the following:

a. The DBE supplier assumes actual and contractual responsibility for the provision of materials and supplies.

b. The contractor may count 100 percent of expenditures made to a DBE manufacturer provided the DBE manufacturer operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the contractor.

c. The contractor may count 60 percent of the expenditures to DBE suppliers who are regular dealers but not manufacturers, provided the DBE supplier performs a commercially useful function in the supply process including buying the materials or supplies, maintaining an inventory, and selling materials regularly to the public. Dealers in bulk items such as steel, cement, aggregates and petroleum products are not required to maintain items in stock, but they must own or operate distribution equipment. The DBE supplier shall be certified as such by DOTD.

d. A DBE may not assign or lease portions of its supply, manufactured product, or service agreement without the written approval of the DOTD.

(7) A contractor may count toward the DBE goal reasonable expenditures to DBE firms including fees and commissions charged for providing a bona fide service; fees charged for hauling materials unless the delivery service is provided by the manufacturer or regular dealer as defined above; and fees and commissions for providing any bonds or insurance specifically required for the performance of the contract.

(8) The contractor will not receive credit if the contractor makes direct payment to the material supplier. However, it may be permissible for a material supplier to invoice the contractor and DBE jointly and be paid by the contractor making remittance to the DBE firm and material supplier jointly. Prior approval by DOTD is required.

(9) The contractor will not receive credit toward the DBE goal for any subcontracting arrangement contrived to artificially inflate the DBE participation.

G. AWARD DOCUMENTATION AND PROCEDURE: This project has specific DBE goal requirements set forth in the Special Provision for DBE Participation in Federal Aid Construction Contracts. The bidder by signing this bid certifies that:

(1) The goal for DBE participation prescribed in the special provisions shall be met or exceeded and arrangements have been made with certified DBE or good faith efforts made to meet the goal will be demonstrated.

(2) Affirmative actions have been taken to seek out and consider DBE as potential subcontractors. Bidders shall contact DBE to solicit their interest, capability, and prices in sufficient time to allow them to respond effectively, and shall retain, on file, proper documentation to substantiate their good faith efforts.

(3) Form CS-6AAA and "Attachment to Form CS-6AAA" and, if necessary, documentation of good faith efforts shall be submitted within 10 business days following the opening of bids to the DOTD Compliance Programs Office. Submittals shall be personally delivered and date and time stamped into the DOTD Compliance Programs Office by the close of business, 10 business days after opening of bids; or mailed to the DOTD Compliance Programs Office by certified mail, return receipt requested and post marked by the 10th business day after the opening of bids. A business day is defined as a normal working day of DOTD.

Should a bidder protest or appeal any matter regarding the bidding or award of a contract in accordance with Subsection 102.13 of the 2006 Standard Specifications (Subsection 102.13 of the 2000 Louisiana Standard Specifications) after the scheduled time of bid opening, the Compliance Programs Section will immediately suspend the ten day requirement for submission of the CS-6AAA and Attachments until further notice and will notify all parties involved of the suspension. Once the protest has been resolved the

Compliance Programs Section will notify the low bidder and issue a date for submission of the CS-6AAA and Attachments.

All attachments to Form CS-6AAA shall include:

a. The names of DBE subcontractors that will actually participate in meeting the contract goal; and

b. A complete description of the work to be performed by the DBE including the specific items or portions of items of work, quantities, and unit price(s) of each item; and

c. The total dollar value of each item that can be credited toward the contract goal; and

d. Any assistance to be provided to the DBE; and

e. The original signature of each DBE and the contractor attesting that negotiations are in progress and that it is the intention of the parties to enter into a subcontract within 60 calendar days from the time the contract is finalized between the contractor and DOTD.

It shall be the bidder's responsibility to ascertain the certification status of designated DBEs. An extension of time for submittal of Form CS-6AAA and Attachments will not be granted beyond the stated time. Questionable technical points will be cleared with the DOTD Compliance Programs Office within the time period allowed. If the documentation required is not provided in the time and manner specified, DOTD will take the actions specified in Heading (6) below.

(4) If the apparent low bidder is not able to meet the DBE goal, the DBE firms that can meet a portion of the goal shall be listed on the form CS-6AAA. Form CS-6AAA and attachments shall be completed and submitted in accordance with Heading (3) above 10 business days after opening of bids. Form CS-6AAA shall indicate the DBE participation which has been secured along with documentation of good faith efforts. The apparent low bidder shall document and submit justification stating why the goal could not be met and demonstrate the good faith efforts as shown in Section J.
The DOTD's evaluation of good faith efforts in the pre-award stage will focus only on efforts made prior to submittal of the bid. For consideration, good faith efforts shall include the requirements listed in these provisions as well as other data the contractor feels is relevant.

(5) Form CS-6AAA and attachments, and documentation of good faith efforts, when appropriate, will be evaluated by DOTD in the selection of the lowest responsible bidder. The information provided shall be accurate and complete. The apparent low bidder's proposed attainment of the DBE goal and/or demonstration of good faith efforts will be considered in the award of the contract.

(6) An apparent low bidder's failure, neglect, or refusal to submit Form CS-6AAA and attachments committing to meet or exceed the DBE goal and/or documentation of good faith efforts, shall constitute just cause for forfeiture of the proposal guarantee and the DOTD rejecting the bid, pursuing award to the next lowest bidder, or re-advertising the project. The original apparent low bidder will not be allowed to bid on the project should readvertisement occur.

The apparent low bidder shall forfeit the proposal guarantee unless the bidder can show that the reason for not meeting the requirements given in these DBE Provisions was beyond the bidder's control. The DOTD DBE Oversight Committee will review the bidder's reasons for not meeting these DBE Provisions and will decide if the reasons are sufficient to allow return of the proposal guarantee.

(7) The bidder has the right to appeal the DOTD's findings and rulings to the DOTD Chief Engineer. The bidder may present information to clarify the previously submitted documentation. The decision rendered by the DOTD Chief Engineer will be administratively final. There shall be no appeal to the US DOT. If the DOTD Chief Engineer does not rule in favor of the original apparent low bidder, the new apparent low bidder shall submit, in detail, its subsequent proposed DBE participation within 14 calendar days after notification.

(8) Agreements between the bidder and the DBE, whereby the DBE agrees not to provide subcontracting quotations to other bidders, are prohibited.

H. POST AWARD COMPLIANCE

(1) If the contract is awarded on less than full DBE goal participation, such award will not relieve the contractor of the responsibility to continue exerting good faith efforts. The contractor shall submit documentation of good faith efforts with requests to sublet prior to approval of subcontracting work being performed on the project.

(2) The contractor shall establish a program which will effectively promote increased participation by DBE in the performance of contracts and subcontracts. The contractor shall also designate and make known to the DOTD a liaison officer who will be responsible for the administration of the contractor's DBE program.

(3) The contractor shall enter into subcontracts or written agreements with the DBE identified on Form CS-6AAA and attachments for the kind and amount of work specified. The subcontracting requirements of the contract will apply. The contractor shall submit copies of subcontracts or agreements with DBE to DOTD upon request.

(4) The contractor shall keep each DBE informed of the construction progress schedule and allow each DBE adequate time to schedule work, stockpile materials, and otherwise prepare for the subcontract work.

(5) At any point during the project when it appears that the scheduled amount of DBE participation may not be achieved, the contractor shall provide evidence demonstrating how the goal will be met.

(6) If the contractor is unable to demonstrate to the DOTD's satisfaction that it failed to achieve the scheduled DBE participation due to reasons other than quantitative underruns or elimination of items contracted to DBE and that good faith efforts have been used to obtain the scheduled contract participation, the DOTD may withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages.

(7) When the DOTD has reason to believe the contractor, subcontractor, or DBE may not be operating in compliance with the terms of these DBE provisions, to include, but not be limited to the encouragement of fronting, brokering, or not providing a commercially useful function, the DOTD will conduct an investigation of such activities with the cooperation of the parties involved. If the DOTD finds that any person or entity is not in compliance, the DOTD will notify such person or entity in writing as to the specific instances or matters found to be in noncompliance.

At the option of the DOTD, the person or entity may be allowed a specified time to correct the deficiencies noted and to achieve compliance. In the event that the person or entity cannot achieve compliance, or fails or refuses to do so, the DOTD reserves the right to initiate administrative action against the contractor which may include but not be limited to terminating the contract; withholding a percentage of the contractor's next partial payment equal to the shortfall amount until corrective action is taken; or other action the DOTD deems appropriate. The contractor has the right to appeal the DOTD's finding and rulings to the DOTD Chief Engineer.

The contractor may present additional information to clarify that previously submitted. Any new information not included in the original submittal will not be used in the final determination. The decision rendered by the DOTD Chief Engineer will be administratively final.

