

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE**

August 18, 2026

ADDENDUM NO. 2

TO: ALL BIDDERS

**SUBJECT: GLASGOW AVENUE SIDEWALKS PROJECT
CITY-PARISH PROJECT NO. 24-EN-HC-0026**

ORIGINAL BID DATE: Tuesday, August 18, 2026 at 2:00 p.m.

REVISED DATE BY THIS ADDENDUM, THURSDAY, AUGUST 27, 2026 @ 2:00 P.M.

The following revisions shall be incorporated in and take precedence over any conflicting part of the original contract documents.

REQUESTS FOR INFORMATION AND RESPONSES

As of August 17, 2026, the following request for information were received and are being addressed as follows:

1. With reference to **Requests for Information and Responses** No. 10 in Addendum No. 1, regarding the revision to the description and quantities for **Concrete Collar (Ref. No. 9900009)**, it appears that an updated Unit Price Form should have been issued via addendum to revise the quantity from eleven (11) units to eight (8) units.

- *The Unit Price Form has been updated accordingly as attached below.*

2. Is there a budget or engineer estimate?

- *Yes.*

3. Is testing to be retained and paid for by the owner or the contractor?

- *Yes, by the owner.*

4. Everyone must use the attached Unit Price Form for your bid!!!



George Chike, P.E.
Project Manager

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF TRANSPORTATION &
DRAINAGE ENGINEERING DIVISION**

PART 1

UNIFORM CONSTRUCTION BID FORMS

FOR

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

BID DATE: TUESDAY, AUGUST 18TH, 2026

BID TIME: 2:00 P.M., LOCAL TIME

BID OF:

(CONTRACTOR'S NAME)

INSTRUCTIONS FOR SUBMITTING BID

1. Submit "PART 1A, BID FORMS REQUIRED BY STATUTE OR BY THE LOUISIANA ADMINISTRATIVE CODE" prior to the opening of bids.
2. Submit "PART 1, BID FORMS" only as your bid.
3. Retain "PART 2, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS" for your records.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: City of Baton Rouge
Parish Of East Baton Rouge
Purchasing Division Room 826
222 Saint Louis St. City Hall
Baton Rouge, LA, 70802
(Owner to provide name and address of owner)

BID FOR: GLASGOW AVE. SIDEWALK PROJECT
(Hyacinth Avenue – Perkins Road)
C.P. Project No. 24-EN-HC-0026
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: DEPARTMENT OF TRANSPORTATION & DRAINAGE ENGINEERING DIVISION and dated: July 17th, 2026

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging)

No. _____ Dated: _____ No. _____ Dated: _____ No. _____ Dated: _____ No. _____ Dated: _____

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

Dollars (\$_____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

Dollars (\$ _____)

Alternate No. 2 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER:

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER:

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise, it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

**** A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made part of this bid.

BID BOND
(Required for Bids Over \$25,000)

That we, the undersigned, _____, as
Principal (Bidder), and _____ as
Surety, are hereby held and firmly bound unto the City of Baton Rouge and Parish of East Baton Rouge as Owner,
in the penal sum of five percent (5%) of the amount bid for the payment of which, well and truly to be made, we
hereby jointly and severally bind ourselves, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain
Bid, attached hereto and hereby made a part hereof to enter into an Agreement in writing, for:

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

NOW THEREFORE,

- (a) If said Bid shall be rejected, or in the alternative,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the Form of Contract
attached hereto (properly completed in accordance with said Bid) and shall furnish bonds for his faithful
performance of said Contract and for furnishing materials in connection therewith and shall in all other
respects perfect the Agreement created by the acceptance of said Bid,

then this obligation shall be void; otherwise, the same shall remain in force and effect; it being expressly
understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed
the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall
be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and
said Surety does hereby waive notice of any extension.

IN WITNESS WHEREOF, Said Principal and Surety have hereunto set their hands and seals, this _____ day
of _____, 20____.

PRINCIPAL (BIDDER)

SURETY

(Address)

(Address)

By: _____

(Typed Name and Title)

By: _____

(Typed Name and Title)

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> ADJUSTING VALVE BOXES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1112100	1	EACH	\$.	\$.
<i>Description:</i> ADJUSTING UTILITY BOXES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1112103	2	EACH	\$.	\$.
<i>Description:</i> RESTORE ASPHALT CONCRETE PAVEMENT AND BASE				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1151300	100	SY	\$.	\$.
<i>Description:</i> Four (4) Inch Wide Thermoplastic Reflective Striping (90 mil)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195104	200	LF	\$.	\$.
<i>Description:</i> Twenty-Four (24) Inch Wide Thermoplastic Reflective Striping (125 mil)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195324	1000	LF	\$.	\$.
<i>Description:</i> REMOVAL OF EXISTING PAVEMENT MARKINGS				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195601	50	SY	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Clearing and Grubbing				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2010100	1	LUMP	\$.	\$.
<i>Description:</i> TREE TRIMMING AND PRUNING				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2010504	1	LUMP	\$.	\$.
<i>Description:</i> Removal of Structures and Obstructions				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020100	1	LUMP	\$.	\$.
<i>Description:</i> Removal of Asphalt Surfacing and Base				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020500	75	SY	\$.	\$.
<i>Description:</i> Removal of Concrete Walks and Drives				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020600	725	SY	\$.	\$.
<i>Description:</i> Removal of Concrete Curbs				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020700	55	LF	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Saw Cutting Concrete or Asphalt				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020900	500	LF	\$.	\$.
<i>Description:</i> Excavation and Embankment				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2030800	1	LUMP	\$.	\$.
<i>Description:</i> Traffic Maintenance Aggregate				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
4010100	16	CY	\$.	\$.
<i>Description:</i> 15" Reinforced Concrete Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010215	620	LF	\$.	\$.
<i>Description:</i> 24" Reinforced Concrete Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010224	54	LF	\$.	\$.
<i>Description:</i> 18" Equiv. Reinforced Concrete Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010318	250	LF	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> 24" Equiv. Reinforced Concrete Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010324	896	LF	\$.	\$.
<i>Description:</i> 24" Bituminous Coated Corrugated Metal Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010624	44	LF	\$.	\$.
<i>Description:</i> 8" Plastic Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010908	56	LF	\$.	\$.
<i>Description:</i> Grate Inlet (CPS 702-20)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020301	23	EACH	\$.	\$.
<i>Description:</i> Weir Inlet (CPS 702-41)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020502	1	EACH	\$.	\$.
<i>Description:</i> Drain Manhole (CPS 702-31)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020701	7	EACH	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Trench Drain (17" Width)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020901	15	LF	\$.	\$.
<i>Description:</i> Adjusting Drain Manholes, Inlets and Junction Boxes				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7021000	6	EACH	\$.	\$.
<i>Description:</i> Adjusted Sanitary Sewer Lateral Connections				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
8024000	4	EACH	\$.	\$.
<i>Description:</i> 4-Ft. Chain Link Fence				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9020104	50	LF	\$.	\$.
<i>Description:</i> Seed				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9030800	30	LB	\$.	\$.
<i>Description:</i> Fertilizer				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9030900	100	LB	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Water				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031000	100	MGAL	\$.	\$.
<i>Description:</i> Slab Sod				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031500	1600	SY	\$.	\$.
<i>Description:</i> Stormwater Pollution Prevention Plan				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031600	1	LUMP	\$.	\$.
<i>Description:</i> Temporary Signs and Barricades				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9050100	1	LUMP	\$.	\$.
<i>Description:</i> Traffic Signs				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9050200	200	SF	\$.	\$.
<i>Description:</i> Integral Concrete Curb (6" Barrier)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070106	235	LF	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Concrete Curb and Gutter (2 Ft. Wide)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070200	175	LF	\$.	\$.
<i>Description:</i> 4" Concrete Walk				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070304	1900	SY	\$.	\$.
<i>Description:</i> 6" Concrete Walk				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070306	400	SY	\$.	\$.
<i>Description:</i> 6" Concrete Drive				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070406	675	SY	\$.	\$.
<i>Description:</i> 8" Concrete Drive				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070408	12	SY	\$.	\$.
<i>Description:</i> Mobilization				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9090100	1	LUMP	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> TRUNCATED DOME INSET (SIDEWALK HANDICAP RAMPS)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900006	350	SF	\$.	\$.
<i>Description:</i> CONCRETE COLLAR				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900009	8	EACH	\$.	\$.
<i>Description:</i> CLEANING EXISTING PIPES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900042	500	LF	\$.	\$.
<i>Description:</i> TREE ROOT PROTECTION				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900070	210	SY	\$.	\$.
<i>Description:</i> PEDESTRIAN HAND RAILING				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900071	26	LF	\$.	\$.
<i>Description:</i> COLD MIX ASPHALT PAVEMENT				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9900072	16	CY	\$.	\$.

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF TRANSPORTATION &
DRAINAGE ENGINEERING DIVISION**

PART 1A

**BID FORMS REQUIRED BY STATUE
OR BY LOUISIANA ADMINISTRATIVE CODE**

FOR

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

BID DATE: TUESDAY, AUGUST 18TH, 2026

BID TIME: 2:00 P.M., LOCAL TIME

BID OF:

(CONTRACTOR'S NAME)

INSTRUCTIONS FOR SUBMITTING BID

1. Submit "PART 1A, BID FORMS REQUIRED BY STATUTE OR BY THE LOUISIANA ADMINISTRATIVE CODE" prior to the opening of bids.
1. Submit "PART 1, BID FORMS" only as your bid.
2. Retain "PART 2, SPECIAL PROVISIONS AND CONTRACT DOCUMENTS" for your records.

NAME OF PROJECT

PROJECT NUMBER

DATE OF BID

**ATTESTATION CLAUSE REQUIRED BY
LA. R.S. 38:2227 (PAST CRIMINAL CONVICTIONS OF BIDDERS)**

Appearer, as a Bidder on the above-entitled Public Works Project, does hereby attest that:

- A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

(a) Public bribery (R.S. 14:118)

(c) Extortion (R.S. 14:66)

(b) Corrupt influencing (R.S. 14:120)

(d) Money laundering (R.S. 14:23)

- B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

(a) Theft (R.S. 14:67)

(f) Bank fraud (R.S. 14:71.1)

(b) Identity Theft (R.S. 14:67.16)

(g) Forgery (R.S. 14:72)

(c) Theft of a business record
(R.S. 14:67.20)

(h) Contractors; misapplication of
payments (R.S. 14:202)

(d) False accounting (R.S. 14:70)

(i) Malfeasance in office (R.S. 14:134)

(e) Issuing worthless checks
(R.S. 14:71)

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER**

La. R.S. 38:2212.10 AFFIDAVIT

I, _____, as the authorized representative of the Bidder in accordance with La. R.S. 38:2212.10 hereby certify signing below and by bidding on a contract with the City of Baton Rouge, Parish of East Baton Rouge the following:

- (1) The Bidder is registered and participates in a status verification system to verify that all employees in the state of Louisiana are legal citizens of the United States or are legal aliens.
- (2) The Bidder shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- (3) The Bidder shall require all subcontractors to submit to the employer a sworn affidavit verifying compliance with Paragraphs (1) and (2) above.

Signature of Affiant

Printed Name of Affiant

Title of Affiant

SWORN TO AND SUBSCRIBED BEFORE ME this _____ day of _____, 20____.

Notary Public

Printed Name of Notary: _____

Bar Roll No./Notary No. _____

My Commission Expires: _____

AFFIDAVIT

**STATE OF LOUISIANA
PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, personally came and appeared

who, being duly sworn did depose and say: That he is a duly authorized representative of _____

receiving value for services rendered in connection with:

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

a public project of the City of Baton Rouge, Parish of East Baton Rouge, Louisiana: that he has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by him whose services in connection with the construction, alteration, or demolition of the public building or project or in securing the public contract were in the regular course of their duties for him; and that no part of the contract price received by him was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by him whose services in connection with the construction of the public building or project were in the regular course of their duties for him.

This affidavit is executed in compliance with the provisions of LA R.S. 38:2224.

Affiant's Signature

SWORN TO AND SUBSCRIBED before me, on this _____ day of _____, 20____.
Baton Rouge, Louisiana.

NOTARY PUBLIC

PART 2
SPECIAL PROVISIONS
AND
CONTRACT DOCUMENTS
FOR

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

BID DATE: TUESDAY, AUGUST 18TH, 2026

BID TIME: 2:00 P.M., LOCAL TIME

PREPARED BY:

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF TRANSPORTATION &
DRAINAGE ENGINEERING DIVISION**



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5. Agreement, Performance and Payment Bond, Affidavit, Attached Forms (9 Pages)
 - Certification Regarding Debarment, Suspension and Other Responsibility Matters
 - Attestation Clause per LA RS 38:2227 (Past Criminal Convictions)
 - LA R.S. 38:2212.10 Affidavit
 - LA R.S. 38:2224 Affidavit

To be published three times
Legal- July 24th, 31st, & August 7th, 2026

**THE ADVOCATE
BATON ROUGE, LOUISIANA**

NOTICE TO CONTRACTORS

The City of Baton Rouge and Parish of East Baton Rouge will receive electronic or paper bids for the construction of the following project:

GLASGOW AVENUE SIDEWALKS (Hyacinth Avenue – Perkins Road) CITY-PARISH PROJECT No. 24-EN-HC-0026

PROJECT DESCRIPTION: Grading, Earthwork, Concrete Sidewalks, Drainage Structures, Sub-Surface Drainage, and associated items of work. There will be no pre-bid conference.

Electronic or sealed bids will be received until 2:00 p.m. Local Time, **TUESDAY, AUGUST 18TH, 2026** by the Purchasing Division, Room 826, City Hall, 222 Saint Louis Street, Baton Rouge, Louisiana 70802. No bids will be received after 2:00 p.m. on the same day and date.

Bid Openings can be in person or via teleconference.

Teleconference Call-in Information

Join by phone
+1-408-418-9388 United States Toll
Access code: 263 373 080 (followed by the # button)

Alternate numbers to call if number above is not available, which may occur due to network traffic (use the same Access Code, followed by the # button):

United States Toll (Boston) +1-617-315-0704
United States Toll (Chicago) +1-312-535-8110
United States Toll (Dallas) +1-469-210-7159
United States Toll (Denver) +1-720-650-7664
United States Toll (Jacksonville) +1-904-900-2303
United States Toll (Los Angeles) +1-213-306-3065

Electronic bids and electronic bid bonds for the solicitation will be downloaded by the City of Baton Rouge and Parish of East Baton Rouge, Purchasing Division.

Beginning as soon as feasible after the bid closing time all electronic bids will be downloaded and publicly read aloud along with all paper bids received, if any, in 806 of City Hall immediately after the 2:00 p.m. bid closing.

Bids, amendments to bids, or request for withdrawal of quotations, received after time specified for bid opening shall not be considered for any cause whatsoever.

Bids shall be firm for a period of sixty (60) days from the date of the opening of bids and no bid shall be withdrawn for any reason during this period of time except as allowed per R.S. 38:2214.C.

Official Bid Documents are available at Central Bidding (www.centralbidding.com). Electronic Bids may be submitted at Central Bidding (www.centralbidding.com). For questions related to the electronic bidding

process, please call Central Bidding at 225-810-4814. Paper copies of the plans, specifications and contract documents are on file and may be obtained from the Public Works and Planning Center located at 1100 Laurel St., Engineering Division, Room 137 or Post Office Box 1471, Baton Rouge, Louisiana 70821, upon payment of Ten Dollars (\$10.00). (Make checks payable to the City of Baton Rouge and Parish of East Baton Rouge.) Fees for plans, specifications and contract documents are to cover the cost of reproduction and are non-refundable in accordance with Louisiana Revised Statutes.

A Certified Check or Cashier's Check, payable to the Parish of East Baton Rouge or a satisfactory Bid Bond executed by the Bidder and an acceptable surety, in an amount equal to five percent (5%) of the total bid, shall be submitted with each bid.

Bids shall be received electronically via www.centralbidding.com or on solicitation bid forms furnished by the City of Baton Rouge and Parish East Baton Rouge, and only those bids shall be received by the City-Parish which is submitted by those Contractors in whose names the **solicitation bid** forms and/or specifications were issued. In no event shall **paper solicitation** forms be issued later than twenty-four (24) hours prior to the hour and date set for receiving proposals.

The City of Baton Rouge and Parish of East Baton Rouge has established a Socially and Economically Disadvantaged Business Enterprise (SEDBE) program in accordance with Revised Statute RS 33:2233.4. It is the policy of the Parish to ensure that Eligible Business Enterprises EBE's, certified in accordance with the Parish program, have an equal opportunity to receive and participate in parish contracts.

For this project the EBR Parish Purchasing office has directed a review of the scope of work and has established a minimum EBE goal of 10% of the contract amount. All Bidders shall achieve this goal or demonstrate good faith efforts to achieve the goal. Good faith efforts include meeting this EBE goal or providing documentation demonstrating that the Bidder made sufficient good faith efforts in attempting to meet this goal. Only EBE firms certified under the Parish SEDBE Certification Program at the time of submittal of the bid will count toward this EBE goal. To be considered responsive, the apparent low bidder must submit EBE Forms 1, 1A, and 2, and Letters of EBE Certification, as appropriate within 10 days after bid opening

All Contractors bidding on this work shall comply with all provisions of the State Licensing Law for Contractors, R.S. 37:2150-2163, as amended, for all public contracts. It shall also be the responsibility of the General Contractor to assure that all subcontractors comply with this law. If required for bidding, Contractors must hold an active license issued by the Louisiana State Licensing Board for Contractors in the classification of HIGHWAY, STREET AND BRIDGE CONSTRUCTION, and must show their license number on the face of the bid envelope and the Uniform Public Works Bid Form.

In accordance with La. R.S. 38:2214 (B) the City of Baton Rouge and Parish of East Baton Rouge reserves the right to reject any and all bids for just cause. In accordance with La. R.S. 38:2212 (A)(1)(b), the provisions and requirements of this Section, those stated in the advertisement for bids, and those required on the bid form, shall not be considered as informalities and shall not be waived by any public entity.

For additional information please contact George Chike, P.E. at gchike@brla.gov. or Henoque Abebe, Project Manager at h.abebe@ilsengineering.com.

(Owner to provide name and address of owner)

(Owner to provide name of project and other identifying information)

UCBF 1 OF 2

BID BOND

(Required for Bids Over \$25,000)

That we, the undersigned, _____, as
Principal (Bidder), and _____
as Surety, are hereby held and firmly bound unto the City of Baton Rouge and Parish of East Baton Rouge as
Owner, in the penal sum of five percent (5%) of the amount bid for the payment of which, well and truly to be
made, we hereby jointly and severally bind ourselves, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain
Bid, attached hereto and hereby made a part hereof to enter into an Agreement in writing, for :

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

NOW THEREFORE,

- (a) If said Bid shall be rejected, or in the alternative,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the Form of Contract
attached hereto (properly completed in accordance with said Bid) and shall furnish bonds for his faithful
performance of said Contract and for furnishing materials in connection therewith and shall in all other
respects perfect the Agreement created by the acceptance of said Bid,

then this obligation shall be void; otherwise, the same shall remain in force and effect; it being expressly
understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed
the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall
be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and
said Surety does hereby waive notice of any extension.

IN WITNESS WHEREOF, Said Principal and Surety have hereunto set their hands and seals, this _____ day
of _____, 20____.

PRINCIPAL (BIDDER)

SURETY

(Address)

(Address)

By: _____

(Typed Name and Title)

By: _____

(Typed Name and Title)

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> ADJUSTING VALVE BOXES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1112100	1	EACH	\$.	\$.
<i>Description:</i> ADJUSTING UTILITY BOXES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1112103	2	EACH	\$.	\$.
<i>Description:</i> RESTORE ASPHALT CONCRETE PAVEMENT AND BASE				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1151300	100	SY	\$.	\$.
<i>Description:</i> Four (4) Inch Wide Thermoplastic Reflective Striping (90 mil)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195104	200	LF	\$.	\$.
<i>Description:</i> Twenty-Four (24) Inch Wide Thermoplastic Reflective Striping (125 mil)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195324	1000	LF	\$.	\$.
<i>Description:</i> REMOVAL OF EXISTING PAVEMENT MARKINGS				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
1195601	50	SY	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Clearing and Grubbing				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2010100	1	LUMP	\$.	\$.
<i>Description:</i> TREE TRIMMING AND PRUNING				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2010504	1	LUMP	\$.	\$.
<i>Description:</i> Removal of Structures and Obstructions				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020100	1	LUMP	\$.	\$.
<i>Description:</i> Removal of Asphalt Surfacing and Base				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020500	75	SY	\$.	\$.
<i>Description:</i> Removal of Concrete Walks and Drives				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020600	725	SY	\$.	\$.
<i>Description:</i> Removal of Concrete Curbs				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020700	55	LF	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Saw Cutting Concrete or Asphalt				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020900	500	LF	\$ _____ . _____	\$ _____ . _____
<i>Description:</i> Excavation and Embankment				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2030800	1	LUMP	\$ _____ . _____	\$ _____ . _____
<i>Description:</i> Traffic Maintenance Aggregate				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
4010100	16	CY	\$ _____ . _____	\$ _____ . _____
<i>Description:</i> 15" Reinforced Concrete Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010215	620	LF	\$ _____ . _____	\$ _____ . _____
<i>Description:</i> 24" Reinforced Concrete Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010224	54	LF	\$ _____ . _____	\$ _____ . _____
<i>Description:</i> 18" Equiv. Reinforced Concrete Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010318	250	LF	\$ _____ . _____	\$ _____ . _____

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> 24" Equiv. Reinforced Concrete Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010324	896	LF	\$.	\$.
<i>Description:</i> 24" Bituminous Coated Corrugated Metal Pipe Arch				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010624	44	LF	\$.	\$.
<i>Description:</i> 8" Plastic Pipe				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7010908	56	LF	\$.	\$.
<i>Description:</i> Grate Inlet (CPS 702-20)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020301	23	EACH	\$.	\$.
<i>Description:</i> Weir Inlet (CPS 702-41)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020502	1	EACH	\$.	\$.
<i>Description:</i> Drain Manhole (CPS 702-31)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020701	7	EACH	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Trench Drain (17" Width)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7020901	15	LF	\$.	\$.
<i>Description:</i> Adjusting Drain Manholes, Inlets and Junction Boxes				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
7021000	6	EACH	\$.	\$.
<i>Description:</i> Adjusted Sanitary Sewer Lateral Connections				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
8024000	4	EACH	\$.	\$.
<i>Description:</i> 4-Ft. Chain Link Fence				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9020104	50	LF	\$.	\$.
<i>Description:</i> Seed				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9030800	30	LB	\$.	\$.
<i>Description:</i> Fertilizer				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9030900	100	LB	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Water				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031000	100	MGAL	\$.	\$.
<i>Description:</i> Slab Sod				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031500	1600	SY	\$.	\$.
<i>Description:</i> Stormwater Pollution Prevention Plan				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9031600	1	LUMP	\$.	\$.
<i>Description:</i> Temporary Signs and Barricades				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9050100	1	LUMP	\$.	\$.
<i>Description:</i> Traffic Signs				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9050200	200	SF	\$.	\$.
<i>Description:</i> Integral Concrete Curb (6" Barrier)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070106	235	LF	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> Concrete Curb and Gutter (2 Ft. Wide)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070200	175	LF	\$.	\$.
<i>Description:</i> 4" Concrete Walk				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070304	1900	SY	\$.	\$.
<i>Description:</i> 6" Concrete Walk				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070306	400	SY	\$.	\$.
<i>Description:</i> 6" Concrete Drive				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070406	675	SY	\$.	\$.
<i>Description:</i> 8" Concrete Drive				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9070408	12	SY	\$.	\$.
<i>Description:</i> Mobilization				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9090100	1	LUMP	\$.	\$.

LOUISIANA UNIFORM PUBLIC WORKS BID FORM

UNIT PRICE FORM

To: CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
DEPARTMENT OF PUBLIC WORKS

BID FOR: GLASGOW AVENUE SIDEWALKS (HYACINTH AVE TO PERKINS RD)

Project Number: 24-EN-HC-0026

<i>Description:</i> TRUNCATED DOME INSET (SIDEWALK HANDICAP RAMPS)				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900006	350	SF	\$.	\$.
<i>Description:</i> CONCRETE COLLAR				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900009	8	EACH	\$.	\$.
<i>Description:</i> CLEANING EXISTING PIPES				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900042	500	LF	\$.	\$.
<i>Description:</i> TREE ROOT PROTECTION				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900070	210	SY	\$.	\$.
<i>Description:</i> PEDESTRIAN HAND RAILING				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900071	26	LF	\$.	\$.
<i>Description:</i> COLD MIX ASPHALT PAVEMENT				
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity X Unit Price)
9900072	16	CY	\$.	\$.

AGREEMENT

This Agreement made and entered into at Baton Rouge, Louisiana, effective this ____ day of _____, 20____, by and between the **CITY OF BATON ROUGE AND PARISH OF EAST BATON ROUGE**, hereinafter called "Owner", and _____, hereinafter called "Contractor".