(8) To ensure that the obligations under subcontracts awarded to subcontractors are met, the DOTD will review the contractor's efforts to promptly pay subcontractors for work performed in accordance with the executed subcontracts. The contractor shall promptly pay subcontractors and suppliers, including DBE, their respective subcontract amount within 14 calendar days after the contractor receives payment from DOTD for the items satisfactorily performed by the subcontractors in accordance with Louisiana Revised Statute 9:2784. The contractor shall provide the DBE with a full accounting to include quantities paid and

deductions made from the DBE's partial payment at the time the check is delivered. Retainage may not be held by the contractor. Delay or postponement of payment to the subcontractor may be imposed by the contractor only when there is evidence that the subcontractor has failed to pay its labor force and suppliers for materials received and used on the project. Delay or postponement of payment must have written approval by the Project Engineer. Failure to promptly pay subcontractors or to release subcontractors' retainage shall constitute a breach of contract and after notification by the DOTD may result in (1) a deduction from the contract funds due or to become due the contractor, (2) disqualification of a contractor as non-responsive, or (3) any other such remedy under the contract as DOTD deems appropriate. All subcontracting agreements made by the contractor shall include the current payment to subcontractors provisions as incorporate in the contract. All disputes between contractors and subcontractors relating to payment of completed work or retainage shall be referred to the DBE Oversight Committee. Members of the DBE Oversight Committee are: the Deputy Chief Engineer,; the DOTD Compliance Programs Director; and a FHWA Division Representative.

(9) The contractor shall meet the requirements of Subsection 108.01 Subletting of Contract, and shall submit DOTD Forms OMF-1A, Request to Sublet and OMF-2A, Subcontractor's EEO Certification. These forms shall be approved by DOTD before any subcontract work is performed.

(10) DOTD reserves the right to withhold any partial payment from the contractor when it is determined that a DBE is not performing a commercially useful function or that achievement of the goal is in jeopardy. Payment may be withheld in the amount of the DBE goal that is in jeopardy until either the contractor submits to DOTD a revised plan for achieving the contract goal and the plan is approved, or the DBE goal amount in question has been met.

(11) The DOTD will monitor the contractor's DBE involvement during the contract, the level of effort by the contractor in meeting or exceeding the goal requirements in the contract, the contractor's attempts to do so, and the efforts in soliciting such involvement. If, at the completion of the project, the contractor has failed to meet the DBE goal and has not demonstrated good faith efforts or obtained a waiver or reduction of the goal, DOTD will withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages.

I. SUBSTITUTIONS OF DBE FIRMS AFTER AWARD

(1) The contractor shall conform to the scheduled amount of DBE participation.

(2) Contract items designated to be performed by the DBE on Form CS-6AAA and attachments shall be performed by the designated DBE or DOTD approved substitute. Substitutions of named DBE shall be approved in writing by the DOTD Compliance Programs Section. Substituted DBE shall not commence work until the contractor is able to demonstrate that the listed DBE is unable to perform because of default, overextension on other jobs, or other acceptable justification. It is not intended that a contractor's ability to negotiate a more advantageous contract with another subcontractor be considered a valid basis for change. Substitution of DBE will be allowed only when the DBE is unable to perform due to default, overextension on other jobs, or other similar justification. Evidence of good faith efforts exerted by the contractor shall be submitted to DOTD for approval. Pay items of work eliminated from the project will not diminish the contractor's DBE participation.

(3) Under no circumstances will a contractor perform work originally designated to be performed by a DBE without prior written approval from the DOTD Compliance Programs Section.

(4) When a listed DBE is unwilling or unable to perform the items of work specified in the Form CS-6AAA and attachments, the contractor shall immediately notify the DOTD Compliance Programs Section.

When a contractor's request to be relieved of the obligation to use the named DBE results in a DBE Goal shortfall, the contractor shall immediately take steps to obtain another certified DBE to perform an equal amount of allowable credit work or make documented good faith efforts to do so. The new DBE's name and designated work shall be submitted to the DOTD for approval using Form OMF-1A, Request to Sublet, prior to proceeding with the work.

If the contractor is unable to replace a defaulting DBE with another DBE for the applicable item, a good faith effort shall be made to subcontract other items to DBE for the purpose of meeting the goal. The DOTD Compliance Programs Section will determine if the contractor made an acceptable good faith effort in awarding work to DBE firms. Any disputes concerning good faith efforts will be referred to the DBE Oversight Committee. The DOTD Compliance Programs Section may allow a waiver or adjustment of the goal as may be appropriate, depending on individual project circumstances.

J. GOOD FAITH EFFORTS: Good faith efforts are required by the contractor when the DBE goals established for a contract are not met, or at anytime during the contract when achievement of the DBE goal is in jeopardy. It is the contractor's responsibility to provide sufficient evidence for DOTD to ascertain the efforts made. The contractor shall demonstrate good faith efforts to maximize participation by DBE prior to award and during the life of the contract. Good faith efforts include personal contacts, follow-ups and earnest negotiations with DBE. DOTD will consider, at a minimum, the following efforts as relevant, although this listing is not exclusive or exhaustive and other factors and types of efforts may be relevant:

(1) Efforts made to select portions of the work to be performed by DBE in order to increase the likelihood of achieving the stated goal. It is the contractor's responsibility to make a sufficient portion of the work available to subcontractors and suppliers and to select those portions of work or materials consistent with the availability of DBE subcontractors and suppliers to assure meeting the goal for DBE participation. Selection of portions of work are required to at least equal the DBE goal in the contract.

(2) Written notification at least 14 calendar days prior to bid opening which solicits a reasonable number of DBE interested in participation in the contract as a subcontractor, regular dealer, manufacturer, or consultant for specific items of work. The contractor shall provide notice to a reasonable number of DBE that their interest in the contract is being solicited, with sufficient time to allow the DBE to participate effectively. The contractor shall seek DBE in the same geographic area from which it generally seeks subcontractors for a given project. If the contractor cannot meet the goal using DBE from the normal area, the contractor shall expand its search to a wider geographic area.

(3) Demonstrated efforts made to negotiate in good faith with interested DBE for specific items of work include:

a. The names, addresses and telephone numbers of DBE contacted. The dates of initial contact and whether initial solicitations of interest were followed-up personally, by mail, or by phone to determine the DBE interest.

b. A description of the information provided to DBE regarding the nature of the work, the plans and specifications and estimated quantities for portions of the work to be performed.

c. A statement of why additional agreements with DBE were not reached.

d. Documentation of each DBE contacted but rejected and the reasons for rejection. All bids and quotations received from DBE subcontractors whether verbal or written, and the contractor's efforts to negotiate a reasonable price shall be submitted. Rejecting a DBE's bid because it was not the lowest quotation received will not be satisfactory reason without an acceptable explanation of how it was determined to be unreasonable. A statement that the DBE's quotation was more than the contractor's bid price for an item or items will not be acceptable.

e. Copies of all bids and quotations received from DBE subcontractors and an explanation of why they were not used.

f. Scheduling meetings to discuss proposed work or to walk the job-site with DBE.

g. Informing DBE of any pre-bid conferences scheduled by the DOTD.

h. Assisting DBE in obtaining bonding, insurance, or lines of credit required by the contractor.

i. Evidence of DBE contacted but rejected as unqualified, accompanied by reason for rejection based on a thorough investigation of the DBEs capabilities.

j. Any additional information not included above which would aid the DOTD in evaluation of the contractor's good faith efforts.

(4) The following are examples of actions that will not be accepted as justification by the contractor for failure to meet DBE contract goals:

a. Failure to contract with a DBE solely because the DBE was unable to provide performance and/or payment bonds.

b. Rejection of a DBE bid or quotation based on price alone.

c. Failure to contract with a DBE because the DBE will not agree to perform items of work at the unit price bid.

d. Failure to contract with a DBE because the contractor normally would perform all or most of the work in the contract.

e. Rejection of a DBE as unqualified without sound reasons based on a thorough investigation of their capabilities.

f. Failure to make more than mail solicitations.

K. RECORD KEEPING REQUIREMENTS: The contractor shall keep such records as are necessary for the DOTD to determine compliance with the DBE contract obligations. These records shall include the names of subcontractors, including DBE; copies of subcontracts; the type of work being performed; documentation such as canceled checks and paid invoices verifying payment for work, services, and procurement; and documentation of correspondence, verbal contacts, telephone calls, and other efforts to obtain services of DBE. When requested, the contractor shall submit all subcontracts and other financial transactions executed with DBE in such form, manner and content as prescribed by DOTD. The DOTD reserves the right to investigate, monitor and/or review actions, statements, and documents submitted by any contractor, subcontractor, or DBE.

L. REPORTING REQUIREMENTS: The contractor shall submit monthly reports on DBE involvement. At the conclusion of each estimate period the contractor shall submit the Form CP-1A, CONTRACTORS MONTHLY DBE PARTICIPATION, to the project engineer to verify actual payments to DBE for the previous month's reporting period. These reports will be required until all DBE subcontracting activity is complete or the DBE Goal has been achieved. Reports are required regardless of whether or not DBE activity has occurred in the monthly reporting period.

Upon completion of all DBE participation, the contractor shall submit the Form CP-2A, DBE FINAL REPORT, to the DOTD Compliance Programs Section with a copy to the project engineer detailing all DBE subcontract payments. When the actual amount paid to DBE is less than the award amount, a complete explanation of the difference is required. If the DBE goal is not met, documentation supporting good faith efforts shall be submitted. Failure to submit the required reports will result in the withholding of partial payments to the contractor until the reports are submitted. All payments due subcontractors which affect DBE goal attainment, including retainage, shall be paid by the contractor before the DOTD releases the payment/performance/retainage bond.