The Contractor shall perform all work required by the Contract Documents for the construction of:

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

The following Contract Documents are all hereby made a part of this Agreement to the same extent as if incorporated herein in full:

1. Notice to Contractors
2. Uniform Construction Bid Forms
3. Unit Price Bid Form
4. Special Provisions/Technical Specifications
5. The Construction Drawings
6. Supplemental Specification
7. The Standard Specifications
8. The following enumerated addenda _____

CONTRACT TIME

The entire contract shall be completed in all details and ready for final acceptance within **ONE HUNDRED SIXTY (160) calendar days** after date stipulated in the Notice to Proceed. Time is of the essence of the contract and the Notice to Proceed will be issued promptly. Contract time extensions will only be allowed in accordance with provisions in the Contract Documents.

FAILURE TO COMPLETE WORK ON TIME

Should the Contractor fail to complete the work within the contract time, as extended, liquidated damages in the amount of **\$430.00** per day, will be assessed Contractor in accordance with the Contract Documents.

INTERPRETATIONS OF CONTRACT PROVISIONS

The interpretations of the provisions of this contract by the Director, Department of Transportation & Drainage, shall be binding upon both parties hereto.

CONTRACT PRICE

The amount to be paid to the Contractor by the Owner is _____. Contract price shown is based on the Unit Price Form included in Contractor's Uniform Public Works Bid Form for the project, showing approximate quantities and unit prices therefore. The final contract price will be determined by the actual quantities in place at the unit prices set forth in said unit price form and any other modifications or changes as mutually agreed upon in writing.

PAYMENT

The Owner will make partial or progress payments less applicable retainage, based upon monthly estimates, in accordance with the Contract Documents and subsection 10-6 of the Standard Specifications.

Upon satisfactory completion of the work, the Owner will make a final payment in accordance with provisions of the Contract Documents.

INSURANCE, INDEMNITY AND LEGAL REGULATIONS

Insurance, indemnity requirements and legal regulations shall conform to those stated in the Contract Documents.

RIGHT TO AUDIT

The Contractor shall permit the authorized representative of the City-Parish to periodically inspect and audit all data and records of the Contractor relating to his performance under this contract.

IN WITNESS WHEREOF, the parties hereto have executed this agreement effective as of the date first written above.

WITNESSES:

**CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE**

By: _____

Emile "Sid" Edwards, Mayor President

CONTRACTOR

By: _____

(Type Name and Title)

PERFORMANCE AND PAYMENT BOND (Required For Contracts Over \$25,000)

That we, the undersigned _____ as principal, hereinafter referred to as "Contractor" and _____, duly authorized to transact business in the State of Louisiana as surety, are held and firmly bound unto the City of Baton Rouge and Parish of East Baton Rouge, hereinafter referred to as "Owner", in the penal sum of _____ lawful money of the United States, for the payment of which well and truly to be made, the said principal and the said surety do hereby bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally, by these presents as follows:

The condition of this obligation is such that whereas, the Contractor by an instrument in writing attached hereto and bearing date of _____, 20_____ has agreed with said Owner to furnish labor, materials, tools and equipment to construct: **GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road) CITY-PARISH PROJECT NO. 24-EN-HC-0026** shown on plans and specified thereby and in the specifications, proposals and agreement forming the contract documents thereto attached.

NOW THEREFORE, if said Contractor shall well and truly in good, sufficient and workmanship manner, and to the satisfaction of the Owner, perform and complete the work required and shall pay all costs, charges, rentals and expenses for labor, material, supplies and equipment and deliver the said improvement to the Owner complete and ready for occupancy or operation, and free from all liens, encumbrances or claims for labor, material or otherwise; and shall pay all other expenses lawfully chargeable to the Owner by reason of any default or neglect of the said Contractor in the performance of said agreement and said work, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, That the said surety for value received hereby stipulates and agrees that no change, extension of time, alterations, or addition to the terms of that contract, or the work to be performed thereunder, or the specifications accompanying the same, shall in anywise affect its obligation on the bond and it does hereby waive notice of any change, extension of time, alterations, or addition to the terms of the contract, or the work, or the specifications.

PROVIDED FURTHER, That if the Contractor, or his, their, or its subcontractors fail to duly pay for any labor, materials, team hire, sustenance, provisions, provender or any other supplies or materials used or consumed or for any materials or supplies furnished for use by such contractors or his, their, or its subcontractors in performance of the work contract to be done, the Surety will pay the same in any amount not exceeding the sum specified in the bond, together with interest and attorney's fees as provided by law.

IN WITNESS WHEREOF, Said Principal and Surety have hereunto set their hands and seals this _____ day of _____, 20_____.

CONTRACTOR/(BIDDER)

SURETY

(Address)

By: _____

(Typed Name and Title)

(WITNESS)

(Address)

By: _____

(Typed Name and Title)

(WITNESS)

AFFIDAVIT

**STATE OF LOUISIANA
PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, personally came and appeared

who, being duly sworn did depose and say: That he is a duly authorized representative of _____

receiving value for services rendered in connection with:

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

a public project of the City of Baton Rouge, Parish of East Baton Rouge, Louisiana: that he has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by him whose services in connection with the construction, alteration, or demolition of the public building or project or in securing the public contract were in the regular course of their duties for him; and that no part of the contract price received by him was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by him whose services in connection with the construction of the public building or project were in the regular course of their duties for him.

This affidavit is executed in compliance with the provisions of LA R.S. 38:2224.

Affiant's Signature

SWORN TO AND SUBSCRIBED before me, on this _____ day of _____ 20____.
Baton Rouge, Louisiana.

NOTARY PUBLIC

CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA



Department of Public Works
Engineering Division (2008)

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER
RESPONSIBILITY MATTERS**

(1) The party signing below hereby certifies, to the best of his knowledge and belief, that he and the officers, directors, members and/or principals of the represented organization:

(a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from any transactions by any governmental body or entity;

(b) have not within a three-year period preceding this certification been found guilty of or had a civil judgment rendered against them for misapplication of funds, fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction or contract; 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 any governmental entity with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) have not within a three-year period preceding this certification had one or more public transactions (Federal, State or Local) terminated for cause or default.

(2) Where the party signing below is unable to certify to any of the statements in this certification, such party signing below shall attach an explanation to this proposal.

ORGANIZATION NAME

NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE

CITY OF BATON ROUGE
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA



Department of Public Works
Engineering Division

INSTRUCTIONS FOR CERTIFICATION REGARDING
DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

1. By signing and submitting this CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS, the certifying party stipulates that the certification is made in strict accordance with these instructions.
2. The inability of a person to provide the certification required will not necessarily result in disqualification. The certifying party shall submit an explanation of why it cannot provide the certification set out on this form. The certification or explanation will be considered in connection with the determination whether to disqualify the certifying party. However, failure of the certifying party to furnish a certification or an explanation shall disqualify such certifying party from participation in the Project.
3. The certification is a material representation of fact upon which reliance will be placed when this transaction/contract is entered into. If it is later determined that the certifying party knowingly rendered an erroneous certification, in addition to other remedies available, the transaction/contract may be terminated for cause or default and the certifying party shall be liable for all costs, expenses and damages including attorney fees.
4. The certifying party shall provide immediate written notice to the Owner if at any time the certifying party learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The certifying party agrees by submitting this certification that, should the proposed transaction/contract be entered into, the certifying party shall not knowingly enter into any lower tier transaction with a person or entity who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this Project, unless authorized by the Owner in writing.
6. The certifying party further agrees by submitting this certification that it will obtain an identical certification from all lower tier contractors/subcontractors.
7. 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. The knowledge and information of the certifying party is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
8. If the certifying party knowingly enters into a lower tier transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this Project, in addition to other remedies available, the transaction/contract may be terminated for cause or default and the certifying party shall be liable for all costs, expenses and damages including attorney fees.

NAME OF PROJECT

PROJECT NUMBER

DATE OF BID

**ATTESTATION CLAUSE REQUIRED BY
LA. R.S. 38:2227 (PAST CRIMINAL CONVICTIONS OF BIDDERS)**

Appearer, as a Bidder on the above-entitled Public Works Project, does hereby attest that:

- A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

(a) Public bribery (R.S. 14:118)

(c) Extortion (R.S. 14:66)

(b) Corrupt influencing (R.S. 14:120)

(d) Money laundering (R.S. 14:23)

- B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

(a) Theft (R.S. 14:67)

(f) Bank fraud (R.S. 14:71.1)

(b) Identity Theft (R.S. 14:67.16)

(g) Forgery (R.S. 14:72)

(c) Theft of a business record
(R.S. 14:67.20)

(h) Contractors; misapplication of
payments (R.S. 14:202)

(d) False accounting (R.S. 14:70)

(i) Malfeasance in office (R.S. 14:134)

(e) Issuing worthless checks
(R.S. 14:71)

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER**

La. R.S. 38:2212.10 AFFIDAVIT

I, _____, as the authorized representative of the Bidder in accordance with La. R.S. 38:2212.10 hereby certify signing below and by bidding on a contract with the City of Baton Rouge, Parish of East Baton Rouge the following:

- (1) The Bidder is registered and participates in a status verification system to verify that all employees in the state of Louisiana are legal citizens of the United States or are legal aliens.
- (2) The Bidder shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- (3) The Bidder shall require all subcontractors to submit to the employer a sworn affidavit verifying compliance with Paragraphs (1) and (2) above.

Signature of Affiant

Printed Name of Affiant

Title of Affiant

SWORN TO AND SUBSCRIBED BEFORE ME this _____ day of _____, 20____.

Notary Public

Printed Name of Notary: _____

Bar Roll No./Notary No. _____

My Commission Expires: _____

AFFIDAVIT

**STATE OF LOUISIANA
PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, personally came and appeared

who, being duly sworn did depose and say: That he is a duly authorized representative of _____

receiving value for services rendered in connection with:

GLASGOW AVENUE SIDEWALK PROJECT (Hyacinth Avenue – Perkins Road)

CITY-PARISH PROJECT No. 24-EN-HC-0026

a public project of the City of Baton Rouge, Parish of East Baton Rouge, Louisiana: that he has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by him whose services in connection with the construction, alteration, or demolition of the public building or project or in securing the public contract were in the regular course of their duties for him; and that no part of the contract price received by him was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by him whose services in connection with the construction of the public building or project were in the regular course of their duties for him.

This affidavit is executed in compliance with the provisions of LA R.S. 38:2224.

Affiant's Signature

SWORN TO AND SUBSCRIBED before me, on this _____ day of _____ 20____.
Baton Rouge, Louisiana.

NOTARY PUBLIC

SPECIAL PROVISIONS

The Standard Specifications referred to herein are the 1997 City of Baton Rouge, Parish of East Baton Rouge Standard Specifications for Public Works Construction. The Standard Specifications are hereby amended to include the following Special Provisions and where applicable shall take precedence over the aforementioned Standard Specifications. When any part of the Standard Specifications is unaltered by the following Special Provisions, the unaltered provisions of the Standard Specifications shall remain in effect.

Copies of the Standard Specifications may be obtained from the Department of Transportation and Drainage, Engineering Division, Room 137, Public Works and Planning Center, 1100 Laurel Street or Post Office Box 1471, Baton Rouge, Louisiana 70821 (Telephone No. [225] 389-3186).

NOTICE TO BIDDERS

For Individual Bids (Quotations) exceeding \$25,000, the following shall apply:

- a). A Bid Bond, cashier's check or certified check is required to be submitted with the proposal.
- b). A Performance and Payment Bond will be required for the contract.
- c). The Contract shall be approved by the Metropolitan Council.
- d). The Contract shall be recorded with the Recorder of Mortgages.
- e). Retainage shall be withheld until receipt of a clear lien certificate following the 45-day lien period after the Metropolitan Council has approved final acceptance of the Contract.

The above requirements of this Notice to Bidders do not apply to individual quotations of \$25,000.00 or less.

EXAMINATION OF PLANS, SPECIFICATION, SPECIAL PROVISIONS AND SITE OF WORK

Before preparing his bid, each bidder is expected to make a field examination of the proposed work and to fully acquaint himself with conditions relating to construction and labor so that he may fully understand the facilities, difficulties and restrictions attending the execution of the work under this contract. Bidders should thoroughly examine and be familiar with the Plans, Specifications and Contract Documents.

Submission of a bid shall be considered prima facie evidence that the bidder has made such an examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the plans, project specifications and documents.

PART I GENERAL PROVISIONS

SECTION 2 BIDDING REQUIREMENTS Section 2 of the Standard Specifications is amended to include the following:

Bidders are advised to familiarize themselves with Section 2 of the Standard Specifications, particularly the requirements of Subsections 2 - 2 and 2 - 4 that would render the bid irregular.

Indicated below is a sample copy of a Unit Price Bid Form showing how this form is to be properly filled out. For non-electronic submittals the form may be hand written (all written entries must be in ink) or typed; and it is necessary to **FILL IN ALL BLANK SPACES**. In the event of a conflict between the Unit Price Extension and the Unit Price, the unit price shall govern. **SPACES LEFT BLANK SHALL CAUSE THE PROPOSAL TO BE DECLARED IRREGULAR.**

**Louisiana Uniform Public Work Bid Form
Unit Price Form**

DESCRIPTION: <i>(Owner to provide)</i>		Clearing and Grubbing		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2010100	1	LUMP	\$ 56,000.00	\$ 56,000.00
DESCRIPTION: <i>(Owner to provide)</i>		Removal of Concrete Pavement		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
2020300	1,130	SY	\$ 9.08	\$ 10,260.40
DESCRIPTION: <i>(Owner to provide)</i>		Unrestrained Joint Ductile Iron Sewer Force Main (36")		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
804010Q	1,546	LF	\$ 342.64	\$ 529,721.44
DESCRIPTION: <i>(Owner to provide)</i>		Fertilizer		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity X Unit Price)</i>
9030900	11,600	LB	\$ 0.45	\$ 5,220.00

Total of the Unit Price extensions must be entered on the Louisiana Uniform Public Bid Form furnished herein.

2-2 PREPARATION OF PROPOSAL FORM: This sub-section of the Standard Specifications is deleted and replaced by the following:

Each bidder must submit his bid proposal on the form furnished herein. Altered or substitute forms will not be accepted. The term "altered" shall mean any change in an item, quantity, price or amount set forth in the unit price form, except where necessary to correct an obvious error in the printed form. The blank spaces in the unit price form provided for each reference item must be filled in according to the requirements of the bid proposal form. The bidder must state the price written in ink or typed, for which he proposes to do each reference item of the work contemplated, and the bidder shall make an extension of the total cost of the reference item which must be inserted at the place indicated in the bid proposal form. Where "no" dollars or "no" cents is part of the price bid, the numeral "0" shall be inserted in the appropriate spaces. The use of a "—" (hyphen or dash) in a blank space will be interpreted as "0". Where a Contract item is to be paid by the Owner or others, a price for this purpose will be pre-inserted in the unit price form. In case of a conflict between the Unit Price Extension and the Unit Price, the Unit Price shall govern. Should the Unit Price Extension be illegible, the Unit Price shall govern. Errors in unit price extensions will be

corrected. The total bid amount will be the summation of the correct unit price extensions. Any revisions to bid prices shall be initialed by the bidder or the bidder's authorized representative before submitting bid to Owner. The bidder must acknowledge all issued addendums in the place provided in the Uniform Public Works Bid Form.

All bidders shall be duly registered with the Louisiana Secretary of State and authorized to do business in the State of Louisiana in order to qualify as a bidder. The authority of the signature of the person submitting the bid shall not be acceptable unless one of the following conditions are met:

- A. The signature on the bid is that of any corporate officer listed on the most current annual report on file with the Secretary of State, or the signature on the bid is that of any member of a partnership listed in the most current partnership records on file with the Secretary of State.
- B. The signature on the bid is that of an authorized representative of the corporation, partnership, or other legal entity and the bid is accompanied by a corporate resolution, certification as to the corporate principal, or other documents indicating authority which are acceptable to the public entity.
- C. The corporation, partnership, or other legal entity has filed in the appropriate records of the Secretary of State in which the public entity is located, an affidavit, resolution, or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts. Such document on file with the Secretary of State shall remain in effect and shall be binding upon the principal until specifically rescinded and canceled from the records of the office.
- D. As required by La. R.S. 38:2212.

By signing the bid, the bidder certifies compliance with the above.

For projects requiring a licensed Contractor, the Louisiana State Contractor's License Number shall be entered on the bid envelope and the Uniform Public Works Bid Form. By entering such license number, the bidder certifies that the license number provided is recognized by the Louisiana State Licensing Board for Contractors for the work to be performed under this Project. All bids shall comply with Louisiana law including, but not limited to, La. R.S. 37:2163.

Excluded Parties List and UEI Verification: To be awarded a contract using federal funding, the bidder must be eligible to receive a contract as determined by the Federal Government's Excluded Parties List. Prior to contract award the successful bidder will be required to secure a Unique Entity ID (UEI) through www.sam.gov. Each bidder must have an active UEI prior to award of the contract.

2-3 PROPOSAL GUARANTY All reference to countersigning bonds shall be deleted.

2-7 PUBLIC OPENING OF PROPOSALS: Delete the last sentence of this section and replace with the following:

Upon opening all bids, bids will be checked for irregularities, then tabulated and forwarded to the department in charge of the work for review and recommendation. Tabulation of all bids received shall be available for public inspection and are posted for viewing on the following web page: <http://city.brla.gov/dept/purchase/bidresults.asp>. These bid tabulations are for informational purposes only and shall not be considered final until reviewed and approved by the Purchasing Director and department concerned.

2-8 QUALIFICATIONS OF BIDDERS: This subsection is amended to include the following:

2-8.1 OTHER DOCUMENTATION AND INFORMATION: In accordance with La. R.S. 38:2212 B.(3)(b) prior to the opening of all bids all bidders shall fully execute and submit all bid forms, included herein as Part 1A "BID FORMS REQUIRED BY STATUE OR BY THE LOUISIANA ADMINISTRATIVE CODE" shall be

completed and submitted prior to the bid opening of all bids related to a contract for public works either enclosed in a separate envelope, included in their sealed bid envelope or uploaded electronically via the Central Bidding software. Failure of the Bidder to fully execute and submit these forms prior to the date and time established for the receipt of bids shall result in the bid being declared "non-responsive". These documents that are to be submitted PRIOR TO BID OPENING include the following:

- **Past Criminal Convictions:** (Form AT-1: ATTESTATION CLAUSE). In accordance with LA RS 38:2227 a Bidder must attest to past criminal convictions
- **Verification of Employees:** (Form AF-1: Legal Citizen Affidavit). In accordance with LA RS 38:2212.10 a Bidder must be registered and participate in the "E-Verify" Program and conform to the statutory requirements of the law.
- **Public Contract Affidavit:** In accordance with LA RS 38:2224

2-8.2 DOCUMENTS TO BE SUBMITTED WITHIN 10 BUSINESS DAYS OF BID OPENING DATE AND TIME: After bids are submitted and opened **THE APPARENT LOW BIDDER** shall complete and submit the following documents:

- **SEDB Form 1:** As noted on Section 3-10, Form 1 must be completed by the low bidder to accurately detail the work to be performed by the Low Bidder and by sub-consultants and all other entities participating in the project in order to assure compliance with the SEDB Goal.
- **SEDB Form 1A:** As noted in Section 3-10 must be completed by each sub-contractor completely and accurately to confirm their certification status and their proposed work.
- In the event that the low bidder cannot completely meet or exceed the advertised SEDB goal, then the low bidder must complete and submit SEDB Form 2 to document their best efforts made in their attempt to achieve that goal. All Forms, 1, 1A, 2, and attachments will be submitted to the City-Parish purchasing office for review to confirm compliance with SEDBE PROGRAM requirements.
- **Debarment and Suspension:** (Form DB: CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS). A contractor shall not be allowed to bid on any work if he is presently debarred, suspended, proposed for debarment, or voluntarily excluded from transactions by any Federal department or agency. Additional information is provided in the instructions that accompany the Form DB.

2-9 EXAMINATION OF PLANS, SPECIFICATIONS AND WORK SITE: This subsection is amended as noted to revise subsection 2-9.1 and replace as follows:

2-9.1 Interpretation of Documents: A prospective bidder in doubt as to the meaning of any part of the plans, specifications, or other proposed contract documents shall submit to the engineer a written request for an interpretation thereof at least 7 working days prior to the opening of bids. If during examination or review of the bid documents, project plans and specifications the bidder becomes aware of any error, omission, ambiguity or deficiency of any kind that may have a significant impact on the bid or the performance of the project the bidder shall provide written notice to the engineer within 24 hours prior to the bid. By submitting a bid, without noticing the engineer, the bidder warrants that they know of no such error, omission, or deficiency.

2-10 QUANTITIES AND UNIT PRICES

2-10.2 CHANGES IN ESTIMATED QUANTITIES: This subsection is amended as follows:

Scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as herein provided, without invalidating the prices bid except as follows:

When changes in the quantity of an item result in an increase of more than 25% of the original contract quantity, the City-Parish reserves the right to make payment for the additional quantity in excess of the 25% increase at a negotiated unit price or force account procedures in accordance with Subsection 10-4.

2-10.4 UNIT PRICES OR LUMP SUM PAY ITEMS: This sub-section of the Standard Specifications is deleted and replaced by the following:

Work and materials, equipment and equipment rental will be paid for in accordance with the unit prices or lump sum reference pay items in the Contract Documents. If no reference pay item is provided for an item of work, material or equipment required under the Contract Documents, it will be considered as having been included in the prices bid for the pay items in the Contract Documents. The Contractor shall perform all work required in the Contract Documents and accept payment pursuant to the Unit Price Bid Form as full and final compensation for all work performed under the contract including all incidental, overhead and subsidiary costs and work not measured for payment as described under the individual reference pay items listed in the Unit Price Bid Form.

The Contractor will be required to provide a breakdown of lump sum items after award of contract to be used for monthly payments purposes.

SECTION 3 CONTRACT AWARD AND EXECUTION OF CONTRACT

3-1 CONSIDERATION OF PROPOSALS: This subsection is amended to include the following:

The established threshold for bids is 110% of the engineer's estimate of probable construction cost (preconstruction estimate). Any bids in excess of 110% may be rejected per Louisiana Revised Statute 38:2214.B.(2).

Subsection 3-7 of the Standard Specifications is amended as follows, and Subsection 3-10 is added.

3-7 PERFORMANCE AND PAYMENT BOND: All reference to countersigning bonds shall be deleted.

3-10 SOCIALLY AND ECONONOMICALLY DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

The City of Baton Rouge and Parish of East Baton Rouge's Socially and Economically Disadvantaged Business Enterprise Program ("the Program") is made part of this contract and incorporated hereto as if copied in extensor. For these services, the EBR Parish Purchasing office has directed a review of the scope of work and has established a minimum SEDB goal of 10% of the contract amount.

Bidders, Respondents, and Proposers must comply with the Program. Copies of these documents are available upon request from City of Baton Rouge and Parish of East Baton Rouge ("City-Parish") Purchasing Division, 222 St. Louis Street, 8th Floor, Room 826, Baton Rouge, LA 70802. For questions or clarification about the Program, please contact the SEDBE Liaison Officer at the Purchasing Division, at (225) 389-3259.

PART I – POLICY/ COMPLIANCE

(A) The City-Parish strongly encourages the acquisition of goods and services from and direct participation of Socially and Economically Disadvantaged Business Enterprise ("SEDBE"). The term Socially and Economically Disadvantaged Business ("SEDB") shall have the meaning set forth in the City-Parish's Socially and Economically Disadvantaged Business Enterprise Certification Program.

The Program is a race and gender-neutral program intended to provide additional contracting and procurement opportunities for certified small, disadvantaged, woman-owned, minority-owned, veteran-owned, and service-disabled veteran-owned business enterprises by encouraging contractors who receive City-Parish contracts to use good-faith efforts to utilize such certified entities in the performance of those contracts. The City-Parish desires to achieve, to the greatest extent possible, commercially meaningful and useful participation by SEDBs. By providing equitable opportunities for SEDBs, the City-Parish derives multiple benefits, including contributing to the economic vitality of our communities and ensuring a broader selection of competitively priced goods and services.

Bidders should present a responsible plan that provides for participation of qualified SEDBs. Participation shall be counted toward meeting the contract goals only by business entities certified under the City-Parish's Socially and Economically Disadvantaged Business Enterprise Certification Program. The direct participation goal can be achieved through direct ownership, joint venture participation, owner/operator agreements, or subcontract agreements for participation.

If a Bidder does not meet the full SEDB goal, then written documentation must be provided showing their good faith efforts to secure SEDB participation, the unavailability of potential SEDB firms, and provide justification as to why such goals cannot be met that is found to be acceptable to the SEDBE Liaison Officer.

(B) **FAILURE TO COMPLY WITH SEDB REQUIREMENTS:** All City-Parish contract performers (Prime Contractors, Subcontractors, etc.) are hereby notified that failure to carry out the SEDB obligation, as set forth, shall constitute a breach of contract. The breach of contract will be reviewed by City-Parish which may result in termination of the contract or other remedies deemed appropriate for the given situation.

(C) **SUBCONTRACTS:** All Prime Contractors, and Subcontractors, hereby shall include the following clauses in all contracts that offer further subcontracting opportunities.

The Contractor 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 City-Parish's Socially and Economically Disadvantaged Business Enterprise Program in the award and administration of City-Parish 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 recipient (City-Parish) deems appropriate.

(D) **AWARD OF SEDB SUBCONTRACTS:** The Contractor shall, no later than three (3) business days from the award of a contract, execute formal contracts or purchase orders with the SEDB(s) included on Form 1.

(E) **COUNTING SEDB PARTICIPATION:** City-Parish will count SEDB participation toward overall and contract goals as provided in City-Parish's Socially and Economically Disadvantaged Business Enterprise Program ("the Program"). City-Parish will only count SEDB participation by those SEDBs performing commercially useful functions. City-Parish Purchasing Division will not count the participation of SEDB Subcontractors toward a Contractor's final compliance with its SEDB obligations on a contract until the amount being counted has actually been paid to the SEDB.

The Contractor may count its entire expenditure to SEDB manufacturers (i.e., a supplier that produces goods from raw materials or substantially alters them before resale). The Contractor may count sixty percent (60%) of its expenditures to SEDB suppliers that are not manufacturers, provided that the SEDB supplier performs a commercially useful function in the supply process.

A Contractor shall not count the value of any payment made to an SEDB for work that was further subcontracted out by the SEDB to a non-SEDB.

PART II – PROCEDURE TO DETERMINE QUALIFICATION STATEMENT OR PROPOSAL COMPLIANCE

(A) **ELIGIBILITY OF SEDBs:** To be counted toward the participation Goals pursuant to the Program, a SEDB must be certified by the City-Parish at the time a bid or proposal is submitted. The fact that an SEDB is certified does not necessarily mean that it has the qualifications and experience for the type of work required by any particular Contract. The responsibility for determining whether an SEDB has the qualifications and experience for the type of work required by the Contract rests with the Contractor. To be deemed a SEDB certified entity, firms must complete the City-Parish's certification process. Only SEDB certified firms under the City-Parish at the time of the Bid opening will count toward the SEDB goal.

(B) **REPORTING FORMS 1, 1A, AND 2:** The following fully completed forms shall be furnished to the City-Parish by the apparent lowest bidder within 10 days after the bid opening. The City-Parish requests that the apparent second lowest bidder also submit the fully completed forms. Failure to complete the forms properly and completely will constitute the bid as being deemed non-responsive. The forms shall have all blank spaces filled in completely and correctly. These forms are as follows:

FORM 1 – SEDB RESPONSIVENESS FORM (copy attached): It is the obligation of the Respondent to make good faith efforts to meet the SEDB goal. Respondents can demonstrate their good faith efforts either by meeting the contract goal or by documenting good faith efforts taken to obtain SEDB participation. The Form 1 shall accurately detail the work proposed by the Respondents to be performed by Respondent and all entities participating in the project and, if it is a bid or proposal, the percent value of that work. If a Respondent is unable to fully meet the SEDB goal of this contract, the Respondent shall submit a Form 2 form and all documentation demonstrating the good faith efforts made to comply with the SEDB requirements.

FORM 1A - REQUIRED PARTICIPATION QUESTIONNAIRE FORM (copy attached): Form 1A shall accurately detail the work to be performed by each and every firm participating in the project. A Form 1A must be submitted for the Contractor and for each Subcontractor included on Form 1. In addition, each participating SEDB firm must submit a current letter of SEDB certification along with its Form 1A.

FORM 2 - Good Faith Efforts (copy attached): Form 2 is only required when the prime firm is unable to fully meet the SEDB contract goal. Form 2 shall provide documentation of good faith efforts made to obtain SEDB participation. Form 2 must be accompanied by supporting documentations such as, but not be limited to, phone logs, facsimiles, and e-mail correspondence with potential SEDB firms. Further explanation of good faith efforts may be found in the Instructions for Form 2. It is up to City-Parish or its Designee to make a fair and reasonable judgment whether a Respondent made adequate good faith efforts to achieve the contract goal.

FORM 3 - Monthly Utilization/Participation SEDB Report (copy attached): Form 3 shall be submitted to the Field Engineer along with monthly payment requests and shall accurately represent the amount paid to SEDB Subcontractors during that invoice period. This form must be submitted with every monthly invoice regardless of the amount of payment or lack of payment. The form shall be signed by the Contractor and the SEDB Subcontractor(s) if payment has been made during that month. SEDB participations will not be counted toward the Contractor's commitment until payment has been rendered to the SEDB. Failure to submit the required reports may result in withholding of payment or partial payments to the Contractor until the required forms are submitted.

REQUEST FOR REMOVAL AND/OR SUBSTITUTION OF SEDB SUBCONTRACTOR (copy attached): The Contractor shall utilize the specific SEDBs listed on their Form 1 to perform the work and supply the materials for work listed unless the Contractor obtains the City-Parish's written consent via City-Parish Purchasing Division's Request for Removal and/or Substitution of SEDB Subcontractor form. In addition to post-award terminations, this provision applies to pre-award deletions of or substitutions for SEDB firms put forward by offers in negotiated procurements. Any and all requests for authorization to remove and/or substitute an SEDB Subcontractor must be made in writing by the Contractor, or Subcontractor seeking removal or substitution. This includes, but is not limited to, instances in which a Contractor wants to perform work originally designated for an SEDB subcontractor with its

own forces or those of an affiliate, a non-SEDB firm, or with another SEDB firm. This request shall document the scope and value of work to be affected. The Contractor making the request must include the name(s) of replacement SEDB and non-SEDB Subcontractor(s).

Before transmitting to the City-Parish its request to terminate and/or substitute a SEDB Subcontractor, the Contractor must give notice in writing to the SEDB Subcontractor, with a copy to the City-Parish Purchasing Division, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor must give the SEDB five days to respond to the Contractor's notice and advise the City-Parish Purchasing Division and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the City-Parish Purchasing Division should not approve the Contractor's action.

If required in a particular case as a matter of public necessity (e.g., safety), the City-Parish Purchasing Division may provide a response period shorter than five days. When an SEDB subcontractor is terminated via the City-Parish Purchasing Division written approval or fails to complete its work on the contract for any reason, the City-Parish Purchasing Division requires the Contractor to make Good Faith Efforts to find another SEDB subcontractor to substitute for the original SEDB. These Good Faith Efforts shall be directed at finding another SEDB to perform at least the same amount of work under the contract as the SEDB that was terminated, to the extent needed to meet the contract goal established for the procurement.

The Good Faith Efforts shall be documented by the Contractor. If the City-Parish Purchasing Division requests documentation regarding Good Faith Efforts on substitutions, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary, at the request of the Contractor, and the City-Parish Purchasing Division shall provide a written determination to the contractor stating whether or not Good Faith Efforts have been demonstrated. The Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed SEDB unless the City-Parish Purchasing Division written consent has been provided via the City-Parish Purchasing Division's Request for Removal and/or Substitution of SEDB Subcontractor. Failure by the Contractor to carry out these requirements is a material breach of the contract and may result in the termination of the contract.

PART III – SEDB FORMS AND PROCEDURES

CITY OF BATON ROUGE AND PARISH OF EAST BATON ROUGE

Form 1

SEDB Responsiveness Form INSTRUCTIONS

Column A. Indicate the firm's role: Contractor, subcontractor, manufacturer, regular dealer/supplier, or broker/agent. Note that only 60% of the value of regular dealer/supplier commissions and fees can be counted toward Socially and Economically Disadvantaged Business Enterprise participation. All firms participating SEDB and non-SEDB, (prime and subs) must be included on the form.

Column B. Provide the name and address of the firm.

Column C. Provide the principal contact person and phone number of the firm.

Column D. Describe the work, goods, and/or services to be provided by the firm.

Column E. Indicate the percent value of the amount of work assigned to the firm. Total percent value of work should equal 100% to account for all work being performed on the contract.

Column F. Indicate whether firm is an SEDB or non-SEDB. SEDB-certified means to be certified by the EBRP Socially and Economically Disadvantaged Business Enterprise Program.

Form 1
SEDB Responsiveness Form

EBRP Project Title: _____ Project No: _____

SEDB Contract Goal: _____ %

A	B	C	D	E	F
FIRM ROLE <i>(Prime, sub-contractor, manufacturer, supplier, etc)</i>	FIRM NAME AND ADDRESS	PRINCIPAL CONTACT NAME AND PHONE NUMBER	WORK TO BE SUBCONTRACTED / GOODS / SERVICE TO BE PURCHASED	%VALUE OF WORK / PURCHASES*	SEDB OR NON-SEDB
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	

TOTAL VALUE OF PARTICIPATION FROM CONTINUATION PAGES:

*Supplier/Manufacturer/Purchase/Dealer work is counted at 60% participation toward SEDB goal.

If total SEDB participation is less than the goal, refer to the Good Faith Efforts section of the instruction and attach a Form 2 and all other necessary documentation. Firms must be SEDB certified with authorized agent of the City of Baton Rouge and Parish of East Baton Rouge Purchasing Division to count towards the goal.

	%	%
Enter Total Bid Amount	Total Must Equal 100%	Total SEDB Participation
\$	%	%

The undersigned prime firm will enter into a formal written agreement with the subcontractors identified herein for work and/or goods and services as shown in this schedule, conditioned upon the execution of a contract with the City of Baton Rouge and Parish of East Baton Rouge. The undersigned agrees to be contractually bound to maintain the level of SEDB participation set forth above. Failure to comply with this agreement constitutes breach of contract.

Signature: _____ Date: _____

Printed Name: _____ Title: _____

Form 1
SEDB Responsiveness Form
Continuation Page 1

A	B	C	D	E	F
FIRM ROLE <i>(Prime, sub-contractor, manufacturer, supplier, etc)</i>	FIRM NAME AND ADDRESS	PRINCIPAL CONTACT NAME AND PHONE NUMBER	WORK TO BE SUBCONTRACTED / GOODS / SERVICE TO BE PURCHASED	%VALUE OF WORK / PURCHASES*	SEDB OR NON-SEDB
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	

*Supplier/Manufacturer/Purchase/Dealer work is counted at 60% participation toward SEDB goal.

TOTAL VALUE OF PARTICIPATION FROM CONTINUATION PAGE 1:

Total % Value of Work Purchases	Total SEDB Participation
%	%

Form 1
SEDB Responsiveness Form
Continuation Page 2

A	B	C	D	E	F
FIRM ROLE <i>(Prime, sub-contractor, manufacturer, supplier, etc)</i>	FIRM NAME AND ADDRESS	PRINCIPAL CONTACT NAME AND PHONE NUMBER	WORK TO BE SUBCONTRACTED / GOODS / SERVICE TO BE PURCHASED	%VALUE OF WORK / PURCHASES*	SEDB OR NON-SEDB
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	
				%	

*Supplier/Manufacturer/Purchase/Dealer work is counted at 60% participation toward SEDB goal.

TOTAL VALUE OF PARTICIPATION FROM CONTINUATION PAGE 2:

Total % Value of Work Purchases	Total SEDB Participation
%	%

Form 1A
Required Participation Questionnaire

INSTRUCTIONS: A fully completed Form 1A "Required Participation Questionnaire" must be submitted for the prime firm, each subcontractor, and any other tier or subcontractor, as a condition of responsiveness. This information is to be collected and documented for all City of Baton Rouge and Parish of East Baton Rouge. All items requested on the form are required, if an item is not applicable, respondents shall enter N/A. Each prime firm participating as a joint venture shall complete a separate form and indicate (Item 9) that the response is a joint venture.

1. Project name, project number and date of submittal:	2. Official name of firm: Indicate if prime or subcontractor	3. Address of office to perform work:
4. Name of parent company, if any:	5. Location of headquarters (city):	6. Age of firm:
7. Name, title, and telephone number of principal contact:	8. Indicate Any Special Status: ☐ small business ☐ SBA certified ☐ Women-owned business ☐ LAUCP DBE certified ☐ Minority-owned business ☐ SEDB certified with CITY-PARISH *A firm participating as a SEDB must be certified by the City of Baton Rouge and Parish of East Baton Rouge SEDBE Program by the date of submittal. Current letter of certification shall be attached.	
9. Is this submittal a joint venture (JV)? ☐ Yes ☐ No	10. Summary of firm's annual revenues (please insert index number from below): Last Year: _____ 2 Years ago: _____ 3 Years ago: _____	
If so, has the JV worked together before? ☐ Yes ☐ No	Ranges of annual revenues received: <u>Index:</u> 1. less than \$500,000 4. \$2,000,000-\$4,000,000 2. \$500,000-\$1,000,000 5. \$5,000,000-\$6,000,000 3. \$1,000,000 - \$2,000,000 6. \$6,000,000 or greater	

I do solemnly declare and affirm under the penalties of perjury that the contents of this document are true and correct, and that I am authorized on behalf of this firm to make this affidavit.

Signature: _____ Date: _____

Printed Name: _____ Title: _____

CITY OF BATON ROUGE AND PARISH OF EAST BATON ROUGE

Form 2

Good Faith Efforts

INSTRUCTIONS:

If required, attach a completed Form 2 and supporting documents to establish that Good Faith Efforts were undertaken to secure SEDB participation:

The following is a list of types of actions which you should consider as part of the bidder's good faith efforts to obtain SEDB participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- A. Conducting market research to identify small business contractors and suppliers and soliciting through all reasonable and available means the interest of all certified SEDB s that have the capability to perform the work of the contract. This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to all SEDBs listed in the City-Parish's directory of transportation firms that specialize in the areas of work desired (as noted in the SEDB directory) and which are located in the area or surrounding areas of the project. The bidder should solicit this interest as early in the acquisition process as practicable to allow the SEDBs to respond to the solicitation and submit a timely offer for the subcontract. The bidder should determine with certainty if the SEDBs are interested by taking appropriate steps to follow up initial solicitations.
- B. Selecting portions of the work to be performed by SEDBs in order to increase the likelihood that the SEDB goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate SEDB participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates SEDB participation.
- C. Providing interested SEDBs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.
- D. Negotiating in good faith with interested SEDBs. It is the bidder's responsibility to make a portion of the work available to SEDB subcontractors and suppliers and to select those portions of the work or material needs consistent with the available SEDB subcontractors and suppliers, so as to facilitate SEDB participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of SEDBs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional Agreements could not be reached for SEDBs to perform the work.
- E. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including SEDB subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using SEDBs is not in itself sufficient reason for a bidder's failure to meet the contract SEDB goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from SEDBs if the price difference is excessive or unreasonable.
- F. Not rejecting SEDBs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or

associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal. Another practice considered an insufficient good faith effort is the rejection of the SEDB because its quotation for the work was not the lowest received. However, nothing in this paragraph shall be construed to require the bidder or prime contractor to accept unreasonable quotes in order to satisfy contract goals.

- G. Contractor's inability to find a replacement SEDB at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original SEDB. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement SEDB, and it is not a sound basis for rejecting a prospective replacement SEDB's reasonable quote.
- H. Making efforts to assist interested SEDBs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
- I. Making efforts to assist interested SEDBs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- J. Effectively using the services of available minority/women/veteran community organizations; minority/women/veteran contractors' groups; local, State, and Federal minority/women/veteran business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of SEDBs.

Form 2
Good Faith Efforts

If the Respondent cannot fully meet the SEDB goal of the Contract, the Respondent shall complete Form 2 and attach documentation demonstrating the Respondent's good faith efforts. It is up to City of Baton Rouge and Parish of East Baton Rouge Purchasing Division to make a fair and reasonable judgment whether a Respondent that did not meet the contract goal made adequate good faith efforts.

I, _____ certify that on the date (s) below I invited the following proposed SEDB subcontractor (s) to respond or propose work items to be performed on:

PROJECT NAME: _____

PROJECT NO: _____

Date of Request	Name and Address of SEDB Firm	Transmittal Type	Work Items Sought	Describe Response and/or Follow-up

I do solemnly declare and affirm under the penalties of perjury that the contents of this document are true and correct, and that I am authorized on behalf of this firm to make this affidavit.

Signature: _____ Date: _____

Printed Name: _____ Title: _____

☐ Supporting documentation of Good Faith Efforts attached (required)

Form 3
City of Baton Rouge and Parish of East Baton Rouge
Contractor or Consultant Monthly SEDBE Report

INSTRUCTIONS: This report covers the previous estimate period and shall be submitted to the Project Manager Representative or Project Inspector with the current month's pay estimate. The prime firm shall prepare one form for each SEDB firm participating in the project. Questions should be directed to the City of Baton Rouge and Parish of East Baton Rouge Purchasing Division through assigned project manager. **Signatures from SEDB firms who received payment during the report period are required.** No signature is required if no payments were made to the SEDB firm during the reporting period. **If actual SEDB item of work is different than that approved at the time of award, the Substitution Form must be completed (if you have not already done so).**

PRIME CONTRACTOR INFORMATION:

Prime Firm Name		Phone Number	
Project Name			
City Parish Project No.		State Project No.	
Project Start Date		Est. Project Completion Date	
Original Contract Amount	Change Orders (count)	Current Contract Value	SEDB Commitment
\$		\$	%
Invoice Number	Report Period Begin Date	Report Period End Date	

SUBCONTRACTOR INFORMATION:

SEDB Subcontractor		
SEDB Contact:		SEDB Phone Number
Original Subcontract Amount	Original Commitment to Firm	Current Subcontract Value
\$	%	\$
Amount Paid to Sub This Period	Amount Paid to Sub to Date	
\$	\$	
Scheduled Date of Sub Services (or state ongoing)	Estimated Date of Completion of Sub Services	
Item Number/Description of Work Performed by Sub		

By signing below, I attest that the information provided is complete and accurate, and true to the best of my knowledge.

Prime Firm's Authorized Signature: _____ Date: _____

Print Name: _____ Date: _____

Subcontractor's Authorized Signature: _____ Date: _____

Print Name: _____ Date: _____

I certify that the contracting records and on-site performance of the SEDB has been monitored. If actual SEDB item of work is different than that approved at the time of award, the Substitution Form must be completed.

Project Manager Representative/Inspector's Signature: _____ Date: _____

Print Name: _____ Title: _____

EBRP Project Manager or SEDBE Liaison Officer (SEDBELO) has reviewed this form.

SEDBELO's or Authorized Owner's Representative's Signature _____ Date: _____

**City of Baton Rouge and Parish of East Baton Rouge
Guidance for Removal and/or Substitution of a SEDB Firm**

Prime contractor must receive prior written consent from the **City-Parish** before terminating a SEDB subcontractor listed in response to the City-Parish Purchasing Division solicitation (or an approved substitute SEDB firm). This includes, but is not limited to, instances in which the prime contractor seeks to perform work originally designated for a SEDB subcontractor with its own forces or those of an affiliate, a non-SEDB firm, or with another SEDB firm. All requests must be accompanied by documentation of good faith efforts made to maintain the SEDB commitment percentage on the total contract value.

The City-Parish Purchasing-SEDBE Division may provide written consent only if it agrees that the prime contractor has Good Cause to terminate the SEDB firm. Good Cause includes the following circumstances:

1. The listed SEDB subcontractor fails or refuses to execute a written contract;
2. The listed SEDB subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the SEDB subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
3. The listed SEDB subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements.
4. The listed SEDB subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
5. The listed SEDB subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings or applicable state law;
6. The City-Parish Purchasing Division has determined that the listed SEDB subcontractor is not a responsible contractor;
7. The listed SEDB subcontractor voluntarily withdraws from the project and provides to the City of Baton Rouge and Parish of East Baton Rouge Purchasing Division written notice of its withdrawal;
8. The listed SEDB is ineligible to receive SEDB credit for the type of work required;
9. An SEDB owner dies or becomes disabled with the result that the listed SEDB contractor is unable to complete its work on the contract;
10. Other documented good cause that the City-Parish Purchasing Division determines compels the termination of the SEDB subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a SEDB it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the SEDB subcontractor was engaged or so that the prime contractor can substitute another SEDB or non-SEDB subcontractor after contract award.
11. Before transmitting to the City-Parish Purchasing Division its request to terminate and/or substitute an SEDB subcontractor, the prime contractor must give notice in writing to the SEDB subcontractor, with a copy to the City-Parish Purchasing Division, of its intent to request to terminate and/or substitute, and the reason for the request.
12. The prime contractor must give the SEDB five days to respond to the prime contractor's notice and advise the City-Parish Purchasing Division and the contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the City-Parish Purchasing Division should not approve the prime contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the City-Parish Purchasing Division may provide a response period shorter than five days.
13. In addition to post-award terminations, the provisions of this section apply to pre-award deletions of or substitutions for SEDB firms put forward by offerors in negotiated procurements.

14. After Good Cause is demonstrated by the prime contractor and approved by the Purchasing Division, the prime contractor must make good faith efforts to replace an SEDB that is terminated with another certified SEDB, to the extent needed to meet the contract goal.
15. In this situation, we will require the prime contractor to provide copies of new or amended subcontracts, or documentation of good faith efforts. If the prime contractor fails or refuses to comply in the time the City-Parish Purchasing-SEDBE Division specified, our contracting office will issue an order stopping all or part of payment/work until satisfactory action has been taken. If the prime contractor still fails to comply, the contracting officer may issue a termination for default proceeding.

City of Baton Rouge and Parish of East Baton Rouge
Request for Removal and/or Substitution of a SEDB Firm

Project Name		
City Parish Project No.	State Project No.	SEDB Commitment
Prime Firm Name		Phone Number
Original Contract Amount	Change Orders (Count)	Current Contract Value
Subcontractor to be removed		
Proposed substitute subcontractor		
Value of current subcontract		Value of proposed subcontract

Reason for removal or substitution (state in detail, attach supporting documentation if necessary):



Describe the good faith efforts made/ in progress to maintain SEDB participation in order to continue to meet the SEDBE commitment:

Prime Firm's Authorized Signature: _____ Date: _____

Type or Print Name: _____ Title: _____

SECTION 5 CONTROL OF WORK

5-7 COORDINATION OF PLANS AND SPECIFICATIONS: This sub-section of the Standard Specifications is deleted and replaced by the following:

The plans, specifications and other Contract Documents will govern the work to be done. Anything mentioned in the specifications and not shown on the plans, or shown on the plans and not mentioned in the specifications, shall be of like effect as though shown or mentioned in both.

Specifications and plans referred to in the Contract Documents shall be considered as being included in the document in which such reference is made. When a particular specification or standard is referred to, such reference shall be to the specification or standard, including officially adopted revisions and amendments thereto, which is in force at the time of advertising for bids.

In case of conflict, the order of precedence of the following documents in controlling the work shall be:

1. Permit from outside agencies required by law
2. Issued addendums
3. Special provisions
4. Plans
5. Supplemental specifications (only those which are bound to these documents)
6. Standard specifications
7. Standard plans

Calculated dimensions will govern over scaled dimensions.

Change orders and approved revisions to plans and specifications will take precedence over Contract Documents listed above. The Contractor shall take no advantage of any error or omission in the plans or Project specifications. If the Contractor discovers such an error or omission, he shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as deemed necessary to fulfill the intent of the plans and Project specifications.

5-15 FIELD RECORD DRAWINGS: This section of the Standard Specifications is amended by adding the following subsection:

The Contractor shall provide a set of Field Record Drawings for all Work including subsurface infrastructure such as sanitary sewer and storm drainage systems (both alignment and profile) to the Engineer. Drawings should be developed from actual field readings. Raw data should be available for submission at any time upon request.

For sanitary sewer work specifically, Field Record Drawings having survey data shall be stamped by a Professional Land Surveyor registered in the State of Louisiana. All fittings, valves, manholes, tie-ins or taps, etc. shall be located by GPS (+/- 1 meter accuracy) based on the La. State Plane Coordinate System (south) as shown on Contract Documents, and shall be provided on the Field Record Drawings.

Contractor shall legibly mark Field Record Drawings to record actual changes made during construction, including, but not limited to:

- a. Date of change.
- b. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.

- c. Horizontal and vertical locations of existing and new underground facilities and appurtenances, and other underground structures, equipment, or Work. Reference to at least two measurements to permanent surface improvements.
- d. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
- e. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
- f. Changes made by addenda and field orders, Work Change Directive, Change Order, Requests for Information, and Engineer's written interpretation and clarification using consistent symbols for each and showing appropriate document reference number.