The DOTD reserves the right to conduct an audit of DBE participation prior to processing the final estimate and at any time during the work.

M. APPLICABILITY OF PROVISIONS TO DBE BIDDERS: These provisions are applicable to all bidders including DBE bidders. The DBE bidder is required to perform at least 50 percent of the work of the contract with its own work force in accordance with the terms of the contract, normal industry practices, and the DOTD DBE Program. If the DBE bidder sublets any portion of the contract, the DBE bidder shall comply with provisions regarding contractor and subcontractor relationships. A DBE prime contractor may count only the contract amount toward DBE participation for work that he/she actually performs and any amounts awarded to other certified DBE subcontractors that perform a commercially useful function.

FORM CS-6AAA
BIDDERS ASSURANCE OF DBE PARTICIPATION

S.P.#	**Contract Amount: $**
F.A.P.#	**DBE Goal Percentage**
Letting Date:	**DBE Goal Dollar Value: $**

By its signature affixed hereto, the contractor assures the DOTD that one of the following situations exists (check only one box):

☐ The project goal will be met or exceeded.
☐ A portion of the project goal can be met, as indicated below. Good faith effort documentation is attached. DBE Goal Participation Amount_____ % $_____.

The contractor certifies that each firm listed is currently on the DBE list as maintained by DOTD and is certified for the items of work shown on the attachment(s). The contractor having assured that the goal for DBE participation prescribed in the special provisions will be met or exceeded, or that the portion of the DBE goal will be met or exceeded, attests that negotiations are in progress or complete and that a subcontract(s) will be executed with the firm(s) listed below within 60 calendar days after award of contract.

NAME OF DBE FIRM(S)	INTENDED SUBCONTRACT PRICE[1]

[1]For supplier list only the value of the subcontract that can be credited toward the DBE goal. This amount shall be equal to the amount shown for the supplier on the Attachment to Form CS-6AAA. Details are listed on the attachment(s) to Form CS-6AAA.

The contractor assessed the capability and availability of named firm(s) and sees no impediment to prevent award of subcontract(s) as described on the attachments.

The contractor shall evaluate the subcontract work or services actually performed by the DBE to ensure that a commercially useful function is being served in accordance with the Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts. The contractor understands that no credit toward the DBE goal will be allowed for DBE that do not perform a commercially useful function. The contractor has a current copy of the DOTD DBE Program Implementation Guide which details the methods of operation that are acceptable on projects containing DBE goals. Copies of this guide may be obtained by calling the DOTD Compliance Programs Section at (225) 379-1382.

NAME OF CONTRACTOR	
AUTHORIZED SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
CONTRACTOR'S DBE LIAISON OFFICER (typed or printed name)	
PHONE NUMBER	
DATE	TAX ID#

ATTACHMENT TO FORM CS-6AAA

Contractor shall submit a separate attachment for each DBE listed on Form CS-6AAA.

S.P.#	F.A.P.#
NAME OF DBE	
PHONE #	CONTACT PERSON:

Fully describe the work to be performed (furnish materials and install, labor only, supply only, manufacture, hauling, etc.), quantity, unit price, and dollar value for each item to be subcontracted to the DBE listed below.

ITEM NO.	QUANTITY/UNIT PRICE/DESCRIPTION OF WORK TO BE PERFORMED	$ VALUE

Describe the types of assistance, if any, the contractor will provide to any DBE on this project.

The contractor and DBE subcontractor attest that a subcontract will be executed for the items of work listed above. The contractor acknowledges that it will only receive credit toward the DB goal if the subcontractor performs a commercially useful function. The DBE understands that it is responsible for performing a commercially useful function.

DBE CONTRACTOR'S SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
DATE	TAX ID#
PRIME CONTRACTOR'S SIGNATURE	
TYPED OR PRINTED NAME	
TITLE	
DATE	

06/08

FORM CP-1A
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
CONTRACTOR'S MONTHLY DBE PARTICIPATION

STATE PROJECT NO.	CONTRACTOR:
FEDERAL AID PROJECT NO.	
ESTIMATE NO.	REPORT PERIOD: _____ TO _____

DOTD CERTIFIED DBE SUBCONTRACTOR OR SUPPLIER	ITEMS PERFORMED AND PAID THIS ESTIMATE PERIOD	AMOUNT PAID THIS MONTH[1]	TOTAL PAID TO DATE[1]

[1]For suppliers, list total amount paid and the 60 percent value counted toward the goal.

This report covers the previous estimate period and shall be submitted to the Project Engineer with the current month's pay estimate. Estimates will be withheld until required form is submitted. Questions should be directed to the DOTD Compliance Programs Section at (225) 379-1382.

The Contractor certifies that the above amounts <u>were paid</u> to the listed DBEs and that documentation of these payments is available for inspection.

Project Engineer has reviewed this form. _____ (Signature of Project Engineer).

Authorized Signature
Typed or Printed Name
Title
Phone No.
Date

06/08

FORM CP-2A
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DBE FINAL REPORT

STATE PROJECT NO.	DBE GOAL AMOUNT: $	CONTRACTOR:
FEDERAL PROJECT NO.	CONTRACT AMOUNT: $	
PARISH(ES)	LETTING DATE:	

DOTD CERTIFIED DBE SUBCONTRACTOR OR SUPPLIER	ITEMS PERFORMED AND PAID	TOTAL DOLLAR AMOUNT PAID TO SUB OR SUPPLIER (60%)

This is to certify that $_____ has been paid to Disadvantaged Business Enterprise Subcontractors/Suppliers listed above.

Authorized Signature
Typed or Printed Name
Title
Date

Parish or County _____ State of _____

Subscribed and sworn to, before me, this _____ day of _____, A.D. 20_____

Notary Public _____

My commission expires: _____

General Decision Number: LA080014 06/20/2008 LA14

Superseded General Decision Number: LA20070040

State: Louisiana

Construction Type: Highway

Counties: Jefferson, Orleans, Plaquemines, St Bernard, St Charles, St James, St John the Baptist and St Tammany Counties in Louisiana.

HIGHWAY CONSTRUCTION PROJECTS (Does not include building structures in rest area projects)

Modification Number	Publication Date
0	02/08/2008
1	05/09/2008
2	06/20/2008

CARP1098-005 02/01/2006

ST. JAMES PARISH (North of the Mississippi River) PARISH:

	Rates	Fringes
PILEDRIVERMAN	$ 19.92	5.65

CARP1846-002 02/01/2006

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES (South of the Mississippi River), ST. JOHN THE BAPTIST, AND ST. TAMMANY PARISHES:

	Rates	Fringes
PILEDRIVERMAN	$ 19.92	5.00

ELEC0130-010 12/01/2006

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES, AND ST. JOHN THE BAPTIST PARISHES

	Rates	Fringes
ELECTRICIAN (including traffic signal wiring and installation)	$ 22.09	7.90

ELEC1077-007 03/01/2008

ST. TAMMANY PARISH

	Rates	Fringes
ELECTRICIAN (including traffic signal wiring and installation)	$ 20.75	5.73

ENGI0406-015 07/01/2007

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt/Aggregate Spreader	$ 20.26	4.95

* IRON0058-004 06/01/2008

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 19.40	6.82

SULA2004-014 07/30/2004

	Rates	Fringes
CARPENTER (including formbuilding/formsetting)	$ 13.42	3.04
Cement Mason/Concrete Finisher	$ 13.24	1.68
IRONWORKER, REINFORCING	$ 15.84	3.47
Laborers		
Asphalt Raker	$ 10.13	0.18
General	$ 9.26	1.14
Guardrail	$ 8.81	1.80
Mason Tender	$ 8.51	1.20
Pipelayer	$ 9.99	1.20
Striping/Pavement Marker includes paint striping and attachment of reflector buttons	$ 8.24	1.20
Traffic Control including flagger, sign placement, barricades, and cones	$ 8.39	1.80
Painter, Brush, Spray and Roller	$ 14.16	2.03
Power Equipment Operators		
Asphalt Paving Machine	$ 14.38	0.18
Asphalt Screed	$ 13.76	2.20
Backhoe/Excavator	$ 13.93	3.00
Broom/Sweeper	$ 12.78	2.92
Bulldozer	$ 13.58	0.00
Crane	$ 17.20	3.30
Front End Loader	$ 13.31	0.00
Mechanic	$ 13.53	2.92
Milling/Cold Planing		

Machine includes Rotomill and CMI Cutter	$ 15.50	0.00
Motor Grader/Blade	$ 14.42	3.02
Oiler	$ 13.91	2.37
Post Driver	$ 13.73	0.00
Roller	$ 13.11	3.30
Trackhoe	$ 11.00	0.00
Trenching/Boring Machine	$ 12.51	0.00
Truck drivers		
Dump (all types)	$ 10.64	0.18
Flatbed	$ 10.87	0.00
Lowboy	$ 13.24	0.00
Pickup	$ 10.60	0.00
Water	$ 12.00	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the

Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
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Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: LA080008 07/04/2008 LA8

Superseded General Decision Number: LA20070012

State: Louisiana

Construction Type: Heavy

Counties: Jefferson, Orleans, Plaquemines, St Bernard, St Charles, St James, St John the Baptist and St Tammany Counties in Louisiana.