SECTION 6 CONTROL OF MATERIALS

6-8 STORAGE OF MATERIALS AND EQUIPMENT: Delete this subsection and replace with the following:

Portions of the right-of-way may be used for storage and for placing the Contractor's plant and equipment only with prior approval of the Engineer. Materials and equipment shall be stored so as to insure preservation of their fitness for the work, and in a manner that leaves the material and equipment accessible to inspectors. Storage shall not interfere with the positive drainage of the area, the prosecution of the work or with public travel and convenience. Whether in public right-of-way or Contractor's own storage yard, Contractor shall store materials in a planned and orderly manner that does not endanger employee or public safety, negatively impact a floodplain/floodway, nor create a public nuisance or inconvenience.

Construction materials and equipment may not be stored or parked in streets, roads, or highways after unloading except where such street or road is provided with an acceptable detour approved by the Engineer. All such materials or equipment not installed or used in the construction shall be stored elsewhere by the Contractor at his or her expense.

Excavated or imported material, except that which is to be used as immediate backfill in the adjacent trench, may not be stored in public streets, roads, or highways unless otherwise authorized by the Engineer. After placing backfill, all excess excavated or imported material shall be removed from the site immediately after backfilling operations are completed at the site.

6-8.1 Contractor Storage Yards: Unless specified otherwise, the Contractor shall be responsible for providing and maintaining necessary material storage facilities, utilities, field offices, temporary roads, fences, security, etc. for prosecuting the Work. Property used for storage of the materials and equipment should be appropriately zoned. It is the responsibility of the Contractor to keep informed of and comply with all Federal and State laws, and local bylaws, ordinances and regulations as it relates to use and occupancy of the property utilized as a construction storage or staging yard, whether temporary or permanent. If the Contractor desires to use property that is not appropriately zoned for storage of materials and equipment, the Contractor must obtain permission to do so from DPW. DPW may grant the request after due consideration of the character of the surrounding property, availability of alternative locations, accessibility to adjacent roadways, and the potential nuisance and/or flood hazard that may be caused by storage on the proposed property. In granting such permission DPW may impose limits on the use of the property including, but not limited to, duration, hours of operation, access, and the nature of materials stored on the property.

SECTION 7 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

7-1 LAWS TO BE OBSERVED: This sub-section of the Standard Specifications is amended to include:

The Contractor is responsible for the coordination with local law enforcement for the escort of delivery trucks within the limits of the Parish of East Baton Rouge for the delivery of oversize loads (example: precast concrete piles or

precast-prestressed girders) to the construction site. The contractor shall contact the local law enforcement captain a minimum of forty-eight (48) hours in advance to obtain law enforcement for escorts for the delivery of materials. Fees for police escorts will be at no direct pay.

7-2 INSURANCE: This sub-section of the Standard Specifications is deleted and replaced by the following:

Surety Requirements: Performance, Payment and Other Bonds must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury.

Certification Regarding Unpaid Workers Compensation Insurance: Prior to award of contract the successful proposer shall provide an affidavit relating to unpaid workers compensation insurance (LA R.S. 23:1726B) to the engineer. The contractor shall use the Attestations Affidavit form on the following page to submit said affidavit to the engineer.

Contractor shall have and maintain, until final acceptance of the Work by the Owner and Council, the minimum insurance described herein with an insurance company authorized to do business in the State of Louisiana that has an industry rating of at least A-, Class VI, according to Best's Key Rating Guide. Contractor shall deliver to Owner certificates of insurance showing such insurance is in effect prior to execution of the Contract, which certificates shall incorporate a provision that no cancellation or change in such insurance shall be effected without at least thirty (30) days prior written notice being given to the Owner and Engineer. These requirements shall not be construed to limit any obligations of indemnity and/or defense of the Contractor or Surety, but constitutes minimum insurance requirements which must be provided and maintained.

- A. Standard Workmen's Compensation - Full statutory liability under Louisiana law with Employer's Liability Coverage.
- B. Commercial General Liability coverage (ISO form CG 00 01) when the Contract amount is as follows:

- 1. General Aggregate:

<u>CONTRACT AMOUNT</u>	<u>MINIMUM LIMITS OF INSURANCE</u>
Less than 1,000,000	\$1,000,000
\$1,000,000 to \$5,000,000	\$2,000,000
\$5,000,000 to \$10,000,000	\$3,000,000
Greater than \$10,000,000	\$4,000,000

- 2. Products-Completed Operations aggregate:

<u>CONTRACT AMOUNT</u>	<u>MINIMUM LIMITS OF INSURANCE</u>
Less than 1,000,000	\$1,000,000
\$1,000,000 to \$5,000,000	\$2,000,000
\$5,000,000 to \$10,000,000	\$3,000,000
Greater than \$10,000,000	\$4,000,000

- 3. Personal and Advertising Injury:

<u>CONTRACT AMOUNT</u>	<u>MINIMUM LIMITS OF INSURANCE</u>
Less than \$5,000,000	\$1,000,000
Greater than \$5,000,000	\$2,000,000

- 4. Each Occurrence:

CONTRACT AMOUNT

Less than \$5,000,000
Greater than \$5,000,000

MINIMUM LIMITS OF INSURANCE

\$1,000,000
\$2,000,000

The above Commercial General Liability coverage shall not be narrowed by endorsement without the express written agreement of Owner.

- C. Business Auto Policy - Combined single limit \$1,000,000
- D. Umbrella Liability: Lower primary limits will be accepted if Umbrella Coverage is provided with limits of at least \$1,000,000 in excess of primary coverage shown on the certificate.
- E. The City of Baton Rouge, Parish of East Baton Rouge and the Department of Public Works shall be named on all liability policies described above as "additional insured" as respects liability arising out of the Project; products and completed operations of the Contractor, as well as premises owned, occupied or used by the Contractor. The additional insured coverage shall contain no special limitations on the scope of protection afforded to any additional insured. It is understood that the business auto policy under "Who is an Insured" automatically provides liability coverage in favor of the Owner. Any failure of Contractor to comply with any reporting provision of any policy shall not affect coverage provided to an additional insured.
- F. Waiver of subrogation in favor of the City of Baton Rouge, Parish of East Baton Rouge, is required on Worker's Compensation insurance.
- G. The certificate holder shall be listed as follows:

City of Baton Rouge, Parish of East Baton Rouge
Attn: Purchasing Division
Post Office Box 1471
Baton Rouge, Louisiana 70821

- H. The insurance to be provided by Contractor shall not include any provision, exclusion or endorsement precluding coverage for claims between insured's and/or additional insured's.

7-4.1 Maintenance of Traffic: This sub-section of the Standard Specifications is amended to include:

Unless otherwise directed the Contractor shall:

1. All lane closures on City/Parish roads require a permit from the DTD. Contact Nikita Poche at roadclosure@brla.gov or 225-389-3246. Lane closures on LADOTD routes must follow LADOTD guidelines.
2. Maintain a minimum of one (1) lane of traffic in each direction of travel (except on one-way streets) on any street on which construction activity is taking place. On two (2) lane streets, traffic must be maintained using the appropriate traffic control devices and flagmen. If at any time traffic congestion is observed by the inspector, installation of markings shall cease until the congestion clears. Complete street closures are prohibited except for short periods (not to exceed 15 minutes at any one time) to maneuver equipment across an intersection approach.
3. No work that interferes with traffic shall be permitted during weekday peak traffic hours, unless authorized by the DTD in writing. Peak hours are defined as 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM Monday through Friday. Work on Saturday and Sunday will generally not be time limited except in areas immediately adjacent to any place of worship. In such cases, work will not take place during

the starting or ending of such worship services. Work hours on Saturday and Sunday may be authorized on an individual location basis by the DTD.

7-5.4 RIGHT-OF-WAY: This sub-section of the Standard Specifications is deleted and replaced as follows:

The available servitudes and rights-of-way for the construction of this improvement are those shown on the plans. Additional areas that may be required shall be obtained by the Contractor.

Unless otherwise shown on the plans or directed by the Project Engineer any improvements located within the construction limits may be temporarily removed for the execution of the work. Upon completion of the work, all items removed shall be reinstalled, and/or relocated, or restored to a condition equal to the condition that existed before the obstruction was removed.

7-7 PREVENTION OF SOIL EROSION AND WATER POLLUTION: The contractor, by signing this contract, certifies under penalty of law that he understands and will abide by the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) and the National Pollution Discharge Elimination System (NPDES) General Permit.

The Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) program requires discharges from construction sites be managed to prevent pollutants from entering waters of the United States in accordance with the Clean Water Act (33 U.S.C. §1342 (Sections 402(p) and 405 of Public Law 100-4)). Authority to issue storm water discharge permits for construction activities in the state of Louisiana has been delegated to the Louisiana Department of Environmental Quality (DEQ) by EPA. Currently, discharges are regulated through two General Permits: LAR100000 for construction activities that disturb greater than 5 acres and LAR200000 for construction activities that disturb between 1 and 5 acres.

The Contractor has the day-to-day operational control over the construction activities which occur at the site. Therefore, under the General Permit provisions, the Contractor is required to develop a SWPPP (Storm Water Pollution Prevention Plan) for the construction activities associated with the project. Additionally for construction activities that will disturb more than 5 acres, the Contractor is required to file a Notice of Intent (NOI) for the project with DEQ, and must maintain a copy of both the contractor's NOI and SWPPP at the jobsite. Contractor must submit copies of their SWPPP and NOI to the City-Parish Department of Public Works for informational purposes prior to initiation of construction activities at the site. The contractor shall complete and submit a (NOT) as operator to the DEQ after final stabilization of the site, in accordance with the terms of the permit.

The Contractor shall protect the Project and adjoining properties from soil erosion and siltation by effective and continuous erosion control methods. Areas of soil exposed by construction operations shall be kept to a minimum. The Storm Water Pollution Prevention Plan shall include Section 903 of the standard specifications along with the applicable supplemental specifications and special provisions, and Standard Plan 903-01 "Storm Water Pollution Prevention Plan Best Management Practices" and Standard Plan 903-02 "Temporary Erosion Control Installation Details".

SECTION 9 PROSECUTION AND PROGRESS OF WORK

9-1 SUBLETTING OF CONTRACT: This sub-section of the Standard Specifications is deleted and replaced by the following:

With written permission of the Director, the Contractor may sublet all items of work not designated in the Contract as "Specialty Items" and not more than 50% of the Contract amount. Items designated as specialty items may be subcontracted without written permission of the Director. The Contractor will not be allowed to sublet more than 50% of the material cost. No subcontractor shall sublet any portion of the authorized work without written permission of the Contractor and the Director.

No subcontract will relieve the Contractor of his responsibility under the Contract and Bonds. The Contractor will be as solely responsible to the Owner for any acts or omissions of all subcontractors and all persons employed by any subcontractor. All transactions of the Engineer will be with the Contractor. Subcontractors will be considered only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competency.

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless Owner from any claim of damage, cost expense or amount owed under any lien or claim of privilege, including, but not limited to, attorney fees, involving Contractor's subcontractors or suppliers.

Refer to Section 3-10 for additional conditions for Subletting to comply with Socially and Economically Disadvantaged Business provisions.

9-2 NOTICE TO PROCEED: This sub-section of the Standard Specifications is amended to include the following:

The public entity shall issue to the contractor a notice to proceed with the project or work order not later than thirty calendar days following the date of execution of the contract by both parties, whichever execution date is later. However, the public entity and the contractor, upon mutual written consent of both parties, may agree to extend the deadline to issue the notice to proceed.

9-3 PROGRESS SCHEDULE: This subsection of the Standard Specifications is deleted and replaced by the following:

The Contractor shall submit to the Project Engineer a computerized construction progress schedule giving a schedule of operations that provides for completion of work within the Contract Time. The accepted construction progress schedule will be used as the basis of establishing the controlling item of work and as a check on the progress of the work. The construction progress schedule shall show only one controlling item of work for each day.

The Contractor shall provide all construction schedules in accordance with the requirements of the Contract Documents, including preparation and submittal of Baseline Schedule, maintenance of schedule during execution of the work, preparation and submittal of monthly schedule updates, and if requested by the Engineer, recovery schedules.

The purpose of schedules and related reports is to:

- a. Ensure adequate planning and timely execution of the Work;
- b. Establish Baseline Schedule to which subsequent monthly schedule updates shall be compared to determine overall progress and performance towards satisfactory completion of the Contract;
- c. Identify interdependencies and facilitate coordination of Contractor's work with others as needed;
- d. Assist Engineer in monitoring progress;
- e. Evaluate proposed changes to the Contract and subsequent impacts to schedule;
- f. Effectively determine impacts of time extensions
- g. Identify and mitigate risks early in Project's lifecycle and during each period of progress.

9-3.1 Schedule Submittal and Acceptance: A minimum of three (3) days before the pre-construction meeting is held, the Contractor shall submit to the Engineer for review the proposed schedule. Unless otherwise noted, the schedule will become the basis for the Project timeline form which all deviations will be considered. Acceptance of the schedule by the Engineer means only that the proposed schedule has been reviewed for general conformity with the scope, logic and purpose or required sequence of construction. Acceptance by the Engineer means only that the Department agrees that if the Contractor can and does follow the schedule, the Project will apparently be completed within the allotted Contract Time. Under no circumstances shall acceptance of the schedule be construed to relieve the Contractor from his responsibility to complete the Project within the allotted Contract Time or to dictate to the Contractor how to perform his work or what amount of manpower and equipment to use in order for

him to complete the Project.

9-3.2 Availability of Schedule: The Contractor shall have ten (10) copies of the schedule available at the preconstruction meeting.

9-3.3 Progress Update: The Contractor must update the progress on the schedule at a minimum of monthly. If so required by the Engineer, either due to the complexity of the Project or if the Contractor has fallen behind on the progress of the Work as indicated on the schedule, the Engineer can require that the progress update schedule be submitted more frequently than monthly. The Engineer and the Contractor will decide when these updates are due.

9-3.4 Schedule Revisions: If the Contractor's operations are affected by changes in the plans or amount of work, or if the Contractor has failed to comply with the original schedule, or if the logic or sequence of construction has been changed, the Contractor shall submit a revised construction progress schedule. This revised schedule shall show how the Contractor proposes to prosecute the balance of the Work. The Contractor shall submit the revised schedule for acceptance within fourteen (14) days after being requested by the Engineer or progress payments may be withheld. Acceptance of the schedule shall be in accordance with Subsection 9-3.1.

9-3.5 Schedule Requirements: At a minimum the following types of schedules will be required:

- A. Projects less than \$1,000,000.00
 - 1. Bar chart showing major items of work and durations
 - 2. Activity descriptions for major items of work
 - 3. Bar chart should be chronologically sequenced
- B. Projects between \$1,000,000.00 and \$3,000,000.00
 - 1. Critical Path Method (CPM) developed bar chart.
 - 2. Activity description and duration
 - 3. Sequence or Construction Milestones
 - 4. Float for each activity
 - 5. Progress line for progress update.
- C. Projects over \$3,000,000.00
 - 1. Activity nodes
 - 2. Activity descriptions
 - 3. Activity durations
 - 4. Sequence and interdependence of all activities
 - 5. Shop drawings, submittals and approvals
 - 6. Fabrication and delivery activities.
 - 7. Activities not longer than 15 day durations.
 - 8. Float for each activity
 - 9. Progress line for progress update
 - 10. Bar chart and logic sequence charts

Schedule submittals shall be in XER file format for P6 or MPP file format for Microsoft Project. Submittal shall also include schedule in PDF file format and two hard copy prints.

9-3.6 Basis of Payment:

- a. Contractor's first payment on mobilization item will not be approved until an initial Baseline Schedule meeting the requirements of this specification has been submitted by the Contractor to the Engineer.
- b. The failure to provide the required schedule updates may be cause for rejection by the Engineer of time extension requests or claims for schedule impacts.

- c. If a schedule update is delinquent by more than 2 months, the Contractor's next payment on mobilization item will not be approved until the required schedule information has been submitted to the Engineer.
- d. If the Contractor's field operations display an apparent logic and/or sequence change to the progress of Work, the Contractor shall be required to submit a revised construction schedule at the request of the Engineer. The Contractor shall submit a revised construction schedule meeting the requirements of this Section within fourteen (14) days after request or next progress payment on mobilization may be withheld.

9-4.1 DISQUALIFICATION: This Subsection of the Standard Specifications is amended to include the following.

In the event the Contractor is placed in default by the City-Parish for failure to accept the contract as bid after being awarded by City-Parish or otherwise unsatisfactory performance, the Contractor may be subject to up to six (6) months suspension from bidding on any City-Parish work. In any event, the contractor is not eligible to re-bid any project for which he has been placed in default.

9-4.3 RESIDENT NOTIFICATION: The following subsection is added at the end of 9-4:

The Contractor shall have issued notification to the occupants at least 7 days prior to the beginning of any work on the project, including surveying, tree trimming, sidewalk or driveway removal, roadwork, and any open excavation, an Owner approved **Homeowner Notification Door Hanger**, informing the homeowner of the impending work. The Contractor shall use the relative template for the "Homeowner Notification Door Hanger" provided at the end of the Special Provisions.

The Contractor shall plan notification of property occupants based upon the schedule of work as approved by the Project Engineer, so that occupants are not notified of work in their area too far in advance. Notification at a specific property should be performed no more than 2 weeks prior to the commencement of the work at that property.

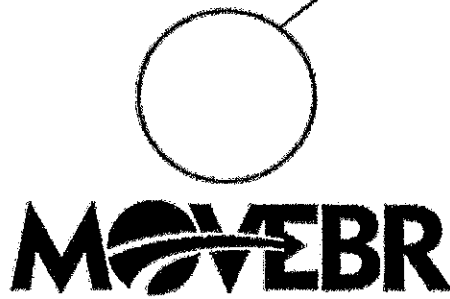
If it is necessary to remove driveway access to a property, the Contractor shall issue notification to the occupant at least 3 days, but not more than 7 days, prior to the beginning of work at the effected address.

The Contractor shall keep a record of when door hangers (all work situations) are distributed to the property occupants. These records are to be provided to the Owner upon request. These records may consist of color photographs of door hangers (all work situations) on homes or businesses as evidence of homeowner notification issuance. The photograph should be date stamped and should include the door hanger placed and street address of the homes or businesses.

In addition, on the day the work is to be performed, prior to commencing the work, the Contractor shall knock on the doors of all structures potentially impacted by the work and personally notify the occupants.

In the event that it becomes necessary to partially or completely close a road, notice shall be given to the residents and businesses located on or immediately adjacent to the closed road via an Owner approved Road Closure Door Hanger to be prepared and distributed by the Contractor. The Contractor should submit road closure permit applications to the Department of Public Works, Traffic Engineering Division no fewer than 48 hours in advance of the road closure. A copy of the permit application should be emailed to the Construction Manager at the same time it is sent to DPW.

Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as Owner and Contractor may otherwise mutually agree in writing.



C-P Project No.
Contractor Name

**We just kicked off a MOVEBR project in
your Neighborhood!**

Dear Resident:

The MOVEBR program is underway throughout the
City-Parish of East Baton Rouge!

During construction there may be trucks and heavy
equipment in the area. Public Safety is our priority.
You are reminded to use caution when driving,
bicycling, and walking near the construction site.

When it is necessary to restrict parking, please adhere
to the "No Parking" signs on the streets. If you have
any questions, you can reach the MOVEBR program
team by email at:

movebr@brla.gov

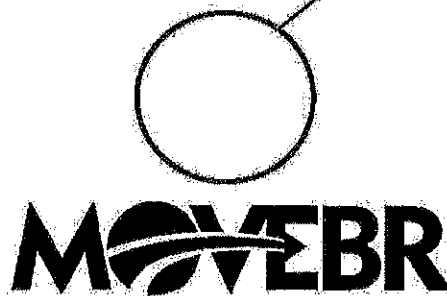
If you experience an emergency as a result of the
construction that requires immediate attention, please
contact the MOVEBR Rapid Response Team by
calling:

(225) 399-3123

Thank you for your patience!

**Baton Rouge MOVEBR Program
Visit our website at
<https://movebr.brla.gov>**

Shall be printed on Fluorescent Yellow Colored card stock (80 lb).



C-P Project No.
Contractor Name

DRIVEWAY REMOVAL NOTIFICATION

Dear Resident:

As a part of the improvements in your area, we will be removing and replacing a portion of your driveway and sidewalk in front of your property. If it will be an extended period between the removal and replacement of the pavement, the excavated area will be filled with stone to provide access to your property.

We intend to begin work in front of your property on

If you have any questions, you can reach the MOVEBR program team by email at:

movebr@brla.gov

If you experience an emergency as a result of the construction that requires immediate attention, please contact the MOVEBR Rapid Response Team by calling:

(225) 399-3123

Thank you for your patience!

Baton Rouge MOVEBR Program
Visit our website at
<https://movebr.brla.gov>

Shall be printed on Fluorescent Pink Colored card stock (80 lb).



C-P Project No.
Contractor Name

STREET CLOSURE ALERT

Dear Resident:

The MOVEBR program is underway throughout the City-Parish of East Baton Rouge.

In order to perform this work, it will be necessary to close, or partially close, certain streets in your area. The streets will be closed within the next two weeks. For alternate route information, please visit the City-Parish website at <http://br.gov> and scroll down to the "Road Closures" section.

We apologize for any inconvenience and would like to thank you in advance for your cooperation. If you have any questions, you can reach the MOVEBR program team by email at:

movebr@brla.gov

If you experience an emergency as a result of the construction that requires immediate attention, please contact the MOVEBR Rapid Response Team by calling:

(225) 399-3123

Thank you for your patience!

Baton Rouge MOVEBR Program
Visit our website at
<https://movebr.brla.gov>

Shall be printed on Fluorescent Orange Colored card stock (80 lb).

9-7 TEMPORARY SUSPENSION OF WORK: This Subsection of the Standard Specifications is amended to include the following.

In order to reduce air pollution, the contractor shall suspend all operations on this project, except those operations necessary to protect against the loss or damage to life property, on days that the Louisiana Department of Environmental Quality (LaDEQ) forecasts will be "Ozone Alert" days. The order to suspend operations of the project will be in writing and will be sent to the contractor as soon as possible the day before the forecasted "Ozone Alert" day. The contractor shall resume operations on the project the following day, unless the LaDEQ forecasts the day will also be an "Ozone Alert" day whereupon the contractor will be issued another 1-day suspension order in writing.

The contractor will be granted a one (1) calendar day extension of contract time; however, the City-Parish will not be liable for any additional costs incurred by the contractor due to an "Ozone Alert" suspension order.

9-8.1 DETERMINATION OF CONTRACT TIME: This sub-section of the Standard Specifications is deleted and replaced by the following:

The Contract Time will begin on the date stated in the Notice to Proceed and will continue until all contract pay items and punch list items are complete.

When the Contract Time is on a calendar day basis, it shall consist of the number of calendar days stated in the Contract counting from the date of beginning stated in the NTP, including all Sundays, holidays and non-working days. All calendar days elapsing between the effective dates of any orders of the Engineer to suspend work and to resume work for suspensions not the fault of the Contractor shall be excluded.

The Engineer, in his sole discretion, may stop Contract Time when he has determined that the Work can be safely and effectively used by the public for its intended purpose and the remaining work can be completed within thirty (30) days. If all work is not complete within thirty (30) days, Contract Time charges will be resumed retroactive to the date Contract Time was stopped.

9-8.2.2 ADVERSE WEATHER: This subsection is deleted and replaced by the following:

Based on NOAA data, the following are the normal number of adverse weather days for the parish. An adverse weather day is one on which rainfall or wet soil conditions will prevent the Contractor from performing at least five (5) hours of work on the controlling item as shown on the construction progress schedule. The normal number of adverse weather days have been considered in determining the Contract Time.

Normal Number of Adverse Weather Days Per Calendar Month

Jan	8	April	6	July	7	Oct	5
Feb	6	May	8	Aug	5	Nov	7
Mar	5	June	6	Sept	5	Dec	7

If the Contractor believes that the actual number of adverse weather days exceeds the normal number of adverse weather days for any month, the Contractor must submit a written request to the Engineer for an extension of Contract Time. Such request shall be accompanied by supporting documentation and shall be received by the Engineer by the 15th of the following month. The Contractor will be notified in writing within fifteen (15) days as to the amount of Contract Time extension, if any, that is deemed justified by the Engineer and will be granted. If the Contractor fails to submit such requests in accordance with the foregoing procedure, no Contract Time extensions based on adverse weather will be considered.

The Contractor shall use the Weather and Working Day Report on the following page for tracking and documenting adverse weather days. The documentation shall be submitted as stated above.

WEATHER AND WORKING-DAY REPORT

Est. No. _____ Date _____

Est. Period from _____ to _____

City-Parish Project No. _____

Street: _____

Contractor _____ Address _____

[illegible]

I have reviewed the above and concur with the Project Engineer's recommendations.

I hereby certify that the above information is correct to the best of my knowledge and belief.