HEAVY CONSTRUCTION PROJECTS (Includes flood control, water & sewer lines, and water wells. Also includes elevated storage tanks in all listed parishes except St. James. Excludes

industrial construction-chemical processing, power plants, and refineries.)

Modification Number	Publication Date
0	02/08/2008
1	05/09/2008
2	06/06/2008
3	07/04/2008

CARP1846-006 02/01/2006

	Rates	Fringes
CARPENTER		
(formbuilding/formsetting)	$ 19.92	5.00
Millwright/Piledriverman	$ 19.92	5.00

ELEC0130-005 12/01/2006

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES, AND ST. JOHN THE BAPTIST PARISHES

	Rates	Fringes
ELECTRICIAN (including low voltage wiring)	$ 22.09	7.90

ELEC1077-002 03/01/2008

ST. TAMMANY PARISH

	Rates	Fringes
ELECTRICIAN (including low voltage wiring)	$ 20.75	5.73

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* ENGI0406-018 07/01/2008

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Bulldozer	$ 20.76	5.70
Mechanic	$ 22.31	5.70

PLAS0567-003 07/01/2006

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JOHN THE BAPTIST, AND ST. TAMMANY PARISHES:

	Rates	Fringes
Cement Mason/Concrete Finisher	$ 18.06	2.89

PLAS0812-003 06/01/2004

ST. JAMES PARISH:

	Rates	Fringes
Cement Mason/Concrete Finisher	$ 21.85	0.00

PLUM0060-002 06/01/2008

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES (Southeastern Portion), ST. JOHN THE BAPTIST, and ST. TAMMANY PARISHES

	Rates	Fringes
PLUMBER/PIPEFITTER (excluding pipe laying)	$ 25.02	7.93

PLUM0198-005 01/01/2008

ST. JAMES PARISH (Northwestern Portion):

	Rates	Fringes
PLUMBER (excluding pipe laying)	$ 22.64	6.88

SULA2004-007 05/13/2004

	Rates	Fringes
CARPENTER (all other work)	$ 13.75	2.60
Laborers:		
Common/Landscape	$ 9.88	0.00
Fence	$ 11.24	0.00
Flagger	$ 8.58	0.00
Mason Tender	$ 7.00	0.00
Pipelayer	$ 9.84	0.00
PIPEFITTER (excluding pipelaying)	$ 17.52	4.51
Power equipment operators:		
Backhoe/Excavator	$ 14.42	0.00
Crane	$ 16.34	3.30
Dragline	$ 16.50	0.00
Front End Loader	$ 13.89	0.00
Oiler	$ 10.03	0.00
Truck drivers:		
Dump	$ 11.01	0.00
Pickup	$ 12.25	0.00

WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.
==========

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==========

END OF GENERAL DECISION

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

CONSTRUCTION PROPOSAL RETURNABLES FOR

FEDERAL AID PROJECT

STATE PROJECT NO. 450-15-0100
CAUSEWAY BOULEVARD INTERCHANGE (PHASE I)
ROUTE I-10
JEFFERSON PARISH

CONTRACT TIME FORM
COST-PLUS-TIME BIDDING PROCEDURE
(A + B) METHOD

STATE PROJECT NO(S). **450-15-0100**

FEDERAL AID PROJECT NO(S). **10-5(362)229**

NAME OF PROJECT **CAUSEWAY BOULEVARD INTERCHANGE (PHASE I)**

ROUTE **I-10**

PARISH **JEFFERSON**

CONTRACT TIME

The bidder shall determine the number of calendar days required for completion and final acceptance of the project and shall state this required time, in words, in the space provided below. The maximum allowable contract time for this project is **Seven Hundred (700) calendar days**. The proposed completion time will be a factor used in considering bids for award of contract in accordance with the special provision, COST-PLUS-TIME BIDDING PROCEDURE (A+B METHOD). The stated number of calendar days required for completion will be the contract time for this project should the bidder be successful. Bids not including a contract time, or showing contract time in excess of the maximum allowable amount, will be considered irregular and will be rejected.

CONTRACT TIME **(Calendar Days To Completion, In Words)**
_____ Calendar Days

BID BOND

A Bid Bond is required when the bidder's total bid amount as calculated by the Department in accordance with Subsection 103.01 is greater than $50,000. *(See Section 102 of the Project Specifications.)*

_____, as Principal (Bidder)
and _____, as Surety,
are bound unto the State of Louisiana, Department of Transportation and Development, (hereinafter called the Department) in the sum of five percent (5%) of the bidder's total bid amount as calculated by the Department for payment, of which the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, as solidary obligors.

Signed and sealed this _____ day of _____, 20_____.

The condition of this obligation is such that, whereas the Principal has submitted a bid to the Department on a contract for the construction of **STATE PROJECT NO. 450-15-0100, FEDERAL AID PROJECT NO. 10-5(362)229, CAUSEWAY BOULEVARD INTERCHANGE (PHASE I), located in JEFFERSON PARISH, ROUTE I-10,** if the bid is accepted and the Principal, within the specified time, enters into the contract in writing and gives bond with Surety acceptable to the Department for payment and performance of said contract, this obligation shall be void; otherwise to remain in effect.

_____	_____
Principal (Bidder or First Partner to Joint Venture)	If a Joint Venture, Second Partner
By _____	By _____
Authorized Officer-Owner-Partner	Authorized Officer-Owner-Partner
_____	_____
Typed or Printed Name	Typed or Printed Name

_____
Surety

By _____ (Seal)
Agent or Attorney-in-Fact

_____
Typed or Printed Name

To receive a copy of the contract and subsequent correspondence / communication from LA DOTD, with respect to the bid bonds, the following information must be provided:

_____	_____
Bonding Agency or Company Name	Address
_____	_____
Agent or Representative	Phone Number / Fax Number

07/07
Form CS-2A
ELECTRONIC COPY - NOT VALID FOR PAPER BID SUBMITTAL

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SCHEDULE OF ITEMS

LEAD PROJECT: 450-15-0100
OTHER PROJECTS:

DATE: 07/18/08 09:51 PAGE: 1

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
201-01	LUMP	LUMP SUM	CLEARING & GRUBBING _____ DOLLARS _____ CENTS
202-01	LUMP	LUMP SUM	REMOVAL OF STRUCTURES & OBSTRUCTIONS _____ DOLLARS _____ CENTS
202-02-A	1	EACH	REMOVAL OF BRIDGES (RAMP NCW) _____ DOLLARS _____ CENTS
202-02-C	8,183	SQUARE YARD	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT _____ DOLLARS _____ CENTS
202-02-D	1,328	SQUARE YARD	REMOVAL OF CONCRETE WALKS & DRIVES _____ DOLLARS _____ CENTS
202-02-F	2,268.6	LINEAR FOOT	REMOVAL OF CONCRETE COMBINATION CURB & GUTTER _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
202-02-G	10,604.8	SQUARE YARD	REMOVAL OF SURFACING & STABILIZED BASE _____ DOLLARS _____ CENTS
202-02-H	362	LINEAR FOOT	REMOVAL OF GUARD RAIL _____ DOLLARS _____ CENTS
202-02-I	49	EACH	REMOVAL OF EXISTING SIGN SUPPORTS _____ DOLLARS _____ CENTS
202-02-J	30	EACH	REMOVAL OF LIGHT POLE AND FOUNDATIONS _____ DOLLARS _____ CENTS
202-02-K	15	EACH	REMOVAL OF CATCH BASINS _____ DOLLARS _____ CENTS
202-02-L	5,500	LINEAR FOOT	REMOVAL OF UNDERGROUND CONDUIT _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
202-02-M	81	EACH	REMOVAL OF EXISTING SIGN FACES _____ DOLLARS _____ CENTS
202-02-N	LUMP	LUMP SUM	REMOVAL OF EXISTING SIGNAL EQUIPMENT _____ DOLLARS _____ CENTS
202-02-O	6	EACH	REMOVAL OF MANHOLES _____ DOLLARS _____ CENTS
202-02-P	1,060	SQUARE YARD	REMOVAL OF INCIDENTAL CONCRETE PAVEMENT _____ DOLLARS _____ CENTS
202-02-Q	2,877	LINEAR FEET	REMOVAL OF FENCE _____ DOLLARS _____ CENTS
202-02-R	3	EACH	REMOVAL OF TRUSS AND FOOTING _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
202-02-S	3,500	LINEAR FEET	REMOVAL OF CONCRETE W/CONDUCTORS, FITTINGS, JUNCTION BOXES _____ DOLLARS _____ CENTS
202-02-01	1	EACH	REMOVAL OF 6.5'x92.5' METAL FENCE, STA. 41+079 RT. _____ DOLLARS _____ CENTS
202-02-02	1	EACH	REMOVAL OF UNDERGROUND SPRINKLER SYSTEM, 40 LIN. FT., STA. 41+079 RT. _____ DOLLARS _____ CENTS
202-02-03	1	EACH	REMOVAL OF BOLLARDS LINKED BY CHAIN, 50 LIN. FT., STA. 44+034 RT. _____ DOLLARS _____ CENTS
202-02-04	1	EACH	REMOVAL OF 4'-6'X10' WOOD FENCE, STA. 46+057 RT. _____ DOLLARS _____ CENTS
202-02-05	1	EACH	REMOVAL OF 5'X10' METAL SIGN, STA. 58+024 RT. _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
202-02-06	1	EACH	REMOVAL OF 2'X3' METAL SIGN, STA. 52+063 RT. _____ DOLLARS _____ CENTS
203-01	18,026	CUBIC YARD	GENERAL EXCAVATION _____ DOLLARS _____ CENTS
203-03	12,437	CUBIC YARD	EMBANKMENT _____ DOLLARS _____ CENTS
214-08	46,604	SQUARE YARD	GEOTEXTILE FABRIC _____ DOLLARS _____ CENTS
213-07	2	EACH	TEMPORARY STONE CONSTRUCTION ENTRANCE _____ DOLLARS _____ CENTS
302-02-G	23,514.0	SQUARE YARD	CLASS II BASE COURSE (11" THICK) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
502-01	7,203.1	TON	SUPERPAVE ASPHALTIC CONCRETE _____ DOLLARS _____ CENTS
503-01	221	SQUARE YARD	COLD PLANING ASPHALTIC PAVEMENT _____ DOLLARS _____ CENTS
601-01-K	8,118.0	SQUARE YARD	PORTLAND CEMENT CONCRETE PAVEMENT (10" THICK) _____ DOLLARS _____ CENTS
601-04	10	EACH	PORTLAND CEMENT CONCRETE PAVEMENT CORING _____ DOLLARS _____ CENTS
701-03-C	7	LINEAR FOOT	STORM DRAIN PIPE (8" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-F	521	LINEAR FOOT	STORM DRAIN PIPE (15" RCP/PCP) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
701-03-G	963	LINEAR FOOT	STORM DRAIN PIPE (18" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-I	220	LINEAR FOOT	STORM DRAIN PIPE (24" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-K	234	LINEAR FOOT	STORM DRAIN PIPE (30" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-M	96	LINEAR FOOT	STORM DRAIN PIPE (36" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-O	272	LINEAR FOOT	STORM DRAIN PIPE (48" RCP/PCP) _____ DOLLARS _____ CENTS
701-03-P	18	LINEAR FOOT	STORM DRAIN PIPE (54" RCP/PCP) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
701-03-Q	64	LINEAR FOOT	STORM DRAIN PIPE (60" RCP/PCP) _____ DOLLARS _____ CENTS
701-04-I	626	LINEAR FOOT	STORM DRAIN PIPE ARCH (54" EQUIV. RCPA) _____ DOLLARS _____ CENTS
701-04-J	148	LINEAR FOOT	STORM DRAIN PIPE ARCH (60" EQUIV. RCPA) _____ DOLLARS _____ CENTS
702-02-E	13	EACH	MANHOLES (R-CB-32) _____ DOLLARS _____ CENTS
702-03-A	5	EACH	CATCH BASINS (CB-01) _____ DOLLARS _____ CENTS
702-03-B	4	EACH	CATCH BASINS (CB-02) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
702-03-C	1	EACH	CATCH BASINS (CB-06) _____ DOLLARS _____ CENTS
702-03-D	11	EACH	CATCH BASINS (CB-07) _____ DOLLARS _____ CENTS
702-03-G	10	EACH	CATCH BASINS (CB-09) _____ DOLLARS _____ CENTS
704-01-C	495.3	LINEAR FOOT	GUARD RAIL (DOUBLE THRIE BEAM) (3'-1 1/2" POST SPACING) _____ DOLLARS _____ CENTS
704-03	187.5	LINEAR FOOT	BLOCKED OUT GUARD RAIL _____ DOLLARS _____ CENTS
704-06-A	25.0	LINEAR FOOT	GUARD RAIL ANCHOR SECTIONS (TRAILING END) (SINGLE THRIE BEAM) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
704-08-B	86.0	LINEAR FOOT	GUARD RAIL TRANSITIONS (DOUBLE THRIE BEAM) _____ DOLLARS _____ CENTS
704-11-A	12	EACH	GUARD RAIL END TREATMENT (FLARED) _____ DOLLARS _____ CENTS
705-06-B	750	LINEAR FOOT	CHAIN LINK FENCE (5-FOOT HEIGHT) _____ DOLLARS _____ CENTS
705-06-E	2,002	LINEAR FOOT	CHAIN LINK FENCE (2.5-FOOT HEIGHT)(BARRIER MOUNTED) _____ DOLLARS _____ CENTS
706-01-A	727.2	SQUARE YARD	CONCRETE WALK (4" THICK) _____ DOLLARS _____ CENTS
706-02-C	495.1	SQUARE YARD	CONCRETE DRIVE (6" THICK) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
706-03-A	6,628.3	SQUARE YARD	INCIDENTAL CONCRETE PAVING (4" THICK) _____ DOLLARS _____ CENTS
707-01-A	1,948.7	LINEAR FOOT	CONCRETE CURB (6" BARRIER) _____ DOLLARS _____ CENTS
707-01-B	1,661.9	LINEAR FOOT	CONCRETE CURB (10" BARRIER) _____ DOLLARS _____ CENTS
707-03-A	852.4	LINEAR FOOT	COMBINATION CONCRETE CURB & GUTTER (6" BARRIER) _____ DOLLARS _____ CENTS
707-03-B	52.0	LINEAR FOOT	COMBINATION CONCRETE CURB & GUTTER (4" MOUNTABLE) _____ DOLLARS _____ CENTS
713-01	LUMP	LUMP SUM	TEMPORARY SIGNS & BARRICADES _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
713-03-B-01	0.096	MILE	TEMPORARY PVMT. MARKINGS (BROKEN LINE)(4" W)(10' L)(TYPE I REMOVABLE) _____ DOLLARS _____ CENTS
713-04-A-01	0.396	MILE	TEMPORARY PVMT. MARKINGS (SOLID LINE)(4" W)(TYPE I REMOVABLE) _____ DOLLARS _____ CENTS
713-04-B-01	0.034	MILE	TEMPORARY PAVEMENT MARKINGS (SOLID LINE)(12" WIDTH)(TYPE 1 REMOVABLE) _____ DOLLARS _____ CENTS
713-08	175	EACH	TEMPORARY PRECAST CONCRETE BARRIER (DEPARTMENT FURNISHED) _____ DOLLARS _____ CENTS
715-01	87	POUND	SEEDING _____ DOLLARS _____ CENTS
718-01	2,900	POUND	FERTILIZER _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
722-01	1	EACH	PROJECT SITE LABORATORY _____ DOLLARS _____ CENTS
725-01	920.0	SQUARE YARD	TEMPORARY DETOUR ROADS _____ DOLLARS _____ CENTS
726-01	1,386.9	CUBIC YARD	BEDDING MATERIAL _____ DOLLARS _____ CENTS
728-01	LUMP	LUMP SUM	MOBILIZATION _____ DOLLARS _____ CENTS
729-01	531.0	SQUARE FOOT	SIGN (TYPE A) _____ DOLLARS _____ CENTS
729-06	1,142.5	SQUARE FOOT	SIGN (OVERHEAD MOUNTED) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
729-08-B	18	EACH	MOUNTING (3 1/2" POST) _____ DOLLARS _____ CENTS
729-09	3	EACH	MOUNTING (OVERHEAD TRUSS)(GROUND MOUNTED) _____ DOLLARS _____ CENTS
729-10	1	EACH	MOUNTING (OVERHEAD TRUSS)(STRUCTURE MOUNTED) _____ DOLLARS _____ CENTS
729-20-A	6	EACH	FOOTINGS FOR OVERHEAD MOUNTINGS (TRUSS) _____ DOLLARS _____ CENTS
729-21	30	EACH	U-CHANNEL POST _____ DOLLARS _____ CENTS
730-01	4,250	LINEAR FOOT	TRENCHING AND BACKFILLING _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
730-02-A	1,000	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1" RIGID ALUM., (2) 1/C #8 XHHW-2, (1) 1/C #8 XHHW-2 GREEN GRND.) _____ DOLLARS _____ CENTS
730-02-B	2,500	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1" RIGID ALUM., (4) 1/C #8 XHHW-2, (1) 1/C #8 XHHW-2 GREEN GRND.) _____ DOLLARS _____ CENTS
730-02-C	100	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40, W/(8) 1/C #8 XHHW-2, (1) 1/C #8 GREEN GRND.) _____ DOLLARS _____ CENTS
730-02-D	250	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40, W/(2) 1/C #2 XHHW-2, (1) 1/C #2 GREEN GRND.) _____ DOLLARS _____ CENTS
730-02-E	500	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40, W/(9) 1/C #6 XHHW-2, (1) 1/C #6 BARE SOLID GRND., UNDERGROUND) _____ DOLLARS _____ CENTS
730-02-F	300	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40 IN TRENCH, W/(5) 1/C #6 XHHW-2 (1) 1/C #6 BARE SOLID GRND., UNDERGROUND) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
730-02-G	150	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2' PVC SCH. 40, W/(3) 1/C #2 XHHW-2) _____ DOLLARS _____ CENTS
730-02-H	2,950	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40, W/(3) 1/C #6 XHHW-2, (1) 1/C #6 BARE SOLID GRND. UNDERGROUND) _____ DOLLARS _____ CENTS
730-02-I	500	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 1/2" PVC SCH. 40, W/(7) 1/C #6 XHHW-2, (1) 1/C #6 BARE SOLID GRND. UNDERGROUND) _____ DOLLARS _____ CENTS
730-02-J	750	LINEAR FOOT	CONDUIT WITH CONDUCTORS (1 LIQUID TIGHT FLEX ALUMINUM W/(2) #10 THHW-2, (1 1/C #10 THHW-2 GREEN GROUND) _____ DOLLARS _____ CENTS
730-04	200	LINEAR FOOT	JACKED OR BORED CASING (6" SCHEDULE 80 PVC) _____ DOLLARS _____ CENTS
730-05	10	EACH	LIGHT POLE (TWO LUMINAIRE)(40' MOUNTING HEIGHT, STEEL WITH INTERNAL LOWERING DEVICE MOUNTED TO THE MEDIAN BAR.) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
730-06	8	EACH	HIGH MAST POLE (110' MOUNTING HEIGHT, STEEL 6-LUMINAIRE RING WITH INTERNAL LOWERING DEVICE _____ DOLLARS _____ CENTS
730-07-A	48	EACH	LUMINAIRE (TYPE "A", 1000W HIGH PRESSURE SODIUM) _____ DOLLARS _____ CENTS
730-07-B	20	EACH	LUMINAIRE (TYPE "B", 400W HIGH PRESSURE SODIUM) _____ DOLLARS _____ CENTS
730-07-C	4	EACH	LUMINAIRE (TYPE "C", UNDERPASS 150W HIGH PRESSURE SODIUM) _____ DOLLARS _____ CENTS
730-08	3	EACH	ELECTRICAL SERVICE POINT _____ DOLLARS _____ CENTS
730-11	LUMP	LUMP SUM	REMOVAL AND DISPOSAL OF ELECTRICAL EQUIPMENT _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
730-12	86	EACH	REMOVAL AND STORAGE OF LIGHT POLES _____ DOLLARS _____ CENTS
730-13	86	EACH	REMOVAL AND DISPOSAL OF LIGHT POLE FOUNDATIONS _____ DOLLARS _____ CENTS
730-14	86	EACH	REMOVAL AND DISPOSAL OF LUMINAIRES _____ DOLLARS _____ CENTS
730-16	13	EACH	UNDERGROUND JUNCTION BOX (13" X 24") _____ DOLLARS _____ CENTS
730-17	19	EACH	STRUCTURE JUNCTION BOX (8" x 8" x 4") _____ DOLLARS _____ CENTS
731-01	484	EACH	NONREFLECTORIZED RAISED PAVEMENT MARKERS _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
731-02	1,460	EACH	REFLECTORIZED RAISED PAVEMENT MARKERS _____ DOLLARS _____ CENTS
732-02-A	5.296	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (4" WIDTH) _____ DOLLARS _____ CENTS
732-02-B	0.064	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (6" WIDTH) _____ DOLLARS _____ CENTS
732-02-C	0.685	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (8" WIDTH) _____ DOLLARS _____ CENTS
732-02-D	0.010	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (12" WIDTH) _____ DOLLARS _____ CENTS
732-02-E	0.173	MILE	PLASTIC PAVEMENT STRIPING (SOLID LINE) (24" WIDTH) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
732-03-A	1.598	MILE	PLASTIC PAVEMENT STRIPING (BROKEN LINE)(4" WIDTH) _____ DOLLARS _____ CENTS
732-04-A	4	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (ARROW) _____ DOLLARS _____ CENTS
732-04-C	4	EACH	PLASTIC PAVEMENT LEGENDS & SYMBOLS (ONLY) _____ DOLLARS _____ CENTS
732-05	1.348	MILE	REMOVAL OF EXISTING MARKINGS _____ DOLLARS _____ CENTS
733-01-A	1,190.0	LINEAR FOOT	CONCRETE ROADWAY BARRIER (32") _____ DOLLARS _____ CENTS
733-01-B	2,512.4	LINEAR FOOT	CONCRETE ROADWAY BARRIER (32")(SLOTTED) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
733-01-C	835.6	LINEAR FOOT	CONCRETE ROADWAY BARRIER (RETAINING WALL)(32") _____ DOLLARS _____ CENTS
733-01-D	586.7	LINEAR FOOT	CONCRETE ROADWAY BARRIER (RETAINING WALL)(32")(SLOTTED) _____ DOLLARS _____ CENTS
736-01	740	LINEAR FOOT	TRENCHING AND BACKFILLING _____ DOLLARS _____ CENTS
736-03	865	LINEAR FOOT	JACKED OR BORED CONDUIT (3" RMC) _____ DOLLARS _____ CENTS
736-04-A	1	EACH	SIGNAL SUPPORT (MAST ARM POLE, TWIN ARMS, 35' & 30') _____ DOLLARS _____ CENTS
736-04-B	2	EACH	SIGNAL SUPPORT (MAST ARM POLE, TWIN ARMS, 40' & 30') _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
736-04-C	1	EACH	SIGNAL SUPPORT (MAST ARM POLE, 35' ARMS) _____ DOLLARS _____ CENTS
736-10-A	12	EACH	UNDERGROUND JUNCTION BOX (TYPE D) _____ DOLLARS _____ CENTS
736-10-B	1	EACH	UNDERGROUND JUNCTION BOX (TYPE E) _____ DOLLARS _____ CENTS
740-01	LUMP	LUMP SUM	CONSTRUCTION LAYOUT _____ DOLLARS _____ CENTS
801-02	3,761.3	CUBIC YARD	STRUCTURAL EXCAVATION FOR INTERMEDIATE BENTS _____ DOLLARS _____ CENTS
804-01-B	47,323	LINEAR FOOT	PRECAST CONCRETE PILES (14") _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
804-02-A	9,420	LINEAR FOOT	TREATED TIMBER PILES (NONCOASTAL TREATMENT) _____ DOLLARS _____ CENTS
804-03-I	2,070	LINEAR FOOT	STEEL PILES (HP 14 X 117) _____ DOLLARS _____ CENTS
804-05	3	EACH	PRECAST CONCRETE TEST PILES _____ DOLLARS _____ CENTS
804-07	1	EACH	STEEL TEST PILES _____ DOLLARS _____ CENTS
804-09	4	EACH	LOADING TEST PILES _____ DOLLARS _____ CENTS
804-10	1	EACH	RELOADING TEST PILES _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
804-11	1	EACH	REDRIVING TEST PILES _____ DOLLARS _____ CENTS
805-01-C	257.69	CUBIC YARD	CLASS A CONCRETE (RETAINING WALLS) _____ DOLLARS _____ CENTS