Contractor (or Auth. Representative)

Project Engineer

NOTE: Original and cc: Estimate Unit cc: District Engineer cc: Contractor

9-8.2.3 EXTENSION OF TIME DUE TO UNFORESEEN DELAYS: This subsection is added to the Contract:

If the Contractor believes that the schedule is delayed due to unforeseen conditions, the Contractor must submit a written request to the Engineer for an extension of Contract Time and/or change the project milestone dates. Such request shall be accompanied by supporting documentation, supporting Construction Schedule, and shall be received by the Engineer by the 15th of the following month. The submittal must show that the unforeseen delays have impacted the critical path items such that the Contractor cannot meet the overall Contract Time.

The Contractor will be notified in writing within fifteen (15) days as to the amount of Contract Time extension, if any, that is deemed justified by the Engineer and will be granted. If the Contractor fails to submit such requests in accordance with the foregoing procedure, no Contract Time extensions and/or change in milestone dates based on delays due to unforeseen conditions will be considered.

The Contractor shall use the Weather and Working Day Report for tracking and documenting delays due to unforeseen conditions. The documentation shall be submitted as stated above. In order for a delay to be justified, the Contractor shall have to provide documentation showing that the critical path of the project schedule has been impacted.

9-8.3 Failure to Complete On Time: This sub-section of the Standard Specifications is deleted and replaced by the following:

For each calendar day that the work remains uncompleted after expiration of the Contract Time as extended, and for each calendar day beyond 45 days after substantial completion that any punch list (incomplete or non-conforming) work remains incomplete, the sum specified in the Contract for liquidated damages will be deducted from the monthly progress payments for the work, not as a penalty but as stipulated damages; if not specified, the sum listed below will be deducted.

Permitting the Contractor to continue the work after expiration of the Contract Time as extended will not operate as a waiver of the Owner or Owner of its rights under the Contract.

<u>Original Contract Amount (Dollars)</u>		<u>Daily Charge (Dollars)</u>
From More Than	To and including	
-----	25,000	150
25,000	50,000	250
50,000	100,000	270
100,000	500,000	430
500,000	1,000,000	605
1,000,000	2,000,000	700
2,000,000	5,000,000	1000
5,000,000	10,000,000	1500
10,000,000	-----	2500

The amount of liquidated damages will be deducted from monthly progress payments for the work under the Contract or any other contract the Contractor has with the Owner or Owner, and the Contractor and his surety shall be liable for and shall pay the Owner any and all liquidated damages in excess of amounts due the Contractor under the Contract.

9-9 DEFAULT OF CONTRACT: This Subsection of the Standard Specifications is amended by adding the following requirements after the last paragraph:

Any contractor placed in default for any of the conditions specified above shall be ineligible to bid any City-Parish work for a period of 6 months from the date of the default or until the reason for the default is remedied, whichever is earlier.

SECTION 10 MEASUREMENT AND PAYMENT

10-6 PARTIAL PAYMENTS: Subsection 10-6 is amended to include the addition of sub-section 10-6.1, as follows:

10-6.1 Request for Partial Payment – Reporting and Sub-Contractor Payments:

SEDBE Form 3, as provided in Section 3-10, shall be submitted each month with the Estimate of Value of Work Done to Date for payment from the City-Parish. The completed Form 3 shall accurately represent the amount paid to SEDB Subcontractors prior to that invoice period. This form must be submitted with every monthly invoice regardless of the amount of payment or lack of payment. This form shall be signed by the Contractor and signed by the SEDBE Subcontractor(s) if payment has been made for that month. SEDBE participation will not officially be counted toward the Prime Contractor's commitment until payment has been rendered to the SEDBE. Failure to submit the required reports may result in the withholding of payment or partial payments to the Contractor until the required forms are submitted.

10-7 PAYMENT FOR STOCKPILED OR STORED MATERIALS:

This subsection of the Standard Specifications is deleted and replaced by the following:

Upon written request, the invoice cost, less the retainage specified in Subsection 10-6, of approved materials stored or stockpiled at the Project site or other designated location in the vicinity of such construction will be paid. Stored materials shall be considered those materials procured for the Project but will not be incorporated into the work for a minimum of thirty (30) calendar days from delivery. Payment will not exceed the total estimated quantity required to complete the Project. The agreed value will not exceed the appropriate portion of the Contract item or items in which such materials are to be incorporated. Payment will be limited to materials classified as Major Items. Major Items for this project will be limited to all Concrete Precast Units (sanitary sewer and drainage), exclusive of castings. Perishable articles and small warehouse items will not be included.

Payment for stockpiled or stored materials will not constitute acceptance. It shall be the Contractor's responsibility to protect the material from damage while in storage.

The contractor shall furnish the Engineer a certified inventory of the quantity of each stockpiled item and its invoiced cost when advance payment is requested. Within thirty (30) calendar days after payment by the Owner, the Contractor shall submit a copy of a certified paid invoice statement to the Engineer for each item for which payment has been made. If certification of payment is not presented within the thirty (30) day period, the advanced payment will be deducted from the next progress payment.

Ownership of materials for which advancements have been made by the Owner shall not vest in the Owner until such materials are incorporated in the work and accepted by the Owner and the Owner shall not release the Contractor from responsibility for any portion thereof. The Contractor shall save the Owner harmless in the event of loss or damage of materials for which advancements have been made. The amounts advanced on stockpiled or stored materials will be deducted from payments of monthly estimates as the materials are incorporated into the work.

PART II EARTHWORK

SECTION 201 CLEARING AND GRUBBING

Section 201 of the Standard Specifications is deleted in its entirety and replaced by the following:

201-1 DESCRIPTION: This work consists of clearing, grubbing, trimming/pruning, removing and disposing of vegetation and debris within rights-of-way, servitudes and easement areas, or as shown on the plans, except items that are designated to remain or to be removed under other items. Erosion control shall be in accordance with Section 903.

201-2 GENERAL REQUIREMENTS: Clearing and grubbing shall be done to the limits of the required right of way and servitudes unless otherwise designated on the plans. Trees, stumps, roots and other protruding vegetative obstructions shall be cleared and grubbed. No grinding of stumps will be allowed unless approved by the Project Engineer. Roots and nonperishable solid objects which will be at least 3 feet below subgrade or embankment slope will be permitted to remain if they do not extend more than 6" above original ground line or low water level.

The Project Engineer will designate trees, shrubs, plants and other items to remain, and the Contractor shall preserve such items. Trees designated to remain shall be protected as shown on the plans. Equipment, materials and supplies shall not be stored in proximity of items designated to remain. In case of damage to bark, trunks, limbs or roots of vegetation designated to remain, the Contractor shall repair such damage by AAN horticultural and tree surgery practices. Low hanging, unsound or unsightly branches on trees or shrubs designated to remain shall be removed as directed. Branches extending over roadbed shall be trimmed at least 20 feet above pavement.

Trees shall not be felled outside rights-of-way, servitudes or easement areas. Damage outside rights-of-way, servitudes or easement areas caused by the Contractor's operations shall be the Contractor's responsibility.

Except in areas to be excavated, holes left from clearing and grubbing shall be backfilled with surrounding soil types or soil complying with subsection 203-2(a) and compacted to at least the density of surrounding soils.

Burning will not be allowed unless allowed by ordinances and specified to be allowed in the contract. If burning of material is allowed, it shall be under the constant care of watchman. Burning of materials shall not jeopardize anything designated to remain on the right-of-way, the surrounding forest cover, or other adjacent property. The Contractor shall be responsible for burning in accordance with all laws and ordinances, including, but not limited to, the current regulations of the Louisiana Department of Environmental Quality.

Timber to be cleared which has not been removed prior to beginning the work shall become the property of the Contractor unless otherwise indicated on the plans.

On private property or areas designated in the plans where cut timber is to remain the property of landowner, the Contractor shall top the tree and neatly stack the logs outside the project limits. The Contractor shall remove and dispose tree top and stump.

Stump holes and other holes left from clearing and grubbing shall be filled by blading the area or backfilling with existing materials or soil complying with Subsection 203-2(a) and compacted to at least the density of the surrounding soils.

Contractor shall be required to maintain project limits such that grass and weeds do not reach a height of more than 12 inches and allowed to remain in such condition for more than 2 weeks.

201-3 TRIMMING AND PRUNING OF TREES: Work includes trimming or pruning trees designated on the drawings to allow clearance for other associated work within City-Parish right-of-way and/or servitudes. Such trimming or pruning shall follow good standard arboricultural practices. All work shall be done in accordance

with arboricultural practices as set forth in the National Arborist Association's publication "Standards for Pruning for Shade Trees" and Safety Requirements for Tree Pruning, Trimming, Repairing, or Removal (ANSI-Z133).

201-3.1 Contractor Requirements: Contractor must employ an ISA Certified Arborist and/or a Certified Tree Worker, who is on each job site at all times during tree trimming or pruning activities. They shall have knowledge of the natural habits of the trees so that their natural crown shapes will be preserved when removing any of the wood (branches, leaders, etc.). Contractor must meet the general standards of safety set forth in Section 1-8 of ANSI – Z133. Contractors shall be responsible for the enforcement of these provisions to ensure that their employees are following these safety standards.

201-3.2 Traffic Control: The Contractor shall be solely responsible for pedestrian and vehicular safety and control within the work site and shall provide the necessary warning devices, barricades, and personnel needed to give safety, protection, and warning to persons and vehicular traffic within the area.

201-3.3 Utility Agency Coordination: Contractor shall coordinate with relative utility agency any time assistance is needed to work safely around overhead or underground installations. Tree trimming and removal operations may be conducted in areas where overhead electric, telephone, and cable television facilities exist. The Contractor shall protect all utilities from damage, shall immediately contact the appropriate utility agency if damage should occur, and shall be responsible for all claims for damage due to his operations.

The Contractor shall make arrangements with the utility agency for removal of all necessary limbs and branches that may conflict with or create a personal injury hazard in conducting the operations of this project.

201-3.4 Execution: Class I, II, III, and IV specifications of the National Arborist Association "Pruning Standards for Shade Trees" shall be used except that in no instance will topping be employed on any trees, but rather directional pruning and drop crotching shall be substituted for Class IV standards.

All large, established trees (over 8" in diameter) trimmed to maintain a 20-foot clearance over the streets and/or required work and 8-foot clearance over sidewalks. Small trees (8" diameter or under) also pruned to provide as much street and sidewalk clearance as possible without adversely affecting the vitality of the tree. They shall also have a side clearance of 0 to 2 feet along these corridors to keep growth out of travel space. In both cases, a live crown ratio of at least 50% on each tree must remain after pruning. Branches whose ends are limber enough to bend down, under weight of rain, and fall within the specified clearances shall also be trimmed in the same way. All limbs exceeding one inch in diameter must be precut to prevent splitting.

All branches 3 1/2 inches in diameter shall be lowered to the ground by rope. All cuts made are to be flush with the parent stem and parallel with the flow of sap. Tearing, ripping or pulling off of branches is prohibited. Only handsaws, power saws or tools, pole saws or pruners are to be used in any trimming work.

Climbing irons, spurs, or spikes are not used on trees to be trimmed or pruned. Any tree damage caused by Contractor is to be repaired immediately to the satisfaction of the City-Parish Arborist at no additional cost to the Owner. Trees damaged beyond repair, as judged by the City-Parish Arborist, are removed by the Contractor at no additional expense to the Owner and replaced by a tree of size and species designated by the City-Parish Arborist.

Any damage to property as the result of the Contractor's operations shall be the responsibility of the Contractor. The Contractor shall take all necessary precautions to eliminate damage to adjacent trees and shrubs, lawns, or other real or personal property. Holes made in the lawn, regardless of size, shall be filled with sandy loam soil and sodded in accordance with Section 903 at no additional cost to the Owner. Vegetation surrounding a tree marked for trimming shall be disturbed as little as possible.

All wood, limbs, brush, and chips cut down must be hauled away within the same day that it is cut. All open loads of debris must be covered and tied down with tarpaulins or equivalent, when being transported on public streets according to applicable state and local laws and regulations. Dump fees are the responsibility of the Contractor. All areas where tree work has been performed must be left broom clean. The work area shall be kept safe at all

times until the clean-up operation is completed. The work site shall be returned to the same state it existing in prior to trimming and pruning work or better.

201-4 CHANNEL CLEARING: Channel clearing consists of cutting, mowing, stacking, treating and clearing of all weeds, brush, trees and debris from within the channel and berms of open drainage channels.

The Contractor shall notify the Project Engineer at least 2 weeks prior to beginning work so that areas and trees or plants not to be cleared can be marked.

Unless otherwise directed, structures located within clearing limits may be temporarily removed for execution of the work. Upon completion of the work, items removed shall be reinstalled or relocated to a condition equal to the condition that existed before the structure was removed. The Contractor shall be liable for damage due to his operations to structures in the clearing area or on adjacent property.

Within the channel, weeds, brush, and trees shall be cut flush with the ground surface, except that trees along steep slopes at the waters edge may be cut to a height of approximately 3 feet and tapered in decreasing height to flush with ground level as you move up the slope.

Tree stumps shall be chemically treated to provide at least 90% kill of regrowth. Immediately after cutting, tree stumps shall be split and treated with Tordon 101R or RTU in accordance with the manufacturer's instructions at the rate of 1.0 ml of undiluted material per 3" of stump diameter, after which a red vegetable or agricultural dye shall be applied. The Contractor shall comply with State and Federal regulations governing labeling and use of herbicides.

All felled material shall be promptly removed from the channel. Felled material suitable for chipping may be chipped and spread on the cleared areas outside the channel slope; material not chipped shall be disposed of beyond the project in accordance with Subsection 202-2.

201-5 CLEARING AND EDGING OF VEGETATION ON SIDEWALKS AND PATHS: This work consists of removing vegetative growth and soil build-up encroaching upon existing sidewalk or path surfaces, joints, and edges. Contractor may use both hand operated and motor-powered tools for this work. Tools shall be capable of trimming vegetation all the way back to the edges of the pavement without damaging the pavement. Edging shall leave approximately ¼" gap between edge of pavement and adjacent grade. All vegetation, debris, and soil shall be removed from the sidewalk or path and properly disposed of by the Contractor within the same day that it is cleared and edged. Dump fees are the responsibility of the Contractor. All sidewalks and paths where clearing and edging has been performed must be left broom clean. Once operations are complete Contractor shall notify Project Engineer for inspection of the work and to identify any potential repairs or rehabilitation needed for the existing sidewalk or path.

201-6 MEASUREMENT: Hauling and disposal shall not be measured separately for payment. If a pay item for clearing and grubbing, removal of trees, tree trimming and pruning, or channel clearing is included in the contract, measurement will be made as follows:

- a. **Clearing and Grubbing:** Clearing and grubbing will be measured per acre or on a lump sum basis, as specified. The quantity for acre measurement will be the contract quantity, adjusted as required due to plan errors or plan changes.
- b. **Removal of Trees:** Removal of trees will be measured per each tree of specified size range in diameter removed. Tree diameter shall be measured at a location four (4) feet from ground level and approved by the Project Engineer. This item is to be used only when trees have been designated in the plans to be removed on an individual unit basis.
- c. **Channel Clearing:** Channel clearing will be measured on a lump sum basis.
- d. **Tree Trimming and Pruning:** Trimming and pruning of trees will be measured per each tree of specified

size range in diameter trimmed. Tree diameter shall be measured at a location four feet from ground level and approved by the Engineer. This item is to be used only when trees have been designated in the plans to be trimmed and pruned on an individual unit basis.

- e. **Clearing and Edging of Vegetation on Sidewalks and Paths:** Clearing and edging of vegetation will be measured per each square yard of sidewalk or path as designated on the Drawings or as directed by the Project Engineer.

201-7 PAYMENT: If a pay item for clearing and grubbing, removal of trees or channel clearing is included in the contract, payment will be made as follows:

- a. **Clearing and Grubbing:** Payment will be made at the contract unit price per acre or the contract lump sum price, as specified, which includes all required clearing and grubbing on the project.
- b. **Removal of Trees:** Payment for removal of trees will be made at the contract unit price per each tree of specified size range in diameter removed.
- c. **Channel Clearing:** Payment will be made at the contract lump sum price.
- d. **Tree Trimming and Pruning:** Payment for trimming and pruning of trees will be made at the contract unit price per each tree of specified size range in diameter trimmed. Tree trimming under this item shall be as designated on the Drawings or as directed by the Project Engineer. Contractor shall coordinate with the property owner prior to trimming and pruning.
- e. **Clearing and Edging of Vegetation on Sidewalks and Paths:** Payment will be made at the contract unit price per square yard of sidewalk or path as designated on the Drawings or as directed by the Project Engineer.

If no pay item for clearing and grubbing, removal of trees, tree trimming and pruning, or channel clearing is included in the contract, no direct payment will be made for this work.

201-8 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
2010100	Clearing and Grubbing	Lump Sum
2010200	Clearing and Grubbing	Acre
2010300	Removal of Trees (6" to 12")	Each
2010301	Removal of Trees (13" to 24")	Each
2010302	Removal of Trees (25" to 36")	Each
2010303	Removal of Trees (Over 36")	Each
2010400	Channel Clearing	Lump Sum
2010401	Light Channel Clearing	Lump Sum
2010402	Dense Channel Clearing	Lump Sum
2010500	Trimming and Pruning of Trees (6" to 12")	Each
2010501	Trimming and Pruning of Trees (13" to 24")	Each
2010502	Trimming and Pruning of Trees (25" to 36")	Each
2010503	Trimming and Pruning of Trees (Over 36")	Each
2010504	Trimming and Pruning of Trees	Lump Sum
2010600	Clearing and Edging of Vegetation on Sidewalks and Paths	Square Yard

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

202-2 CONSTRUCTION: Delete the following sentence of this subsection in the Standard Specifications:

“When saw cutting of pavements, walks, etc. is specified, depth of saw cut shall be at least 1/3 the depth of pavement walk, etc.”

And replace with the following:

“When saw cutting of pavements (concrete, asphalt, and concrete with asphalt overlays), walks, etc. is specified and the adjacent pavement is to remain, depth of saw cut shall be full depth of the pavement, walk, etc. Saw cuts shall be made with a concrete saw for the full depth of the pavement along the perimeter of the pavement, prior to removal as shown in the Contract Documents. Final edges along pavement removal limits shall be straight, clean, solid vertical faces free from loose material prior to pavement restoration. Spalls in the existing pavement to remain resulting from pavement removal shall be repaired by extending the removal limits to include spalled areas. Pavement removal for spall repair shall be made at the full patch width. Spalled areas outside of the established pay limits shall be repaired at no additional cost to the Owner.”

SECTION 203 EXCAVATION AND EMBANKMENT

Section 203 of the Standard Specifications is deleted in its entirety and replaced by the following:

203-1 DESCRIPTION: This work consists of excavation, disposal, placement and compaction of soil materials for roadways and other structures, excavation for ditches and channels, and other grading operations necessary for the work in accordance with these specifications and in conformity with the lines, grades, thicknesses and typical sections shown on the plans or established. Excavated material may be used in accordance with Subsection 203-07. Erosion control shall be in accordance with Section 903.

203-2 GENERAL EXCAVATION: General excavation consists of excavation of materials within the right-of-way, servitudes or easements, except channel excavation or structural excavation. General excavation also includes unsuitable material in accordance with Subsection 203-5.

203-3 CHANNEL EXCAVATION: Channel excavation consists of excavation for drainage beyond the limits of the roadway section (except for wing ditches at cuts), inlet and outlet ditches to structures or roadways, changes in or deepening of stream channels, berm ditches, ditches parallel or adjacent to the roadway beyond the limits of the roadway section, and material excavated under bridges.

203-4 STRUCTURAL EXCAVATION: Structural excavation consists of excavation for construction of retaining walls, bridge foundations and other structures.

203-5 UNSUITABLE MATERIAL: Unsuitable materials are soils that will decay or produce subsidence in the embankment, or materials containing stumps, roots, logs, humus, or other material not satisfactory for use in the embankment or other construction purposes. The engineer will determine the material to be removed. Unsuitable materials shall be removed and disposed of as general excavation.

203-6 EMBANKMENT MATERIAL: Embankment material consists of soils required for construction of embankments or other portions of the work. Embankment shall be obtained from an approved source and shall be used in accordance with Subsection 203-7.

The contractor shall notify the engineer at least 5 days in advance of borrow sampling operation so that if necessary, the engineer may schedule the observation of the sampling and classification work by an independent laboratory. The contractor will not be permitted to begin borrow operations until materials are approved for use. Prior to commencing borrow operations; the contractor shall submit to the Department a copy of the written agreement between the contractor and land owner.

203-7 SOIL USAGE. At the contractor's expense, an independent laboratory will test and classify soil in accordance with DOTD TR 423 from samples taken in the original location or from designated stockpiles. Soil shall be classified and approved prior to its being placed in embankments or other final positions on the project. Blending in the pit to adjust percent silt or sand will not be permitted. Soils which do not meet Liquid Limit or PI requirements shall not be blended to reduce Liquid Limit or PI. Soils may be treated with lime to reduce PI in accordance with Subsection 203-7(d). Soil properties will be determined by the test methods shown in Table 203-1.

**Table 203-1
Soil Properties**

Property	Test Method
Plasticity Index (PI)	DOTD TR 428
Liquid Limit (LL)	DOTD TR 428
% Organic	DOTD TR 413
% Silt	DOTD TR 407
pH	DOTD TR 430

- a. Usable Soils: Usable soils shall have a maximum PI of 25 and a maximum organic content of 5 percent. Soils with a silt content of 50 percent or greater and also a PI of 10 or less will not be allowed.
- b. Nonplastic Embankment: Nonplastic embankment shall be as specified in Subsection 203-10.
- c. Headers: Headers are that portion of the embankment within 500 feet of a bridge end. Headers shall be constructed for their full height with usable soils having a minimum PI of 11, a maximum PI of 25, and a maximum silt content of 65 percent. No lime treatment to the soil to meet the PI requirements will be permitted. Headers shall be compacted to 98 percent of maximum dry density in accordance with Subsection 203-8.
- d. Embankments other than Headers: Embankments shall be constructed with usable soils, except soil with a PI greater than 25 and less than 35 will be permitted when treated with a minimum of 6 percent lime, by volume, provided the organic content and silt requirements given in Heading (a) are met. If the contractor uses lime treatment, it will be at no direct pay. Lime treatment shall be Type D Treatment conforming to Section 303.

The contractor may request in writing that usable soils for temporary detour roads have a PI not to exceed 45 and a maximum silt content of 75 percent provided:

- 1. This material will be removed and not become part of the permanent embankment.
- 2. The contractor agrees to take responsibility for any additional maintenance required.

e. Plastic Soil for Slopes:

- 1. Embankment Material: The outside layer of embankment (fill sections) will consist of a plastic soil blanket in accordance with Subsection 203-11. Sampling in the pit may be allowed if an identifiable strata can be isolated. Otherwise, sampling will be from dedicated stockpiles.
- 2. Cut Slopes, PI Less than 10: When soils having a PI less than 10 exists on cut slopes, the contractor shall undercut 12 inches and place a plastic soil blanket conforming to Subsection 203-11.
- 3. Cut Slopes, PI 10 or Greater: When soils having a PI of 10 or greater but with a pH less than 5.5, or greater than 8.5, exist on cut slopes, the contractor shall undercut and place a plastic soil blanket complying with Subsection 203-11. In lieu of furnishing a plastic soil blanket, the soil may be modified in place so that the pH of the soil complies with the requirements of Subsection 203-11, at the option of the engineer and concurrence of the contractor. In such case payment will be in accordance with existing items or Subsection 10-4, as applicable, not to exceed the cost of undercut and replacement.

- f. Usable Soils for Slope Adjustments and Shoulder Widening: When the thickness of embankment material used for slope adjustment is less than 12 inches, a plastic soil complying with Subsection 203-11 will be required. If the thickness is greater than 12 inches, the contractor will be allowed to substitute plastic soil for usable soil, provided the widening is not directly below a paved shoulder.

203-8 GENERAL REQUIREMENTS: Excavation and embankment construction consists of constructing roadway embankments, including preparation of areas on which they are to be placed; constructing drainage excavation; backslope construction; constructing dikes, when required; placing and compacting approved material in areas where unusable material has been removed; placing and compacting embankment material in holes, pits and other depressions; and placing and compacting embankment materials for backfilling structures. Prior to beginning excavation, grading or embankment operations in an area, all necessary clearing and grubbing in that area shall have been completed. Prior to any embankment operations in an area, all corresponding roadside ditches shall be cut to facilitate drainage in that area. Embankment materials shall not be placed or spread on portland cement concrete or asphaltic concrete pavements. Pavement surfaces, edges and joints shall not be damaged during embankment operations.

Final excavation and embankment slope lines shall be uniform in appearance. Measurements shall be made as necessary to assure that the elevations at the top, bottom, and intermediate breaks in the slope are such that a minimum acceptable slope is achieved. The slopes shall be straight without valleys or humps, as determined by visual inspection. If an apparent discrepancy is discovered upon visual inspection, measurements shall be taken a minimum of every 10 feet measured along the slope between theoretical break points in the embankment. When these measurements reveal slope variances by more than 0.03 ft/ft, too steep, or 0.15 ft/ft, too flat, the slopes shall be reworked by the contractor until these criteria have been met. The top of embankment shall not vary from the established grade by more than ± 0.1 foot.

Embankment material shall be in accordance with Subsection 203-7 and shall be placed in uniform layers not exceeding 12 inches of uncompacted thickness. Each layer shall be placed for the full width of embankment, blended as necessary to obtain a uniform material, brought to a uniform moisture content, and compacted by approved methods to a minimum of 95.0 percent of maximum dry density before the next layer is placed. Maximum dry density will be determined in accordance with DOTD TR 415 or TR 418 and percent in-place density in accordance with DOTD TR 401. The density of the embankment shall be such that the density of the type of base course being constructed as given in Table 203-8 shall be met.

Table 203-8
Base Course Density

Base Course Type	Percent of Maximum Density
Soil Cement	95%
Aggregate Base Course	
- Sand Clay Gravel	100%
- Stone	95%
Treated Layer Under Asphaltic Concrete	95%

The moisture content at the time of compaction, tested in accordance with DOTD TR 403, shall be within a range of ± 2.0 percent of optimum moisture established in accordance with DOTD TR 415 or TR 418 or the lifts shall be reprocessed and recompacted until these requirements are met. Operations shall be conducted to prevent lamination between lifts. Laminations between lifts shall be corrected prior to placing additional lifts. Surfaces of excavated areas and embankments shall be smooth and uniform. Material outside construction limits shall not be disturbed.

Excavated material shall become the property of the contractor. Soils from excavation areas may be used when approved in embankments or other finished sections. Surplus or unusable excavated material shall be disposed of by the contractor in accordance with Subsection 202-2 or as provided in this Subsection.

Channel excavation and rough grading shall be performed simultaneously, unless otherwise directed or permitted. Roots, stumps or other vegetative obstructions in sides and bottom of ditches and channel changes shall be cut to conform to required cross section and grade. Excavated material shall be placed sufficient to protect the integrity of the slope but in no case closer than 3 feet (1.0 m) from the edge of ditch.

When obliteration of old roadways is required, it shall include grading operations necessary to satisfactorily incorporate the old roadway into the new roadway and surroundings in order to provide a pleasing appearance and to allow drainage.

When preparing surface layers on which the embankment or base is to be placed, the engineer will require the contractor to attempt all normal earthwork construction methods before undercutting or modifying the soil with additives. Such construction methods may include, but are not limited to, the following and will be at no direct pay:

- a. Draining and drying of the surface until the material is within the limits of optimum moisture before compaction is attempted.
- b. Using lighter construction equipment for manipulating, disking, drying and compacting the material.
- c. Dumping successive loads of material in a uniformly distributed layer of a thickness necessary to support equipment while placing subsequent layers.

- d. Rerouting heavy construction equipment around the area until the embankment can support the equipment without damage to foundation soils.

Unstable materials shall be removed by undercutting, unless otherwise directed, and backfilled to required section with usable soils as directed.

When undercutting is required, the contractor shall conduct the operations in such manner that the engineer can make necessary measurements before backfill is placed.

When excavation and embankment construction results in surface soils having a PI less than 10 or pH less than 5.5 or greater than 8.5, the contractor shall place a plastic soil blanket complying with Subsection 203-11.

The contractor shall be responsible for the stability of embankments until final acceptance. Construction activities, which may lead to subsequent embankment damage, will not be permitted. When embankments are constructed on a surface sloping more than 6:1 from the horizontal, the slope of the ground on which the embankment is to be placed shall be cut into steps, as directed, before fill is placed.

When a new roadway is to be constructed on an existing roadbed, and the surface of the existing roadbed is within 2 feet of finished sub-grade, the existing roadbed shall be scarified full width to a depth of not less than 9 inches and recompacted in accordance with this subsection.

When an embankment is to be constructed to a height of less than 5 feet, heavy sod and objectionable vegetation shall be removed from the area on which the embankment is to be placed. The area shall be scarified to a depth of approximately 9 inches. This area shall be recompacted to at least 95.0 percent of maximum dry density. Maximum dry density will be determined in accordance with DOTD TR 415 or TR 418 and percent in-place density in accordance with DOTD TR 401. When height of fill is 5 feet or more, removal of sod will not be required but the area on which embankment is to be placed shall be disked to the satisfaction of the engineer and recompacted before construction of embankment.

When embankment material is to be deposited only on one side of abutments, wing walls, piers, or culvert head walls, the area immediately adjacent to the structure shall not be compacted to the extent that it will cause excessive pressure against the structure. Fill adjacent to the end bent of a bridge shall not be placed higher than the top of the substructure until the superstructure is in place. When the embankment is to be deposited on both sides of a concrete wall or similar structure, operations shall be conducted so that the embankment is always at approximately the same elevation on both sides of the structure. Backfilling of structures shall be performed in accordance with Section 701-7.

When embankments are constructed in lakes, streams, swamps or other unstable areas and unstable material cannot be removed or the area drained, the requirement for placing material in layers as outlined above may be waived. When this requirement is waived, the embankment shall be placed by end dump or other approved methods to an elevation where normal construction methods can begin. Embankments placed above this elevation shall be constructed in layers as specified above. When a wave of unsuitable material is forced up in front of the end dumping operation, it shall become the property of the contractor and be removed as necessary, and will not be allowed to be trapped and be incorporated in the embankment except as part of plastic soil for slopes.

203-9 CUT AREA PREPARATION: The top 12 inches shall be scarified and compacted to such density that the compaction requirements of the type base course being constructed given in Table 1 shall be met. Construction, compaction, and testing requirements shall be in accordance with Subsection 203-8.

When unstable soils are encountered, the engineer will determine the limits to be undercut. The contractor shall excavate to a stable foundation or to the depth required by the engineer and backfill to existing grade. Undercut shall be constructed and tested in accordance with Subsection 203-8.

When a stable foundation cannot be reached, the embankment materials shall be "bridged-in" and the remaining embankment constructed in accordance with Subsection 203-8 to existing grade.

203-10 NONPLASTIC EMBANKMENT:

- a. **Materials:** Nonplastic embankment material shall be an approved sand or stone with a maximum organic content of 4.0 percent, unless otherwise specified on the plans.
1. **Sand:** Sand embankment shall consist of nonplastic material with at least 75 percent passing the No. 4 sieve and containing not more than 15 percent passing the No. 200 sieve when tested in accordance with DOTD TR 112 and DOTD TR 113.
 2. **Stone:** Stone shall be coarse stone listed on QPL 2 with a dry rodded unit weight of no greater than 95 pounds per cubic foot when tested in accordance with AASHTO T19. Stone shall comply with the following gradation:

<u>U.S. Sieve</u>	<u>Percent Passing</u>
2 inch	100
1 ½ inch	85 – 100
¾ inch	35 – 88
No. 4	0 – 10

- b. **General Requirements:** Unsuitable material defined in Subsection 203-5 shall not be entrapped in the embankment. The contractor shall remove any such material at no direct pay.

Surcharge materials shall remain on the embankment for at least the specified number of days after approval of the increment. Damage to embankment increments due to the contractor's operations shall be satisfactorily repaired by the contractor at no direct pay. The contractor will be permitted to remove excess surcharge materials after the surcharge period. Verification cross sections of the final embankment will be taken after removal of the surcharge. The Department will assume liability for subsidence after these cross sections are taken. After all embankment increments have been surcharged, excess surcharge material shall be satisfactorily disposed of in accordance with Section 202-2 at no direct pay.

Except for shell or stone embankments, the contractor shall furnish and place a plastic soil blanket complying with Subsection 203-11.

- c. **Nonplastic Embankment Construction:** Nonplastic embankments shall be constructed by mechanical methods. Unless otherwise shown on the plans, material shall be placed in lifts not exceeding 15 inches uncompacted thickness after establishing a working table as directed. Each lift shall be compacted and tested in accordance with Subsection 203-8.

203-11 PLASTIC SOIL BLANKET: Plastic soil blanket shall consist of soils having a minimum PI of 11, maximum PI of 35, a maximum silt content of 65 percent, and a pH not less than 5.5 or greater than 8.5, and a minimum organic content of 3 percent. The contractor will be allowed to blend organic materials to achieve the minimum 3 percent organic content. The plastic soil blanket shall support a satisfactory stand of grass in accordance with Section 903. The minimum thickness of the soil blanket will be 12 inches. Areas requiring a plastic soil blanket shall be approved prior to placement of the plastic soil blanket. After materials are placed and spread, lumps, stones, roots and other foreign matter shall be removed from the area. Soil blanket material shall be spread and rolled in a manner that leaves a uniform surface. Any remaining ridges or grooves, including cleat tracks from the dozer, will be parallel to the roadway during the period of time between placement and seeding.

Plastic soil blanket shall be placed in a timely manner to prevent erosion.

203-12 GEOTEXTILE FABRICS: General: This work consists of furnishing and placing geotextile fabric in accordance with these specifications and in conformance with the details shown on the plans.

- a. **Materials:** The geotextile fabric shall comply with Section 1022-8.
- b. **Construction Requirements:** Rolls of geotextile fabric shall be kept covered and protected from ultraviolet degradation at all times until use. Geotextile fabric that has been installed shall be covered with embankment within 7 calendar days. When ultraviolet damage occurs, the geotextile fabric shall be

removed and replaced. The geotextile fabric shall be placed at the locations shown on the plans or as directed. Adjacent rolls of geotextile fabric will be overlapped or sewn. When rolls are overlapped, the overlap shall be a minimum of 18 inches, or as specified in the plans, including the ends of the rolls. The top layer of the geotextile fabric shall be parallel with adjacent rolls and in the direction of embankment placement. When rolls are sewn, the contractor shall join adjacent rolls by sewing with polyester or kevlar thread. Field sewing shall employ the "J" seam or "Butterfly" seam with the two pieces of geotextile fabric mated together, turned in order to sew through 4 layers of fabric and sewn with 2 rows of Type 401, two-thread chain stitch. Where the ground is covered with water or soil is saturated, sewing of the geotextile fabric will be required.

The geotextile fabric shall be placed as smooth as possible with no wrinkles or folds, except in curved road sections. For curved road sections, the geotextile fabric shall be folded to accommodate the curve. The fold shall be in the direction of construction and pinned or stapled. Ruts that occur during construction shall be filled and compacted prior to placement of geotextile fabric.

Damaged geotextile fabric shall be either removed and replaced with new geotextile fabric or covered with a second layer of geotextile fabric extending 2 feet in each direction from the damaged area.

203-13 QUALITY CONTROL: The contractor shall locate, select, and place material conforming to specification requirements. The contractor shall control his processes, including performing tests and making adjustments as necessary, to result in a uniform quality product meeting all the requirements of the plans and specifications. Tests for in-place moisture content shall be performed by the contractor in accordance with DOTD TR 403, at a frequency that will ensure that the material is within the tolerances of optimum moisture. Tests for in-place density shall be performed by the contractor in accordance with DOTD TR 401 at a frequency that will ensure that the compactive effort is producing a uniform product that conforms to specification requirements. The contractor shall control placement and finishing to ensure conformance with the lines, grades, thickness, and typical cross-sections shown on the plans or established.

Sections will be inspected prior to acceptance testing. Obviously deficient areas shall be corrected prior to acceptance testing. Proof rolling shall be done with a loaded dump truck if so requested by the engineer.

203-14 ACCEPTANCE: The Department will perform inspection, sampling, and testing for acceptance. Any area that is deficient will require correction whether identified by inspection or testing.

The embankment (with surcharge, if required) will be approved in increments of 1,000 feet, except terminal increments which may be less than 1,000 feet.

Maximum density for earthwork will be determined in accordance with DOTD TR 415 or DOTD TR 418; in-place density will be determined in accordance with DOTD TR 401.

203-15 CHANNELS:

- a. **Excavation:** If slides occur during the work, slide material shall be removed from the channel bottom, and slopes restored to required section.

Inlets of side ditches and tributaries shall be graded to a minimum bottom width of 2 feet and side slopes not steeper than 2:1.

Where bridges are of ample size, the channel shall be excavated to required section beneath the bridge. If bridges are not of ample size to accommodate the required section, the channel shall be excavated as directed under the bridge.

Where the channel goes through culverts, the culverts shall be cleaned of dirt and debris.

- b. **Backfill:** Material from channel excavation that is reasonably free of vegetation and debris may be used for channel backfill. Backfill shall be placed in layers not exceeding 12" uncompacted thickness and each

layer compacted to at least 90% of maximum density determined by AASHTO T 99.

203-16 MEASUREMENT:

- a. **General:** Unless otherwise specified, plastic soil for slopes in accordance with 203-7(e) will be considered incidental to the embankment and will not be measured separately, but will be measured as embankment.
- b. **General Excavation, Embankment and Nonplastic Embankment:** The measurement of quantities will be computed by the average end area method and will be that area bound by (1) the original ground line established by location (plan) cross sections (if accurate) or new original cross sections obtained by the contractor, and (2) the final theoretical pay line as shown on the plans, or established by the engineer, adjusted for field changes.

After clearing and grubbing operations, the contractor will take original cross sections for the entire length of the project. All original cross sections shall be taken in the presence of a designated DPW employee. Cross sections shall be taken at sufficient intervals to accurately determine earthwork quantities, not to exceed 100 linear feet. The cross sections shall be taken in accordance with Department procedures, and results must be furnished to the Department in a format satisfactory to the engineer. The Department reserves the right to take additional cross sections as needed to verify the contractor's cross sections. In the event the cross sections do not verify, the contractor will investigate and reconcile any differences.

The original cross sections will be used to determine the accuracy of the location cross sections by using random sections not farther apart than 1000 linear feet and centerline elevations at intervals of 100 linear feet. The location cross sections will be considered to be usable if the average of the differentials do not exceed ± 0.3 foot. For significant portions of the project with obvious errors between location and original cross sections, the contractor's original field cross sections will be used, and will not be part of the verification process. In all cases where location sections are unavailable, new originals are to be taken and used.

The final theoretical pay line shall be derived from the profile grade, typical section and ditch grades shown in the plans, along with approved plan changes and other field changes made by the engineer. No increase in quantities will be authorized for overbuilding unless directed by the engineer.

Pay lines for surcharged embankments will be the theoretical surcharge lines shown on the plans. No measurement will be made for removing and disposing of excess surcharge materials.

When payment is made for embankment in its final position, no additional quantity will be measured due to settlement, compaction, erosion or other cause.

Excavation and embankment for crossovers, turnouts, driveway approaches or other minor installations will not be included in the measurement. A depth and width tolerance of ± 1.5 feet (± 0.5 m) will be allowed for excavation of unsuitable material. Overdepth and overwidth will be waived at no direct pay; however, no measurement for payment will be made for additional embankment material required to backfill areas beyond theoretical unsuitable material lines.

Measurement will be made by one or more of the following methods:

1. **Plan Quantity:** The quantities of excavation and embankment will be those shown in the plans, provided the project is constructed essentially to the theoretical pay line.

When the plans have been revised or when disagreement exists between the contractor and the engineer as to the accuracy of the plan quantities for the entire project, or any substantial portion thereof, either party may require that quantities be revised. The party requesting the revision will be responsible for isolating and detailing the error in an easily understood format which may include cross sections, sketches, and computations. The revision will be verified and agreed to by

the other party.

No payment will be made to the contractor to recompute new plan quantities.

2. **Final Field Cross Sections:** When payment lines are not shown on the plans and cannot be established, in lieu of final theoretical pay lines, final field cross sections will be used to determine pay quantities for excavation and embankment.
- c. **Borrow Material (Truck Measure):** The material will be measured by the cubic yard in hauling vehicles on the jobsite.
- d. **Ditch Grading:** Ditch grading will be measured by the station along the ditch centerline.
- e. **Excavation and Embankment:** When payment for excavation and embankment is specified to be made on a lump sum basis, this item includes performing all excavation, embankment and grading work necessary for construction of the project. It is the contractor's responsibility to determine the correct quantities of earthwork required to complete this item. No adjustment in contract price will be made due to errors in any estimated earthwork quantities shown on the plans. Payment for any required borrow material will be included in the contract price for this item.
- f. **Geotextile Fabric:** The quantity of geotextile fabric for payment will be the contract quantity, adjusted as required due to plan errors or plan changes.
- g. **Channel Backfill:** The quantity of channel backfill for payment will be the contract quantity, adjusted as required due to plan errors or plan changes.

203-17 PAYMENT: Payment will be made at the contract unit prices.

Payment for undercut and roadway obliteration will be made as "General Excavation". Plastic soil blanket will be included in the pay volume for the embankment. Excavation for plastic soil blanket in cut sections, when required, will be made as general excavation and payment for the required plastic soil blanket will be made as embankment.

203-18 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
2030100	General Excavation	Cubic Yard
2030200	Embankment	Cubic Yard
2030210	Nonplastic Embankment	Cubic Yard
2030300	Borrow Material (Truck Measure)	Cubic Yard
2030400	Channel Excavation	Cubic Yard
2030500	Structural Excavation	Cubic Yard
2030700	Ditch Grading	Station
2030800	Excavation and Embankment	Lump Sum
2030900	Geotextile Fabric	Square Yard
2031000	Channel Backfill	Cubic Yard

PART VII DRAINAGE WORK

SECTION 701 CULVERTS AND STORM DRAINS: (includes items 9900009 & 9900042)

This Section of the Standard Specifications is deleted in its entirety and replaced by the following:

701-1 DESCRIPTION: This work consists of furnishing, installing, and cleaning culverts and storm drains in accordance with these specifications and in conformity with the lines and grades as shown on the plans or as established by the Engineer.

When an item for "Storm Drain Pipe" is included in the contract, the Contractor has the option of furnishing either reinforced concrete pipe or thermoplastic pipe in accordance with Section 1015 unless otherwise specified.

701-2 MATERIALS: Materials shall conform to the following Sections and Subsections:

Bedding Material	1001-9
Backfill Sand	1001-10
Portland Cement Concrete	1005
Reinforcing Steel	1006-1
Joint Systems	1015-1
Reinforced Concrete Pipe	1015-2.1
Reinforced Concrete Pipe Arch	1015-2.2
Thermoplastic Pipe	1015-4
Precast Concrete Box Culvert Units	1017-1
Geotextile Fabric	1022-8

701-2.1 Material Type Abbreviations:

a. Reinforced Concrete Pipe:

- | | |
|---------|-------------------------------|
| 1. RCP | Reinforced Concrete Pipe |
| 2. RCPA | Reinforced Concrete Pipe Arch |

b. Corrugated Metal Pipe:

- | | |
|---------|-------------------------------|
| 1. CAP | Corrugated Aluminum Pipe |
| 2. CAPA | Corrugated Aluminum Pipe Arch |
| 3. CMP | Corrugated Metal Pipe |
| 4. CMPA | Corrugated Metal Pipe Arch |
| 5. CSP | Corrugated Steel Pipe |
| 6. CSPA | Corrugated Steel Pipe Arch |

c. Thermoplastic Pipe:

- | | |
|-----------|--|
| 1. TPP | Thermoplastic Pipe |
| 2. PVCP | Polyvinyl Chloride Pipe |
| 3. RPVCP | Ribbed Polyvinyl Chloride Pipe |
| 4. CPEPSW | Corrugated Polyethylene Pipe Single Wall |
| 5. CPEPDW | Corrugated Polyethylene Pipe Double Wall |

701-2.2 Joint Type Abbreviations:

- | | |
|-------|--------------|
| a. T1 | Type 1 Joint |
| b. T2 | Type 2 Joint |
| c. T3 | Type 3 Joint |

701-3 TRENCHING AND BEDDING:

- a. **Excavation:** Ensure that the sides of the trench excavation are stable, as evidenced by the sides of the trench being able to maintain a vertical cut face. Consider the sides unstable if fissures develop in the face of or adjacent to the open excavation; if the edge of excavation subsides; if material ravel, spalls, or slumps from the face of the excavation; or if the bottom of the excavation bulges or heaves. In all cases of apparent distress or when the trench excavation exceeds five feet in depth, sloping, benching, and shoring will be required in accordance with the OSHA trench safety standards. Unless otherwise permitted, all trench sheeting shall be removed. For pipe installations utilizing trench boxes, do not disturb the installed pipe and its embedment when moving trench boxes. Move the trench box carefully to avoid trench wall displacement or damage. As the trench box is moved, fill any voids left by the trench box and carefully place and compact the backfill material adjacent to and all along the side of the trench box walls.

Control rainfall runoff or excess moisture by dewatering sumps, wells, well points, or other approved procedures during excavation, bedding installation, over-excavated trench backfilling, pipe placement, and pipe backfill.

Trenches shall be excavated to specified width; if not specified, trenches shall be excavated to a width of at least 18" on each side of conduit. Trenches shall be excavated to the depth required accommodate placement of bedding material.

- b. **Over-excavation:** If unsuitable or unstable bearing material is encountered at trench bottom, unstable material shall be excavated as directed and replaced with limestone encapsulated in geotextile fabric. Payment for additional excavation and stone below specified bedding layer under pipe will be made as extra work in accordance with Subsection 10-4.
- c. **Forming Pipe Bed:** Bedding material shall be placed and mechanically compacted in accordance with Standard Plan 701-01. Lifts shall not be more than 6" thick (compacted).

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

701-4 LAYING CONDUIT: Laying shall begin at downstream end of line. Conduit shall be in contact with foundation throughout its length. Bell or groove ends of conduit and outside circumferential laps of corrugated steel pipe shall be placed facing upstream. Riveted seam corrugated steel pipe shall be placed with longitudinal laps at sides. Lift holes shall be plugged with concrete plug wrapped with plastic gasket material (Ramnek) and covered with a minimum 18"x18" geotextile fabric suitably secured to the pipe. Corrugated steel pipe with lifting lugs shall be handled only by the lugs, and those without lugs shall be handled only by rope slings.

After laying pipe and before placing backfill, the Project Engineer will inspect the pipe for alignment, grade, integrity of joints, and coating damage.

701-4.1 Relaying Pipe: When existing pipe is to be re-laid, pipe shall be removed by methods that will not damage pipe and suitable sections re-laid as specified for new pipe.

701-5 JOINTING CONDUIT: For concrete, metal, and plastic pipes, use Types 2 and 3 joints wrapped with geotextile fabric for a minimum of 12 inches on each side of the joint for pipe 36 inches or less in diameter and a minimum of 18 inches on each side of the joint for pipe greater than 36 inches in diameter. Wrap the ends of the fabric around the circumference of the pipe and overlap at least 10 inches. Secure the edges and ends of fabric for the entire circumference of the pipe.

701-5.1 Joint Usage: Type 3 (T3) joints shall be used for all conduits under or adjacent to pavement, including roadway cross drains, side drains, driveway culverts, and storm drain systems.

701-5.2 Concrete Pipe and Precast Box Culverts: Concrete pipe may be either bell and spigot or tongue and groove. Join pipe sections so that ends are fully entered, and inner surfaces are flush and even. Conduit ends shall be cleaned of dirt and other foreign matter and shall be dry. Use an approved mechanical pipe puller for joining pipes over 36 inches in diameter. For pipe 36 inches or less in diameter, use any approved method for joining

pipe that does not damage the pipe.

Joints shall comply with Section 1015. Seal with gasket material installed in accordance with the manufacturer's recommendations.

701-5.3 Corrugated Metal Pipe: Pipe sections shall be joined by coupling bands centered over joint. Coupling bands shall be made of the same base metal and coatings as the pipe. Flexible rubber gasket material shall be placed on entire circumference of pipe under band in 2 corrugations on each side of joint.

- a. **Round Pipe:** Coupling bands shall be secured by 2 rods and lugs on each side of joint.
- b. **Arch Pipe:** For pipe sizes less than 36" round equivalent, 1-piece bands, 12-inch minimum width, shall be used; for larger pipe sizes, 2-piece bands, 21-inch minimum width, shall be used. Bands shall be secured by angle or strap connections.

701-5.4 Plastic Pipe: Joints for plastic pipe shall be bell and spigot or split coupling bands.

- a. **Bell and Spigot Joints:** Gaskets shall be rubber O-rings. Just before jointing, O-ring and gasket seat shall be cleaned of dirt and other foreign material and coated with a flax soap lubricant. Join pipe sections so the ends are fully entered and inner surfaces are flush and even. Use any approved method that does not damage the pipe.
- b. **Split Coupling Joints:** Split coupling bands shall comply with all dimensional and material requirements of Subsection 1015-4.3. Center the bands over the joint. Secure the split coupling band to the pipe with a minimum of five stainless steel or other approved corrosion resistant bands.

Place gasket material in the first two corrugation recesses on each side of the pipe connection. Also place gasket material on each band connection to prevent leakage. When using flexible plastic gasket material, it shall be a minimum of 1/2 inch in size. Tighten the bands to create overlap of the band and adequately compress the gasket material.