805-01-D	1,394.43	CUBIC YARD	CLASS A CONCRETE (FOOTINGS) _____ DOLLARS _____ CENTS
805-01-F	1,627.26	CUBIC YARD	CLASS A CONCRETE (BENTS) _____ DOLLARS _____ CENTS
805-02-F	100.90	CUBIC YARD	CLASS A(M) CONCRETE (BENTS) _____ DOLLARS _____ CENTS
805-03	3,899.50	CUBIC YARD	CLASS AA CONCRETE _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
805-08-C	9,416.0	LINEAR FOOT	PRECAST-PRESTRESSED CONCRETE GIRDERS (TYPE III) _____ DOLLARS _____ CENTS
805-08-G	476.7	LINEAR FOOT	PRECAST-PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) _____ DOLLARS _____ CENTS
807-11	743.68	LINEAR FOOT	STRIP SEAL JOINTS _____ DOLLARS _____ CENTS
809-01	1,453,015	POUND	DEFORMED REINFORCING STEEL _____ DOLLARS _____ CENTS
811-08	LUMP	LUMP SUM	STRUCTURAL METALWORK _____ DOLLARS _____ CENTS
810-01-A	8,405.00	LINEAR FOOT	CONCRETE RAILING (32" BARRIER) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
810-01-B	560.01	LINEAR FOOT	CONCRETE RAILING (42" BARRIER) _____ DOLLARS _____ CENTS
810-01-C	226.94	LINEAR FOOT	CONCRETE RAILING (32" BARRIER) (SLOTTED) _____ DOLLARS _____ CENTS
811-01-C	52.90	MFBM	TREATED TIMBER (NONCOASTAL TREATMENT) _____ DOLLARS _____ CENTS
814-01	169.29	SQUARE YARD	CONCRETE APPROACH SLABS _____ DOLLARS _____ CENTS
814-02	1,303.34	SQUARE YARD	CONCRETE APPROACH SLABS (PILE SUPPORTED) _____ DOLLARS _____ CENTS
S-001	2	EACH	IMPACT ATTENUATORS (CONSTRUCTION ZONE) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-002	500	LINEAR FOOT	CLEANING EXISTING CULVERTS _____ DOLLARS _____ CENTS
S-003	1,500	HOUR	VIBRATION MONITORING _____ DOLLARS _____ CENTS
S-005	1,445	LINEAR FOOT	SHEET PILE _____ DOLLARS _____ CENTS
S-007	1,316	LINEAR FOOT	SAW CUTTING (1/2" DEPTH) _____ DOLLARS _____ CENTS
S-007-A	1,491	LINEAR FOOT	SAW CUTTING (1" DEPTH) _____ DOLLARS _____ CENTS
S-008-A	280	LINEAR FOOT	CONDUIT (1" PVC) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-008-B	265	LINEAR FOOT	CONDUIT (2" PVC) _____ DOLLARS _____ CENTS
S-008-C	240	LINEAR FOOT	CONDUIT (3" PVC) _____ DOLLARS _____ CENTS
S-009	11	EACH	TRAFFIC MANHOLE _____ DOLLARS _____ CENTS
S-011	385	LINEAR FOOT	LOOP DETECTOR _____ DOLLARS _____ CENTS
S-012-A	15	EACH	SIGNAL HEAD (TYPE A)(MAST ARM MOUNT) _____ DOLLARS _____ CENTS
S-012-B	1	EACH	SIGNAL HEAD (TYPE B)(MAST ARM MOUNT) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-012-C	3	EACH	SIGNAL HEAD (TYPE A)(PEDESTAL MOUNT) _____ DOLLARS _____ CENTS
S-013	LUMP	LUMP SUM	PRIORITY CONTROL EQUIPMENT _____ DOLLARS _____ CENTS
S-013-A	1,830	LINEAR FOOT	CABLE (2c #14 AWG, 600V)(WITH OUTER SHIELD) _____ DOLLARS _____ CENTS
S-013-B	380	LINEAR FOOT	CABLE (5c #14 AWG, 600V) _____ DOLLARS _____ CENTS
S-013-C	840	LINEAR FOOT	CABLE (7c #14 AWG, 600V) _____ DOLLARS _____ CENTS
S-013-D	325	LINEAR FOOT	CABLE (12c #19 AWG, 600V)(WITH OUTER SHIELD) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-014	3	EACH	SIGNAL SUPPORT (PEDESTAL POLE) _____ DOLLARS _____ CENTS
S-101-A	18	EACH	DECK DRAINAGE SYSTEM (TYPE A) _____ DOLLARS _____ CENTS
S-101-B	LUMP	LUMP	DECK DRAINAGE SYSTEM (TYPE B) _____ DOLLARS _____ CENTS
S-102	10	EACH	LIGHT SUPPORT BASE _____ DOLLARS _____ CENTS
S-103-A	3	EACH	SIGN SUPPORT BASE (SMALL) _____ DOLLARS _____ CENTS
S-103-B	2	EACH	SIGN SUPPORT BASE (OVERHEAD TRUSS) _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-104	4	EACH	IMPACT ATTENUATORS (KINETIC) _____ DOLLARS _____ CENTS
S-105	LUMP	LUMP SUM	BRICK VENEER (COLUMNS) _____ DOLLARS _____ CENTS
S-150	450	LINEAR FOOT	8" PVC (SDR26) SEWER PIPE AT 4' TO 6' OF COVER _____ DOLLARS _____ CENTS
S-151	100	LINEAR FOOT	8" PVC (SDR26) SEWER PIPE AT 6' TO 8' OF COVER _____ DOLLARS _____ CENTS
S-152	560	LINEAR FOOT	TYPE III STANDARD TRENCH (4' TO 6') _____ DOLLARS _____ CENTS
S-153	100	LINEAR FOOT	TYPE IV STANDARD TRENCH (6' TO 8') _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-154	2	EACH	STANDARD MANHOLES LESS THAN 6' DEEP _____ DOLLARS _____ CENTS
S-155	1	EACH	STANDARD MANHOLES AT 6' TO 8' DEEP _____ DOLLARS _____ CENTS
S-156	100	LINEAR FOOT	6" PVC (SDR26) SERVICE LINE _____ DOLLARS _____ CENTS
S-157	7	EACH	8" X 6" PVC 45 DEGREE WYES _____ DOLLARS _____ CENTS
S-158	22	EACH	6" PVC 45 DEGREE ELBOWS _____ DOLLARS _____ CENTS
S-159	1	EACH	6" CLEAN OUT INSTALLATION _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-160	410	CUBIC YARD	GRANULAR MATERIAL BACKFILL FOR SEWER LINE _____ DOLLARS _____ CENTS
S-161	5.5	100 LN FT	SEWER LINE MARKING TAPE _____ DOLLARS _____ CENTS
S-162	590.0	LINEAR FOOT	DEMOLITION OF EXISTING SEWER LINE _____ DOLLARS _____ CENTS
S-163	135	LINEAR FOOT	DEMOLITION OF EXISTING HOUSE SERVICE LINE _____ DOLLARS _____ CENTS
S-164	2	EACH	DEMOLITION OF EXISTING MANHOLE _____ DOLLARS _____ CENTS
S-165	35	LINEAR FOOT	8" D. I. PIPE FOR TEMPORARY WATER LINE _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-166	0.35	TON	D. I. FITTINGS W/RESTR. JOINTS FOR TEMP. WATER LINE _____ DOLLARS _____ CENTS
S-170	500	LINEAR FOOT	8" PVC PIPE (C-900) _____ DOLLARS _____ CENTS
S-171	700	LINEAR FOOT	8" PVC PIPE (C-900) WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-172	460	LINEAR FOOT	8" DUCTILE IRON PIPE WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-173	15	LINEAR FOOT	6" DUCTILE IRON PIPE WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-174	0.30	TON	DUCTILE IRON FITTINGS _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-175	3.0	TON	DUCTILE IRON FITTINGS WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-176	12	EACH	AIR VALVE INSTALLATIONS _____ DOLLARS _____ CENTS
S-177	10	EACH	8" VALVE WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-178	1	EACH	6" VALVE WITH RESTRAINED JOINTS _____ DOLLARS _____ CENTS
S-179	2	EACH	HYDRANT INSTALLATION (INCLUDING VALVES, ETC.) _____ DOLLARS _____ CENTS
S-180	3	EACH	2" METER RELOCATION _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-181	1	EACH	3/4" METER RELOCATION _____ DOLLARS _____ CENTS
S-182	40	LINEAR FOOT	2" P.E. SERVICE LINE _____ DOLLARS _____ CENTS
S-183	25	LINEAR FOOT	3/4" P.E. SERVICE LINE _____ DOLLARS _____ CENTS
S-184	15	LINEAR FOOT	2" GALV. IRON (SCH. 40) TEMP. SERVICE LINE _____ DOLLARS _____ CENTS
S-185	15	LINEAR FOOT	2" PVC (SCH. 80) TEMP. SERVICE LINE _____ DOLLARS _____ CENTS
S-186	4	EACH	2" SERVICE TAP _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-187	2	EACH	3/4" SERVICE TAP _____ DOLLARS _____ CENTS
S-188	2.0	MFBM	TIMBER THRUST BLOCKING _____ DOLLARS _____ CENTS
S-189	325	CUBIC YARD	GRANULAR MATERIAL FOR WATER LINE FOUNDATION _____ DOLLARS _____ CENTS
S-190	665.0	LINEAR FOOT	GRANULAR MATERIAL BACKFILL FOR WATER LINE _____ DOLLARS _____ CENTS
S-191	16.5	100 LN FT	WATER LINE MARKING TAPE _____ DOLLARS _____ CENTS
S-192	LUMP	LUMP SUM	ABANDONMENT & REMOVAL OF ALL WATER PIPE ALONG CAUSEWAY BLVD. _____ DOLLARS _____ CENTS