701-5.4 Joining New Pipes to Existing Pipes and/or Repairing Existing Pipe Joint Separation: Where the joining of pipes of different materials is required or approved, this work shall be done utilizing special adapters and couplers manufactured specifically for this purpose. The adapters and couplers shall be installed and securely attached to both pipe barrels according to the manufacturer's recommendations. If a coupler is not commercially available, the Contractor may use concrete collars as approved by the Engineer to extend the ends of existing pipes that have been damaged or to join different types or sizes of pipes. A 12-inch-wide strip of Class B, C, or D geotextile fabric shall be wrapped around and centered about the joint of the new and existing pipes. A plywood formed concrete collar shall be poured around and centered about the joint, a minimum two feet wide at a minimum six-inch thickness from outer diameter of pipe. Concrete collar shall be Class 5B3000 concrete mixture and conform to Section 601.

701-6 CAST-IN-PLACE BOX CULVERTS: Cast-in-place reinforced concrete box culverts shall be constructed in accordance with Section 601.

Concrete base slab or footings shall be placed at least 24 hours before wall forms are placed.

For culverts 4 feet or less in height, walls and top slab may be constructed monolithically. Construction joints shall be vertical.

For culverts more than 4 feet in height, concrete walls shall be allowed to set for at least 7 days before top slab is placed.

Each wingwall shall be constructed monolithically.

701-7 BACKFILL: Backfill shall be placed and mechanically compacted in lifts not more than 6" thick (compacted). Cast-in-place box culverts shall not be backfilled until concrete has attained at least 2500 psi compressive strength.

- a. **Conduits Under or Within 5 Feet of Pavement:** Backfill shall be sand or sand aggregate compacted to at least 95% of maximum density determined by DOTD TR 401; however, the top 12" of backfill for conduits not under pavement shall be usable excavated soils or select material.
- b. **Conduits More Than 5 Feet from Pavement:** Backfill may be sand, sand aggregate, usable excavated soils, or select material; however, the top 12" shall be usable soils or select material. Backfill shall be compacted to at least the density of undisturbed surrounding ground.
- c. **Metal Pipe:** Backfill for steel pipe shall have at least 1500 ohm-cm resistivity and a pH of at least 5.
- d. **Pipes Subject to Construction Traffic:** Construct the embankment or pipe backfill to a minimum height of 24 inches over the pipe before allowing heavy construction equipment to cross the installation. Where practical, do not construct installations with less than 24 inches of cover over the top of the pipe until after completing the heavy hauling over the pipe location. After completion of hauling operations, remove excess cover material. Remove and reinstall or replace, pipe damaged by hauling and backfilling operations at no direct pay.

701-8 JACKED OR BORED PIPE:

- a. **General:** Pipes 30" diameter and greater shall be jacked, and pipes less than 30" shall be bored.

Work shall begin at outfall end of pipe when possible. When grade at jacking or boring end is below ground surface, pits shall be excavated for conducting operations and placing joints of pipe. Sheet piling and bracing shall be provided to prevent earth caving.

For pipe with bell joints, if outside bell diameter exceeds outside barrel diameter by more than 1", pipe shall be cased or pressure grouted its full length. Casing shall be an approved type and size.

- b. **Jacking:** Heavy duty jacks for forcing pipe through embankment shall be provided. Even pressure shall be applied to all jacks and shall be transmitted to pipe end through a jacking head designed so that pressure is uniformly applied around ring of pipe. Provide a backstop or jacking frame to adequately resist pressure of the jacks under load.

Pipe shall be set on guides fastened together to support pipe in proper direction at correct grade. Cushioning material, such as plywood, shall be provided between sections of concrete pipe.

Material shall be excavated ahead of pipe and removed through pipe. Excavation shall not extend more than 2 feet beyond forward end of pipe. Distance shall be reduced when necessary to prevent damage to embankment.

A steel cutting edge may be used around forward end of pipe, constructed so that it will transmit pressures uniformly around ring of pipe.

Jacking shall continue without interruption, to prevent pipe from becoming set in embankment.

Pipe shall not vary more than 1/4" in 10 feet from established line and grade. Any variation shall be regular with no abrupt changes in direction. Any pipe damaged or misaligned during the jacking operation shall be removed and replaced by the Contractor at no direct pay.

- c. **Boring:** Boring shall be done mechanically, using a pilot hole approximately 2" in diameter. Pilot hole shall extend through embankment and shall be checked for line and grade before boring begins. Variations from line and grade shall not exceed those specified for jacking. Pilot hole shall serve as centerline of larger diameter hole to be bored.

Use of water and other fluids with boring operations will be permitted only to lubricate cuttings. Jetting will not be permitted.

In unconsolidated soil, a gel-forming colloidal drilling fluid consisting of at least 10% high-grade

bentonite may be used to consolidate cuttings of bit, seal walls, provide support of hole, and furnish lubrication for removal of cuttings and installation of pipe.

Overcutting in excess of 1" shall be remedied by pressure grouting entire length of installation.

701-9 CLEANING PIPES

- a. **Existing Pipes:** Clean designated pipes of soil, debris, and other materials to the invert of the pipe by approved methods that will not damage the pipes. Satisfactorily repair all damage caused by the **cleaning** operations at no direct pay. Dispose of removed soil, debris, and other materials in accordance with subsection 203-8 or as otherwise approved in writing.
- b. **Contractor Installed Pipes:** Prior to final acceptance, clean pipes of all debris and soil to the invert of the pipe at no direct pay. Dispose of removed soil, debris, and other materials in accordance with subsection 203-8 or as otherwise approved in writing.

701-10 STUBBING AND PLUGGING PIPES: Construct pipe plugs with Class 5B3000 concrete complying with Section 1005. Thickness of plug and method of construction shall be a minimum of 18 inches or as directed.

When stubbing new pipes are to be stubbed into new or existing pipes or other structures, make the connection with approved mortar complying with ASTM C1329.

701-11 ACCEPTANCE: After completion of embankment and prior to roadway surfacing, the Project Engineer shall inspect pipes for proper alignment and integrity of joints. Contractor shall correct any misaligned pipe or defective joints at no direct pay.

Prior to final inspection of project, all new and relaid conduit shall be cleaned of debris and soil in accordance with 701-9. Existing conduit which was extended shall also be cleaned of debris and soil within project limits.

701-11.1 Plastic Pipe: Plastic pipe shall not exceed a vertical deflection of more than 5%. Maximum allowable deflections shall be governed by the mandrel requirements stated herein. Perform deflection tests no sooner than 30 calendar days after installation and compaction of backfill. Clean the pipe and inspect for offsets and obstructions prior to testing.

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

Unless otherwise permitted, uncover over-deflected pipe and, if not damaged, reinstall. Do not reinstall damaged pipe. Remove and replace with new pipe. Any pipe subjected to any method or process other than removal, which attempts, even successfully, to reduce or cure any over-deflection, shall be removed and replaced with new pipe.

Use a rigid, nonadjustable, odd-numbered leg (minimum 9 legs) mandrel having a length not less than its nominal diameter or 24 inches, 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 some segment other than a runner. Furnish a suitable carrying case.

For pipe larger than 36 inches in diameter, determine deflection 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.

Conduct mandrel testing in the presence of the engineer. Mandrel testing shall be at no direct pay.

701-11.2 Corrugated 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, remove and reinstall the metal pipes or pipe arches, unless they do not rebound or are damaged. Remove pipes or pipe arches which are damaged or do not rebound; and replace at no direct pay. Measurement of deflection will be made by the engineer away from rerolled ends.

701-12 MEASUREMENT: Quantities of conduit for payment will be the contract quantities, adjusted as required due to plan errors or plan changes.

No measurement for payment will be made for excavation, bedding, geotextile fabric or backfill, except for removal and replacement of unstable foundation material as specified under Subsection 701-3.

Quantities of jacked or bored pipe for payment will be the design lengths as specified on the plans and adjustments thereto. Design quantities will be adjusted if the Project Engineer makes changes to adjust to field conditions, if plan errors are proven, or if design changes are made. Required excavation, sheeting, bracing, falsework, casing, joint materials and grouting will not be measured for payment. Pipe cost is included in the pay item.

Adapter/coupler or concrete collar required to join new pipes to existing pipes shall be measured per each location as identified in the plans.

Cleaning of existing pipes will be measured by the linear foot of pipe cleaned and accepted.

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

701-13 PAYMENT: Payment for concrete or metal pipe will be made at the contract unit price per linear foot for the specified conduit sizes and types, which includes all labor, materials, equipment, tools, and incidentals necessary to complete the work.

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

**Table 701-01
Payment Schedule for Plastic Pipe**

<u>Percent Payment</u>	<u>Stage of Completeness</u>
75	After placement and backfill has been completed
25	After the pipe has met vertical deflection requirements in accordance with 701-11.1

Payment for jacked or bored pipe will be made at the contract unit price per linear foot, which includes all labor, materials, equipment, tools, and incidentals necessary to complete the work.

Payment for adapter/coupler or concrete collar required to join new pipes to existing pipes shall be made per each location as identified in the plans. The cost of the adapter/coupler or concrete collar shall be paid for under the pay item Concrete Collar.

Payment for cleaning existing pipes will be made at the contract unit price per cleaned linear foot.

701-14 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
70101--	--" Storm Drain Pipe	Linear Foot
70102--	--" Reinforced Concrete Pipe	Linear Foot
70103--	--" Reinforced Concrete Pipe Arch	Linear Foot
70104--	--" Reinforced Concrete Box Culvert	Linear Foot
70105--	--" Corrugated Metal Pipe	Linear Foot
70106--	--" Corrugated Metal Pipe Arch	Linear Foot
70107--	--" Polymer Coated Corrugated Steel Pipe	Linear Foot
70108--	--" Polymer Coated Corrugated Steel Pipe Arch	Linear Foot

70109--	__" Thermoplastic Pipe	Linear Foot
7011000	Relaid Pipe	Linear Foot
70111--	__" Jacked or Bored Drain Pipe	Linear Foot
9900009	Concrete Collar	Each
9900042	Cleaning Existing Pipes	Linear Foot

SECTION 702 DRAIN MANHOLES, INLETS, JUNCTION BOXES AND END TREATMENTS:

This Section of the Standard Specifications is deleted in its entirety and replaced by the following:

702-1 DESCRIPTION: This work consists of constructing and adjusting storm drain manholes, inlets, junction boxes, and culvert end treatments, and safety ends in accordance with these specifications and in conformity with lines and grades shown on the plans.

702-2 MATERIALS: Materials shall conform to the following Sections and Subsections:

Bedding Material	1001-9
Backfill Sand	1001-10
Portland Cement Concrete (Class 6A4000)	1005
Reinforcing Steel	1006-1
Brick	1010-1
Frames, Grates and Covers	1011-5
Metalwork Paint	1012-4
Plastic Gasket Material	1015-1
Precast Concrete Drainage Units	1017

The Contractor may furnish structures of either cast-in-place concrete or precast concrete units.

702-3 CONSTRUCTION:

- a. **General:** Excavation shall extend 18" from outside of structure on all sides. Remove all logs, stumps, and other undesirable material. Structures shall be set on a 6" compacted thickness of bedding material if foundation soil is stable; if foundation soil is unstable, unstable soil shall be removed as directed and replaced with bedding material, and payment therefore will be made as extra work in accordance with Subsection 10-4. Bedding material shall be compacted in accordance with Subsection 701-3. At time structure is placed, excavation shall be dry.

Pipes shall be flush with inside walls of structure and project outside sufficiently for proper connection with the next conduit section. Completed new or adjusted structures shall be cleaned of dirt and debris.

- b. **Brick Structures:** Brick structures shall only be allowed when specifically shown on the plans or as directed by the Project Engineer.

Concrete foundations for brick structures shall be constructed in accordance with Section 601 and shall be placed 24 hours before brickwork is begun. Brick shall be clean, wetted immediately before laying, and laid on a full mortar bed. Joints between courses of bricks shall be a uniform thickness of 3/8". If new work is to be joined to existing or unfinished work, contact surfaces shall be cleaned and moistened.

No water shall be permitted to stand or run on brickwork until mortar has set. Inside and outside surfaces of structure shall be plastered with 1/2" thick mortar.

- c. **Concrete Structures:** Cast-in-place concrete structures shall be constructed in accordance with Section 601.

Drainage structures shown on the plans are based on cast-in-place construction. Precast concrete structures may be substituted by the Contractor, however any modifications of precast units or inability to use precast units due to field conditions that otherwise can be installed by cast-in-place methods shall be the sole responsibility of the Contractor. No additional compensation shall be given to the Contractor due to modification or elimination of preordered precast units.

Precast concrete structures shall be manufactured in accordance with Section 1017.

Joints between precast concrete units shall be sealed with flexible plastic gasket material.

Prior to installing gasket materials, the gasket seat shall be cleaned of dirt and other foreign matter and shall be dry. At temperatures below 60°F, gasket material shall be heated before installation.

- d. **Pipe Connections:** At pipe connections with structure, a 1/2" diameter bead of hydrophilic elastic sealant shall be placed around pipe at center of structure wall and also along center of wall opening. Space between pipe and wall shall then be grouted up from both sides of wall.

For cast in place drainage structures: Use non-shrink grout for pipe connections to concrete drainage structures, unless otherwise shown on Drawings. Grout pipe penetration in place on both inside and outside of drainage structures.

For precast drainage structures: Provide watertight connections in accordance with ASTM C 923 and ASTM F 2510 as applicable.

- e. **Safety End Treatments:** Furnish and install safety ends on cross drains and roadside culverts in accordance with these specifications, plans and as directed. Cast-in-place concrete structures shall be constructed in accordance with Section 601. Bolt pipe runners in place as shown on the plans. Cast bolts into the plastic concrete or place in approximately one inch diameter holes and epoxy in place using an approved anchor system.
- f. **Adjusting Structures:** If grade adjustment of existing structures is required, frames, covers and gratings shall be removed, and structure walls reconstructed as specified for new work. Frames, covers and grates shall be cleaned and placed in good repair (or replaced, if specified), and reset at required elevation.

Structures may also be adjusted with metal adjusting rings connected to existing ring by either welding at least 30% of circumference or by using an epoxy system designed for metal-to-metal adhesion.

- g. **Frames, Covers and Grates:** Frames shall be set in a full mortar bed. Nongalvanized parts shall be coated with jet black metalwork paint satisfactory to the Project Engineer.
- h. **Backfill:** Backfill shall be placed in accordance with the plan details and in lifts not more than 8" thick (loose). With approval of the Project Engineer, layer thickness may be increased to 12 inches with verification of satisfactory installation and performance.
1. Paved Areas (within 5 feet of roadway): Backfill shall be sand or sand aggregate (bedding material) and compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D698.
 2. Nonpaved Areas: Backfill can be sand, sand aggregate or usable soils and be compacted to at least the density of undisturbed surrounding ground.

Dispose of excavated material not satisfactory for backfill and surplus material in accordance with Subsection 203-8.

702-4 MEASUREMENT: New and adjusted inlets, manholes, junction boxes, and safety end treatments will be measured per each. Trench drains will be measured by the linear foot.

702-5 PAYMENT: Payment will be made at the contract unit prices, which includes excavation, bedding and backfill.

702-6 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
70201--	Single Curb Inlet (Type)	Each
70202--	Double Curb Inlet (Type)	Each
70203--	Single Grate Inlet (Type)	Each
70204--	Double Grate Inlet (Type)	Each
70205--	Weir Inlet (Type)	Each
7020600	Yard Drain Inlet	Each
70207--	Drain Manhole (Type)	Each
70208--	Junction Box (Type)	Each
70209--	Trench Drain (_ " Width)	Linear Foot
7021000	Adjusting Drain Manholes, Inlets and Junction Boxes	Each
7022100	Cross Drain Safety End Treatment	Each
7022200	Culvert Safety End Treatment	Each

PART VIII SANITARY SEWER WORK

Delete this part in its entirety and replace with the following:

SECTION 801 EXCAVATION, BACKFILLING, AND COMPACTION FOR SANITARY SEWERS AND RELATED STRUCTURES

801-1 DESCRIPTION: This Work shall include, but not necessarily be limited to, excavation and trenching operations to install pipe, manholes, pump stations, and other structures and all related work such as shoring, bracing, water handling, and miscellaneous clearing and grubbing; filling and grading under and around sanitary sewer structures; and all backfilling, compaction, grading, import of backfill material, disposal of surplus and unsuitable materials.

801-2 GENERAL:

- a. All work shall be performed in compliance with L.R.S. 40:1749.11-22, "Louisiana Underground Utilities and Facilities Damage Prevention Law", OSHA regulations and applicable codes, ordinances, and standards of governing authorities having jurisdiction.
- b. Open excavations, including incomplete manholes and pump stations, shall be barricaded and posted with operating warning lights in accordance with Federal, State and local requirements.
- c. Public and private structures, utilities, driveways, sidewalks, pavements, and other facilities shall be protected from damage caused by settlement, lateral movement, undermining washout, construction activities, and other hazards created by these operations. All settlement or other damage caused by the Contractor's operations shall be repaired within 7 days, or the facilities shall be replaced, at the Contractor's sole expense and at the discretion and direction of the Engineer. This includes the warranty period as well.

801-3 MATERIALS:

a. Definitions:

1. **Sanitary Sewer Bedding/Backfill Materials:** Bedding and initial backfill material shall be a sand-aggregate mixture. The aggregate shall be free of angular stones that could score, crack, or puncture the pipe. The sand-aggregate mixture shall meet the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2 inch	100
3/8 inch	90-100
No. 4	25-95
No. 10	15-45
No. 40	10-35
No. 200	0-10

2. **Usable Excavated Soils:** Usable excavated soils shall have a maximum PI of 25 and a maximum organic content of 5 percent. Soils with a silt content of 50 percent or greater and also a PI of 10 or less will not be allowed. Soil shall be tested at Owner's option by the Owner's testing lab. Usable excavated material may be neatly stockpiled at the site where designated by the Engineer provided there is an area available that will not interfere with the Owner's access nor inconvenience traffic or adjoining property owners.
3. **#610 Stone Backfill:** The 610 Stone shall be one hundred percent quarried material. The stone shall pass the ASTM soundness test and abrasion test. Soundness loss shall not exceed

fifteen percent when subjected to five cycles of the magnesium sulfate soundness test in accordance with AASHTO 104. The stone shall show an abrasion loss of not more than forty percent when tested in accordance with AASHTO 96. The 610 Stone backfill shall meet the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1-1/2 inch	100
1 inch	90-100
3/4 inch	70-100
No. 4	35-65
No. 40	12-32
No. 200	5-12

4. **#57 Stone Backfill:** The stone shall be one hundred percent quarried material. The stone shall pass the ASTM soundness test and abrasion test. Soundness loss shall not exceed fifteen percent when subjected to five cycles of the magnesium sulfate soundness test in accordance with AASHTO 104. The stone shall show an abrasion loss of not more than forty percent when tested in accordance with AASHTO 96. The 57 Stone backfill shall meet the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1-1/2 inch	100
1 inch	90-100
1/2 inch	25-60
No. 4	0-10
No. 8	0-5
No. 200	0-1

5. **Imported Clay Fill:** Where shown on the Drawings or as directed by the Engineer, clay shall be imported from a borrow site approved by the Engineer. Soils meeting the Unified Soil Classification CL and free of organic material are acceptable clay fill. The clay material shall have the following properties:

- i. Maximum Liquid Limit of 50
- ii. Maximum Plasticity Index of 30
- iii. Organic content less than 5%.

6. **Geotextile Fabric:** The geotextile fabric shall consist of a nonwoven geotextile fabric Class B, C, or D, as contained in the latest edition of the LADOTD QPL.

7. **Controlled Low-Strength Material (CLSM):** CLSM shall consist of Type I Portland Cement, Class C or F Fly Ash, sand, and water in the following proportion per cubic yard:

- i. Portland Cement 50 pounds
- ii. Fly Ash – Class C or F 125 pounds
- iii. Sand 2900 pounds
- iv. Water 50 to 65 gallons

Mixing and hauling equipment shall conform to Section 1005.

8. **Select Imported Material:** Selected soils are natural soils with a maximum PI of 20, maximum Liquid Limit of 35, and a maximum organic content of 5 percent. Soils with a silt content of 50 percent or greater and also a PI of 10 or less will not be allowed. Any select material used to supplement or replace unusable excavated soil shall meet these requirements and must be approved by the Engineer.

9. **Granular Material:** Granular material shall be non-plastic and siliceous material, and shall comply with the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2 inch	100
No. 10	75-100
No. 200	0-10

- b. **General:** The Contractor shall notify the Engineer of the source of each material. At the request of the Engineer, the Contractor shall furnish for testing and approval a representative sample of each material weighing approximately fifty (50) pounds, at least ten (10) calendar days prior to the date of anticipated use of such material.

Select materials shall be furnished as required from approved off-site sources and hauled to the site. Disposal of unsuitable material is specified in Section 801-7.

- c. **Structural Fill:** Structural fill shall be used below spread footing foundations, slab-on-grade floors, and other portions of structures. Structural fill material shall be as defined on the drawings. If not defined elsewhere in the Contract Documents acceptable structural fill materials are non-expansive clay with a Plasticity Index between 10 and 25, a maximum Liquid Limit of 45, less than 5% organics, and free of degradable material or debris. Well-graded crushed stone aggregate such as an ASTM D1241 gradation C stone may also be acceptable.

Any structural fill material encountered during the excavation may be stored in segregated stockpiles for reuse. All material that, in the opinion of the Engineer, is not suitable for reuse shall be handled as specified herein for disposal of unsuitable materials.

- d. **Trench Backfill:** Backfill methods for trenches, as shown on the Contract Documents, are classified into three zones, bedding, initial backfill, and secondary backfill. Bedding and initial backfill material shall be the sand-aggregate mixture as described in Section 801-3.a.1. Secondary backfill material shall be as follows:

In locations where any part of the trench pay limit (as defined on the Contract Documents) falls under existing asphaltic or PCC roadways and/or existing parking lots, the secondary backfill shall be:

1. #610 Stone material in dry trenches,
2. #57 Stone in wet trenches or in wet trench bottoms,
3. #610 Stone material above the groundwater line in wet trenches,
4. CLSM when shown on the Contract Documents or as directed by the Engineer.

In locations where any part of the trench pay limit (as defined on the Contract Documents) falls within 10 feet of an existing major structure foundation, the edge of an existing road/shoulder/back of curb, or under the limits of a future asphaltic or PCC roadway/parking lot to be constructed subsequent to sanitary sewer installation; the secondary backfill shall be the sand-aggregate mixture as described in Section 801-3.a.1. In these situations the sand-aggregate material shall be placed and compacted to within 3.5 feet of the surrounding grade, and usable excavated soils or select imported fill shall be placed and compacted for the remainder of the backfill to surrounding or specified grade.

In areas outside those described above, secondary backfill material shall consist of usable excavated soils supplemented by select imported fill or the materials listed above to replace unsuitable excavated soil.

- e. **Manhole and Pump Station Bedding and Backfill:** Bedding material used below base

foundations of manhole and pump station structures shall be #57 stone material, encapsulated in geotextile fabric. The material shall be placed in maximum 12 inch lifts with each lift rodded and vibrated to orient the stone and eliminate voids to create uniform bedding support for the pipe.

The manhole and pump station structures shall be backfilled with granular material or as specified on the Plans. In the case of manholes within existing or planned roadways alignments, the granular material shall be placed and compacted to within 2 feet of the surrounding grade, and #610 stone shall be placed and compacted for the remainder of the backfill to surrounding or specified grade. In the case of manholes located in unimproved surface areas, the granular material shall be placed and compacted to within 2 feet of the surrounding grade, and useable excavated soil shall be placed and compacted for the remainder of the backfill to surrounding or specified grade.

- f. **Geotextile Fabric:** In trenches requiring the use of #57 Stone, this material shall be encapsulated in geotextile fabric. Geotextile fabric shall be class B, C, or D.
- g. **Controlled Low-Strength Material (CLSM):** CLSM shall be used to backfill trenches where shown on the Drawings or as directed by the Engineer.

801-4 PRE-INSTALLATION INSPECTION PROCEDURE: Prior to the start of any pipe laying activities, the Contractor shall perform proposed pipe installation procedures for inspection purposes at the location shown on the Drawings or as determined by the Engineer. Contractor shall submit all relevant submittals, and have received approval from Engineer prior to scheduling of pre-installation inspection procedure. The purpose of this inspection is to demonstrate how the trench will be excavated, the bedding will be placed, and the initial and secondary backfill placed and compacted. In addition, at the time of the final surface restoration for paved areas, a mock-up pavement restoration sample will be performed. At least one mock-up will be performed for each type of pavement restoration (asphalt and PCC) required on the Project. This mock-up will demonstrate how the pavement will be restored in accordance with the Contract Documents and serve as the standard required for all remaining pavement restoration for the Project.