ITEM NUMBER	APPROXIMATE QUANTITY	UNIT OF MEASURE	PAY ITEM UNIT PRICE (IN WORDS, INK OR TYPED)
S-193	60	HOUR	POLICE DETAIL FOR I-10 WESTBOUND CLOSURE _____ DOLLARS _____ CENTS
S-194	60	HOUR	POLICE DETAIL FOR I-10 EASTBOUND CLOSURE _____ DOLLARS _____ CENTS
S-195	LUMP	LUMP SUM	I-10 WB LANE CLOSURE _____ DOLLARS _____ CENTS
S-196	LUMP	LUMP SUM	I-10 EB LANE CLOSURE _____ DOLLARS _____ CENTS
S-197	4	EACH	DYNAMIC MESSAGE SIGN UNIT _____ DOLLARS _____ CENTS

CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM

THIS FORM, THE SCHEDULE OF ITEMS, AND THE PROPOSAL GUARANTY MUST BE COMPLETED AS INDICATED AND SUBMITTED TO THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (DOTD) TO CONSTITUTE A VALID BID

STATE PROJECT NO(S). **450-15-0100**

FEDERAL AID PROJECT NO(S). **10-5(362)229**

NAME OF PROJECT **CAUSEWAY BOULEVARD INTERCHANGE (PHASE I)**

I (WE) HEREBY CERTIFY THAT I (WE) HAVE CAREFULLY EXAMINED THE PROPOSAL, PLANS AND SPECIFICATIONS, INCLUDING ANY AND ALL ADDENDA, AND THE SITE OF THE ABOVE PROJECT AND AM (ARE) FULLY COGNIZANT OF ALL PROPOSAL DOCUMENTS, THE MASTER COPY OF WHICH IS ON FILE AT DOTD HEADQUARTERS IN BATON ROUGE, LA., AND ALL WORK, MATERIALS AND LABOR REQUIRED THEREIN, AND AGREE TO PERFORM ALL WORK, AND SUPPLY ALL NECESSARY MATERIALS AND LABOR REQUIRED FOR SUCCESSFUL AND TIMELY COMPLETION OF THE ABOVE PROJECT AND TO ACCEPT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS ATTACHED HERETO AND MADE A PART HEREOF MULTIPLIED BY THE ACTUAL QUANTITY OF UNIT OF MEASURE PERFORMED FOR EACH ITEM, AS AUDITED BY DOTD, AS FULL AND FINAL PAYMENT FOR ALL WORK, LABOR AND MATERIALS NECESSARY TO COMPLETE THE ABOVE PROJECT, SUBJECT TO INCREASE ONLY FOR PLAN CHANGES (CHANGE ORDERS) APPROVED BY THE DOTD CHIEF ENGINEER OR HIS DESIGNEE. THIS BID IS SUBMITTED IN ACCORDANCE WITH THE GENERAL BIDDING REQUIREMENTS IN THE CONSTRUCTION PROPOSAL AND ALL SPECIAL PROVISIONS, PLANS, SUPPLEMENTAL SPECIFICATIONS, AND THE LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 EDITION). I (WE) UNDERSTAND THAT THE SUMMATION OF THE PRODUCTS OF THE UNIT PRICES BID ON THE SCHEDULE OF ITEMS MULTIPLIED BY THE ESTIMATED QUANTITY OF UNIT OF MEASURE FOR EACH ITEM, ALONG WITH ANY OTHER FACTORS SPECIFIED TO BE APPLICABLE SUCH AS CONSTRUCTION TIME AND/OR LANE RENTAL, SHALL BE THE BASIS FOR THE COMPARISON OF BIDS. I (WE) UNDERSTAND THAT THE SCHEDULE OF ITEMS MUST CONTAIN UNIT PRICES WRITTEN OUT IN WORDS AND THAT THE SCHEDULE OF ITEMS SUBMITTED AS PART OF THIS BID IS ON THE FORM SUPPLIED BY DOTD IN THE BID PROPOSAL. MY (OUR) PROPOSAL GUARANTY IN THE AMOUNT SPECIFIED FOR THE PROJECT IS ATTACHED HERETO AS EVIDENCE OF MY (OUR) GOOD FAITH TO BE FORFEITED IF THIS BID IS ACCEPTED BY DOTD AND I (WE) FAIL TO COMPLY WITH ANY REQUIREMENT NECESSARY FOR AWARD AND EXECUTION OF THE CONTRACT, AS WELL AS, SIGN AND DELIVER THE CONTRACT AND PAYMENT/PERFORMANCE/RETAINAGE BOND AS REQUIRED IN THE SPECIFICATIONS.

NONCOLLUSION DECLARATION (APPLICABLE TO FEDERAL-AID PROJECTS)

I (WE) DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND THE STATE OF LOUISIANA THAT I (WE) HAVE NOT DIRECTLY OR INDIRECTLY, ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THE CONTRACT FOR THIS PROJECT NOR VIOLATED LA. R.S. 48:254.

BIDDER'S DBE GOAL STATEMENT (APPLICABLE TO DBE GOAL PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A DISADVANTAGED BUSINESS ENTERPRISE (DBE) GOAL PROJECT IN ACCORDANCE WITH THE DBE PROVISIONS OF THIS CONTRACT, THE BIDDER ASSURES DOTD THAT HE/SHE WILL MEET OR EXCEED THE DBE CONTRACT GOAL, OR IF THE BIDDER CANNOT MEET THE REQUIRED DBE GOAL, THE BIDDER ASSURES DOTD THAT HE/SHE HAS MADE AND CAN DOCUMENT GOOD FAITH EFFORTS MADE TOWARDS MEETING THE GOAL REQUIREMENT IN ACCORDANCE WITH THE CONTRACT AND DBE PROGRAM MANUAL INCORPORATED HEREIN BY REFERENCE.

THE APPARENT LOW BIDDER SHALL COMPLETE AND SUBMIT TO THE DOTD COMPLIANCE PROGRAMS OFFICE, FORM CS-6AAA AND ATTACHMENT(S) AND, IF NECESSARY, DOCUMENTATION OF GOOD FAITH EFFORTS MADE BY THE BIDDER TOWARD MEETING THE GOAL, WITHIN TEN BUSINESS DAYS AFTER THE OPENING OF BIDS FOR THIS PROJECT. RESPONSIVENESS OF INFORMATION SUPPLIED IN THIS SECTION OF THIS CONSTRUCTION PROPOSAL SIGNATURE AND EXECUTION FORM IS GOVERNED BY THE DBE REQUIREMENTS INCLUDED WITHIN THE SPECIFICATIONS AND DBE PROGRAM MANUAL.

CERTIFICATION OF EMPLOYMENT OF LOUISIANA RESIDENTS TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECTS (APPLICABLE TO TIME PROJECTS)

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS A TRANSPORTATION INFRASTRUCTURE MODEL FOR ECONOMIC DEVELOPMENT (TIME) PROJECT AS DEFINED IN ACT NO. 16 OF THE 1989 FIRST EXTRAORDINARY SESSION OF THE LEGISLATURE WHICH ENACTED PART V OF CHAPTER 7 OF SUBTITLE II OF TITLE 47 OF THE LOUISIANA REVISED STATUTES OF 1950, COMPRISED OF R.S. 47:820.1 THROUGH 820.6.

THE BIDDER CERTIFIES THAT AT LEAST 80 PERCENT OF THE EMPLOYEES EMPLOYED ON THIS TIME PROJECT WILL BE LOUISIANA RESIDENTS IN ACCORDANCE WITH LOUISIANA R.S. 47:820.3.

NON PARTICIPATION IN PAYMENT ADJUSTMENT (ASPHALT CEMENT AND FUELS) STATEMENT

IF THIS PROJECT IS DESIGNATED BY SPECIAL PROVISION AS BEING SUBJECT TO PAYMENT ADJUSTMENT FOR ASPHALT CEMENT AND/OR FUELS, THE BIDDER HAS THE OPTION OF REQUESTING EXCLUSION FROM SAID PAYMENT ADJUSTMENT PROVISIONS THAT ARE ESTABLISHED BY SPECIAL PROVISION ELSEWHERE HEREIN.

IF THE BIDDER DESIRES TO BE EXCLUDED FROM THESE PAYMENT ADJUSTMENT PROVISIONS,

THE BIDDER IS REQUIRED TO MARK HERE ☐

FAILURE TO MARK THIS BOX PRIOR TO BID OPENING WILL CONSTITUTE FORFEITURE OF THE BIDDER'S OPTION TO REQUEST EXCLUSION.

STATE PROJECT NO(S). **450-15-0100**

BIDDER SIGNATURE REQUIREMENTS (APPLICABLE TO ALL PROJECTS)

THIS BID FOR THE CAPTIONED PROJECT IS SUBMITTED BY:

Name of Principal (Individual, Firm, Corporation, or Joint Venture)

If Joint Venture, Name of First Partner

(Louisiana Contractor's License Number of Bidder or First Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

If Joint Venture, Name of Second Partner

(Louisiana Contractor's License Number of Second Partner to Joint Venture)

(Business Street Address)

(Business Mailing Address, if different)

(Area Code and Telephone Number of Business)

(Telephone Number and Name of Contact Person)

(Telecopier Number, if any)

ACTING ON BEHALF OF THE BIDDER, THIS IS TO ATTEST THAT THE UNDERSIGNED DULY AUTHORIZED REPRESENTATIVE OF THE ABOVE CAPTIONED FIRM, CORPORATION OR BUSINESS, BY SUBMISSION OF THIS BID, AGREES AND CERTIFIES THE TRUTH AND ACCURACY OF ALL PROVISIONS OF THIS PROPOSAL, INCLUSIVE OF THE REQUIREMENTS, STATEMENTS, DECLARATIONS AND CERTIFICATIONS ABOVE AND IN THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY. EXECUTION AND SIGNATURE OF THIS FORM AND SUBMISSION OF THE SCHEDULE OF ITEMS AND PROPOSAL GUARANTY SHALL CONSTITUTE AN IRREVOCABLE AND LEGALLY BINDING OFFER BY THE BIDDER.

(Signature)

(Printed Name)

(Title)

(Date of Signature)

(Signature)

(Printed Name)

(Title)

(Date of Signature)

CONTRACTOR'S INFORMATIONAL BID

It is agreed that the total bid shown below, determined by the bidder, is for purposes of opening and reading bids only and that the low bidder for this project will be determined in accordance with the special provision entitled **COST-PLUS-TIME BIDDING PROCEDURE (A+B METHOD)**, as determined by the Department.

A = Summation of products of the quantities shown in the Schedule of Items multiplied by the unit prices.

A = _____

B = Bidders proposed contract time multiplied by the Daily User Cost ($5000).

B = _____ Calendar Days x $5,000

B = _____

Contractor's Total Bid (A + B) _____

CS-14AA
01/08