- a. At a minimum, the following pre-installation inspections are required:
 - 1. Linear pipeline projects – Contractor shall lay first 200 linear feet of pipe.
 - 2. Rehabilitation projects – Contractor shall perform first 4 point repairs (2 under pavement and 2 outside of pavement). Also first 200 linear feet of removal and replacement of pipe.
- b. The pre-installation inspection procedure shall be as follows:
 - 1. Contractor shall schedule timing of the pre-installation inspection with the Engineer and provide a minimum 72 hour notice prior to inspection.
 - 2. Contractor shall layout pavement removal limits in agreement with the Engineer and perform pavement removal as specified.
 - 3. Contractor shall excavate trench as specified.
 - 4. Pipe bedding shall be placed and compacted in bottom of trench as specified.
 - 5. Pipe sections shall be placed on pipe bedding in trench as specified.
 - 6. Initial and secondary backfill shall be placed and compacted as specified. The in-place density shall be measured after each lift of initial and secondary backfill as specified. Additional lifts of initial and secondary backfill shall not be placed until the previous lift has met the specified density. If tests on a lift of backfill show that the specified density is not obtained, the Contractor shall increase the amount of coverages, decrease the lift thicknesses

or obtain a different type of compactor until the specified densities are obtained.

7. The Contractor shall demonstrate to the Engineer precautions taken to maintain the compaction of the backfill when moving the trench box.
 8. Pipe deflection shall be measured 48 hours after the completion of backfilling. The maximum deflection shall be as specified. If the pipe deflection exceeds the specified deflection, the installation shall be judged to not meet this Section and the Contractor shall repeat the pre-installation inspection procedure.
 9. After concurrence of the procedures, the Contractor may continue work. The Contractor shall use the pipe pre-installation procedure, which no exception was taken by the Engineer, for the installation of the pipeline. If during the course of work, it is determined that the established procedure is not producing the specified results, the Contractor shall repeat the pre-installation inspection procedure to determine a new installation procedure which will produce the desired results and is acceptable to the Engineer. The Contractor shall repeat as many times as necessary, the pre-installation inspection procedure at no cost to the Owner.
 10. The Contractor shall submit in writing to the Engineer, the established procedure in such detail that it can be followed and repeated consistently by any personnel change that may occur throughout the project. Any change to the established procedure, including but not limited to means, methods, or equipment shall require another successful pre-installation inspection procedure and revised detailed procedure write-up before additional pipe installation.
- c. Contractor shall schedule timing of the pavement restoration mock-up with the Engineer and provide a minimum 72 hour notice prior to mock-up. Contractor shall remove temporary surfacing and base, install and finish permanent pavement restoration as specified. After concurrence of the procedures and final pavement restoration product, the Contractor may continue pavement restoration work. This mock-up pavement restoration will serve as the established standard for all remaining pavement restoration for the Project.

801-5 PLACEMENT OF FILL:

- a. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills.
- b. Material placed in fill areas shall be deposited within the lines and to the grades shown on the Contract Documents or as directed by the Engineer, making due allowance for settlement/shrinkage of the material. Fill shall be placed only on properly prepared surfaces that have been inspected and approved by the Engineer. If sufficient fill material is not available from excavation on site, the Contractor shall provide select material as may be required.
- c. Fill shall be brought up in substantially level loose lifts of maximum of eight (8) inches in depth and compacted throughout the site, starting in the deepest portion of the fill. During the process of dumping and spreading, all roots, debris, and other objectionable material shall be removed from the fill areas. The entire surface of the Work shall be maintained free from ruts and in such condition that construction equipment can readily travel over any section. All fill materials shall be placed and compacted "in-the-dry."
- d. Where trench backfill and compaction work is following pipe laying or where the entire area of the backfilling cannot be completed with full area lifts, the trench backfill will be benched.
 1. Benches shall be a maximum of three lifts tall.
 2. Benches shall be separated by a minimum 8 foot horizontal distance.

- e. If the compacted surface of any layer of material is determined to be too smooth to bond properly with the succeeding layer, it shall be loosened by harrowing or by another approved method before the succeeding layer is placed.
- f. Fill shall not be placed against concrete structures until they have been in place a minimum of fourteen (14) days or have been shown to reach a minimum of 75% of their design compressive strength.

801-6 EXCAVATION: Excavation consists of removal and handling of material encountered when establishing required grade elevations in accordance with the Contract Documents.

- a. **Trench Excavation:** Excavation of trenches required for the installation of pipes and ducts shall be made to the depths required to accommodate placement of bedding material as shown in the Contract Documents. Widths shown on the Contract Documents are the established pay limits. Actual trench widths may be adjusted to provide appropriate room for bracing, supporting, and dewatering facilities if necessary based on Contractor's means and methods with prior approval of the Engineer however, established pay limits will remain as shown on the Contract Documents. Excavation outside the established pay limits shown in the Contract Documents shall be at no additional cost to the Owner.
- b. **Additional Excavation:** When excavation has reached required subgrade elevations, notify the Engineer or his representative who will make an inspection of conditions. If unsuitable, unsatisfactory bearing materials are encountered at the required subgrade elevation, carry excavation deeper and replace the additional excavated material with #57 Stone wrapped in geotextile fabric or CLSM as directed by the Engineer. Sand-aggregate bedding shall then be placed and compacted over the #57 Stone separated by the geotextile fabric or placed and compacted over the CLSM.

Removal of unsuitable material and its replacement as directed beyond the authorized limits will be paid on the basis of the Contract Documents and in accordance with Section 10.

- c. **Excavation for Pipelines, Manholes, Pump Stations and Structures:** Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection, or as shown on the Contract Documents.

Care shall be taken not to disturb the bottom of excavation. Trim bottoms to required lines and grades to leave solid base to receive required bedding material. The pipe or duct shall be evenly supported on the bedding material. Bell holes shall be made as required.

The bottom of the excavations shall be firm and dry. Sides of excavations are to be maintained in a safe condition until the completion of backfilling.

801-6.1 Shoring and Bracing in Excavations:

- a. The Contractor shall be fully responsible for designing, constructing, and maintaining cofferdams consisting of shoring and bracing, as required, to support the sides of excavations to prevent any movement which could in any way reduce the width of the excavation below that necessary for proper construction, and to protect adjacent structures, existing utilities, and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the shoring, but if voids are formed they shall be immediately filled with suitable material (either useable excavated soils or selected imported material if approved by Engineer), compacted by hand or mechanical means to condition judged visually comparable to condition of adjoining native soil.

- b. As part of the submittal of schedules and other data indicating the plan of Work, the Contractor shall provide drawings of the planned supporting system (including the sequence of installation and removal). This submittal is not for review by the Engineer but for informational purposes only. The Engineer shall use the schedule in tracking the progress of the Work. The drawings shall be stamped by a Professional Engineer licensed in the State of Louisiana and be of sufficient detail to adequately disclose the method of operation that the Contractor plans to use for each of the various stages of construction. The Work shall not begin until such drawings are reviewed and any questions posed by the Engineer have been adequately addressed by the Contractor.
- c. Wooden trench shoring for pipes is not to be withdrawn when driven below mid-diameter of any pipe, and no wood shoring shall be cut off at a level lower than two (2) feet above the top of any pipe or no more than two (2) feet below natural ground, unless otherwise directed by the Engineer.
- d. All steel trench shoring and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, existing utilities, existing piping, or personnel and property. Care shall be taken not to disturb or otherwise injure any finished facility. All voids left or caused by withdrawal of shoring shall be immediately refilled with **Sanitary Sewer Bedding/Backfill Materials as defined herein** and rammed/compacted with tools especially adapted for that purpose, by hydraulic compaction, or as otherwise directed.
- e. The right of the Engineer to order shoring and bracing left in place shall not be construed as creating any obligation on the Engineer's part to issue such orders. In addition, the Engineer's failure to exercise this right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or on the Work occasioned by negligence or other cause, growing out of a failure on the part of the Contractor to leave in place sufficient shoring and bracing to prevent any caving or moving of the ground.
- f. The Contractor may construct the cofferdams and shoring outside the neat lines of the foundation for pipes and manholes, unless indicated otherwise, to the extent deemed desirable for the planned method of operation so long as it does not encroach on areas outside the limits of the Work. Shoring shall be plumb and securely braced and tied in position. Shoring, bracing, and cofferdams shall be adequate to withstand all pressures to which the existing or new structure or excavation will be subjected. Pumping, bracing, and other work within the cofferdam shall be done in a safe manner and shall avoid disturbing any completed construction. The Contractor shall provide the necessary clearances and dimensions to correct any movement or bulging that may occur.
- g. The Contractor shall maintain shoring and bracing in excavations regardless of time period excavations will be open, and shall carry down shoring and bracing as excavation progresses.
- h. As an alternate to shoring, the Contractor is authorized to utilize an OSHA approved mechanical trench box or slide-rail system, the size and construction of which shall be designed for the intended depth/loads. Documentation of the trench box or slide-rail system shall be submitted to the Engineer for informational purposes only.

801-6.2 Dewatering, Drainage and Flotation:

- a. The Contractor shall furnish all materials and equipment and perform all work required to install and maintain the drainage systems necessary for handling groundwater and surface water encountered during construction of structures, pipelines, and compacted fills. The Contractor is responsible for providing temporary power for any pumping operation that may be required.
- b. The Contractor is responsible for complying with the requirements and obtaining necessary permits of all agencies having jurisdiction and control over use of groundwater and matters affecting well installation, water discharge, and use of existing storm drains and natural water sources. Because the review and permitting process may be lengthy, the Contractor is required

to take early action to pursue and submit for the required approvals so that construction is not delayed beyond that represented to the Engineer.

- c. Prior to excavation, the Contractor shall submit detailed drawings and design calculations descriptive of the proposed means and method of dewatering and maintaining dry conditions to the Engineer. This submittal shall be prepared and sealed by a professional engineer licensed in the State of LA. The Contractor shall be responsible for the satisfactory performance of the system and for correcting any disturbance of natural bearing of soils or damage to structures caused by the dewatering system or by interruption of the continuous operation of the system as specified.
- d. The Contractor shall construct and place all pipelines, concrete work, structural fill, bedding, and base course in-the-dry (no standing water in the trench). In addition, the Contractor shall make the final twenty-four (24) inches of excavation for this work in-the-dry, and not until the groundwater level is a minimum of twelve (12) inches below proposed bottom of excavation. The Contractor shall provide means and methods to control the potential for excavation base instability from either excess hydrostatic water pressures or basal heave in the design of their shoring system.
- e. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to promptly remove and dispose of all water entering excavations and shall keep such excavations dry to obtain a satisfactory undisturbed subgrade foundation condition. Dewatering shall be required until the fill, structure, or pipes to be built have been completed to the extent that they will not be floated or otherwise damaged by allowing water levels to rise or return to natural elevations.
- f. Wellpoints or larger wells may be required, with the approval of the Engineer, for predrainage of the soils prior to final excavation for deeper below-ground structures or piping, and for maintaining the lowered groundwater level. If so, this system shall be designed by a professional engineer licensed in the State of LA. A copy of the subsurface characterization, calculations, layout, and narrative descriptive of operation through removal and/or abandonment shall be submitted for information and comment. After comment has been offered and questions answered, the Contractor may proceed with installation. Wellpointing and larger wells shall be maintained until construction has been completed to such an extent that the structure, pipeline, or fill will not be floated or otherwise damaged. Wellpoints or larger wells shall be surrounded by suitable filter sand and no fines shall be removed by pumping. The Contractor may be required to demonstrate the adequacy of the proposed system and filter sand by means of a test installation at the direction of the Engineer. Discharge water shall be clear, with no visible soil particles in a one-quart sample.
- g. If requested by the Engineer, the Contractor's proposed method of dewatering shall include a minimum of two (2) each 2-inch diameter, Schedule 40 PVC operating groundwater observation wells, with factory slotted screen and appropriate sand pack. The observation wells shall be screened within each stratum to be dewatered at each structure as directed by the Engineer. A bentonite seal and grout shall be provided above the screened depth to the surface. Observation wells are to be used to determine/monitor the water level during construction of the structure. Locations of the observation wells shall be at structures and along pipelines as approved by the Engineer and at no additional cost to the Owner. During backfilling and construction, water levels shall be measured in observation wells at frequencies as directed by the Engineer. Contractor shall be responsible for maintaining and repairing/replacing damaged observation wells during the project. Removal or abandonment of observation wells shall be as directed by the Engineer.
- h. While dewatering for new construction in the vicinity of existing structures, depletion of the groundwater level underneath these existing structures may cause settlement of within the site footprint and at some distance beyond the footprint. To avoid this settlement, the groundwater level under these structures shall be maintained by appropriate methods. In conditions where dewatering in excess of 20 gpm for over 24 hours is anticipated, a professional engineer

specializing in geotechnical engineering should evaluate the potential for settlements created by dewatering that may be detrimental to existing structures. This evaluation should include an investigation of the specific soil and groundwater conditions to a depth of at least 2 times the depth of the excavation including the permeability and compressibility of the various soil strata (either by direct measurement or by empirical methods), an interpretation of the water table drawdown at the location of any potentially affected structure(s), the duration of the dewatering program, and the resulting amount of settlement that will be created at the structure(s).

801-7 DISPOSAL OF UNSUITABLE AND SURPLUS MATERIAL: If at the time of excavation it is not possible to place any material in its proper section of the permanent structure, it shall be stockpiled in approved areas for later use. No extras will be considered for the stockpiling or double handling of excavated material. Unsuitable and surplus excavated materials, unless specified otherwise, shall become the property of the Contractor. Contractor shall remove and dispose of unsuitable or surplus material off of the project site at an appropriate disposal site approved by the Engineer. Unsuitable material includes all paving removed for the Work.

801-8 BACKFILLING AROUND STRUCTURES, MANHOLES, PUMP STATIONS AND PIPELINES:

- a. All backfill shall be placed in layers having a maximum thickness of eight (8) inches in loose state and shall be compacted as specified in 801-9 of this Section.
- b. Backfilling shall be carried up evenly on all walls of an individual structure simultaneously. No backfill shall be allowed against walls until the walls and their supporting slabs, if applicable, have attained sufficient strength as described previously. Backfilling shall be subject to approval by the Engineer.
- c. Backfilling shall be carried up evenly on both sides of the pipeline. Contractor shall take special care to ensure proper support, compaction and elimination of voids under the haunches of the pipe.
- d. In the case of trenches across or along roadways with open ditch drainage refer to subsection 801-11c for backfill and protection of roadside ditch sloped areas.
- e. In locations where pipes pass through structure walls, the Contractor shall take the following precautions to consolidate the backfilling up to an elevation of at least one (1) foot above the bottom of the pipes:
 1. Place sand-aggregate bedding and initial backfill in such areas for a distance of not less than three (3) feet either side of the centerline of the pipe in level loose layers not exceeding eight (8) inches in thickness. Compact each layer.
 2. Place and thoroughly compact adjacent layers simultaneously.
- f. The final finished surface of filled areas shall be graded to smooth, true lines, strictly conforming to grades indicated on the grading plan, and no soft spots or uncompacted areas will be allowed in the Work.
- g. Temporary bracing shall be provided as required during construction of all structures to protect partially completed structures against all construction loads, hydraulic pressure, and earth pressure. The bracing shall be capable of resisting all loads applied to the walls as a result of backfilling. Contractor shall take precautions as to not disturb the compaction of the backfill when removing the bracing.
- g. Controlled Low Strength Material placement will cause hydrostatic uplift pressure on the pipe in cases where bedding and initial backfill material may not be used. Therefore, the Contractor shall anchor the pipe to remain on its intended alignment and grade. Contractor shall submit to the Engineer a pipe anchorage plan for the use of CLSM backfill. The plan shall include at a

minimum:

1. Anchor/ballast material,
2. Size and weight of each,
3. Required spacing
4. Dams to confine the CLSM

At a minimum the anchorage shall be located at the pipe joints and midpoints. The anchoring/ballasting system shall be designed and stamped by a Professional Engineer licensed in the State of Louisiana. In addition to the anchorage system the CLSM shall be placed in incremental lifts around the pipe. Each lift shall be allowed to attain partial set before placing the next lift. The recommended incremental lifts are as follows:

1. First lift = $1/4$ pipe outer diameter (OD)
2. Second lift = $1/3$ OD
3. Third lift placed to the pipe crown
4. Remainder of backfill may be placed in one lift

Anchoring system is not required when bedding and initial backfill material is used in accordance with Standard Plan 801-01.

801-9 COMPACTION:

- a. **General:** Contractor shall control soil compaction during construction and obtain the minimum required percentage of the maximum dry densities as specified herein and as shown on the Contract Documents. **Soil compaction with a backhoe bucket or any other heavy apparatus not designed specifically for soil compaction is not allowed.** The Contractor shall maintain the backfill for a period of one year after Final Acceptance and shall restore any backfill that fails and repair any pavement or other structures, which may be damaged as a result of backfill failure. It shall be the Contractor's responsibility to notify the Engineer in writing that the compaction tests as required can be performed.

The frequency for density tests will be a minimum of one test per lift per 100 linear feet of trench excavation and one randomly selected test per 2,500 square feet of excavation for open areas. If the density tests indicate that the Work does not meet specified density requirements, the Engineer may require additional density tests to determine the extent of the deficient Work at the Contractor's expense. The Contractor will not be allowed an extension of Contract Time as a result of any density testing. The Contractor shall be required to remove, replace and compact deficient Work at no additional cost to the Owner.

It is the Contractor's responsibility to provide equipment and labor as needed to achieve the required compaction as specified herein. Should the rates of compaction fall below the values specified herein; the Engineer has the right to instruct the Contractor to alter his work and/or to provide different equipment to assure that the required backfill quality is consistently achieved. Any decision by the Engineer to forgo such instructions shall in no way relieve the Contractor of his responsibility to provide backfill of the specified quality.

- b. **Percentage of Maximum Density Requirements:** Compact subgrade, and fill materials to not less than the following percentages of maximum dry density as determined in accordance with ASTM 698, the Standard Proctor Test.

1. **Structural Fill below Spread Footing Foundations, Slabs-on-Grade, and other Portions of Structures:** Structural fill shall be placed in horizontal lifts not exceeding eight-inch (8") loose thickness, or less if necessary to obtain proper compaction. Moisture content shall be within 3% of optimum as determined in accordance with ASTM D698, with stability present. Clay structural fill shall be compacted full depth to a minimum of 95 percent of the maximum dry density. Granular structural fill, with less than 5% passing the No. 200 Sieve shall be compacted full depth to at least 75% of the relative density as determined by ASTM D4253 and D4254.
2. **Manholes, Pump Stations, Structures, and Buildings:** Areas adjacent to structures shall be compacted with vibratory mechanical compaction equipment approved by the Engineer. Compact eight-inch (8") loose lifts to a minimum of 95 percent of the maximum dry density as determined by ASTM D698. Moisture content of backfill material shall be within 3% of optimum as determined in accordance with ASTM D698. Granular backfill, with less than 5% passing the No. 200 Sieve, shall be compacted to at least 75% of the relative density as determined by ASTM D4253 and D4254.

The #57 stone bedding shall be placed in maximum 12" loose lifts, rodded and vibrated to orient the stone and eliminate voids to create uniform bedding support for the pipe, with the material compacted to 100% of the material's maximum dry rodded weight in accordance with ASTM C29.

3. **Compaction of Bedding and Initial Backfill Material:** Bedding and initial backfill shall be compacted. Compact eight-inch (8") loose lifts to a minimum of 95 percent of the maximum dry density as determined by ASTM D698. Bedding material will be rodded and vibrated to orient the stone and eliminate voids to create uniform bedding support for the pipe. Bedding material will not be compacted until rodding is complete. Moisture content of bedding and initial backfill material shall be within 3% of optimum as determined in accordance with ASTM 698.
4. **Compaction of Backfill Directly Under Existing Pavements:** Secondary backfill directly under existing pavements (roadways and parking lots) shall be #610 Stone material and placed in loose layers of eight (8) inches and compacted. Backfill shall be compacted with vibratory compaction equipment to not less than 95 percent of the maximum dry density as determined by ASTM D698. Moisture content of backfill material shall be within 3% of optimum as determined in accordance with ASTM 698.
5. **Compaction of Backfill Near Existing Structures and Pavements or Directly Under Future Pavements:** Secondary backfill within 10 feet of an existing structure foundation, the edge of an existing road/shoulder/back of curb, and/or directly under the limits of a future asphaltic or PCC roadway/parking lot to be constructed subsequent to sanitary sewer installation shall be bedding and initial backfill (sand-aggregate) material. In this situation the sand aggregate material shall be placed and compacted to within 3.5 feet of the surrounding grade, and usable excavated soils or select imported fill for the remainder of the backfill to surrounding or specified grade. Both materials shall be placed in loose layers of eight (8) inches and compacted. All backfill shall be compacted with vibratory compaction equipment to not less than 95 percent of the maximum dry density as determined by ASTM D698. Moisture content of backfill material shall be within 3% of optimum as determined in accordance with ASTM 698.
6. **Unsuitable Subgrades or Wet Trench Bottoms:** If trench bottoms contain unsuitable subgrades, muck bottoms, or wet bottoms that cannot be pumped dry, then at the direction of the Engineer, #57 Stone encapsulated in geotextile fabric, shall be used in accordance with the Standard Detail 801-01. #57 Stone shall be placed and compacted in lifts suitable to provide a suitable, non-yielding working surface for the required construction operations.

7. **Compaction of All Other Backfill:** Where a trench is in open ground and the backfill is not influenced by loading conditions, secondary backfill shall be as shown on the Contract Documents and compacted in loose layers of eight (8) inches and compacted to a minimum 90 percent of the maximum dry density. If the Contractor is unable to dry the excavated soil to an appropriate moisture content in order to achieve the required rate of compaction, he shall request authorization from the Engineer to deem the excavated soil as unusable and replace with imported select material for backfill. The final surface shall be left in a condition equal to that originally found at the start of the Work. The backfill shall be finished over the trench flush with the ground surface. The Contractor will add backfill material monthly during the contract duration and during the warranty period to compensate for settlement and erosion.
- c. **Moisture Control:** Contractor shall condition subgrade or fill material to moisture content sufficiently near optimum to accommodate compaction meeting the required percent compaction. When the material is too dry to be compacted efficiently, the Contractor shall uniformly apply water to soil material and thoroughly mix the soil to achieve moisture content near the optimum level to facilitate compaction. Contractor shall remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
- d. Incidental compaction due to traffic by construction equipment will not be credited toward the required minimum compaction as required for any material.

801-10 GRADING:

- a. **General:** Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades as are required or shown on the Contract Documents.
- b. **Grading Outside Building Lines:** Grade areas adjacent to building lines, as shown on the Drawings, to drain away from structures and to prevent ponding. Finish surface free from irregular surface changes and to within not more than 0.10 feet above or below the required elevation.
- c. **Grading Surface of Fill under Building Slabs:** Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of one-half inch when tested with a ten (10) foot straightedge.
- d. During the process of excavation, the grade shall be maintained in such condition that it will be well drained at all times. When directed by the Engineer, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the prosecution or condition of the Work.
- e. The Engineer reserves the right to make adjustments or revisions in lines or grades if found necessary as the Work progresses, in order to obtain satisfactory construction.

801-11 MAINTENANCE:

- a. **Protection of Graded Areas:** Protect newly graded areas from traffic and erosion. Keep areas free of trash and debris and repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- b. **Protection of Sloped Areas:** If a fill section or backfilled trench zone falls within a sloped area then Contractor shall place an erosion control blanket over the slope. Areas requiring an erosion control blanket shall be approved prior to placement. After materials are placed and spread,

lumps, stones, roots and other foreign matter shall be removed from the area. Erosion control blanket shall be placed in a timely manner to prevent erosion. Payment for the erosion control blanket shall be in accordance with Section 903.

- c. **Protection of Roadside Ditch Sloped Areas:** In the case of roadways with open ditch drainage - when any portion of a sewer (sanitary or storm) excavation trench limit falls within 1 foot inside or 5 feet outside the pavement edge the Contractor shall place and compact Imported Clay Fill for the length of the trench excavation as shown on the Roadside Ditch Slope Stability Treatment Detail included at the end of this Section.

After placement and compaction of the clay material, a layer of topsoil shall be placed on the slope. The topsoil shall be seeded and fertilized in accordance with subsection 903-3.2.1. Once the topsoil has been seeded and fertilized the Contractor shall overlay the topsoil with an Erosion Control Mat in accordance with subsection 903-3.2.4. The Contractor shall maintain existing roadside slopes, ditch side slopes and ditch flow lines by undercutting existing grades for placement of the clay fill and topsoil. The cost of the topsoil, seeding, and erosion control matting shall be included in the Imported Clay Fill pay item.

- d. **Reconditioning Compacted Areas:** Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

801-12 MEASUREMENT:

- a. **Sewer Point Repair Excavation, Backfill, and Compaction:** Measurement for the excavation, bedding, backfill and compaction for each sewer line point repair shall be made on a linear foot basis, measured to the nearest whole foot, for the depths listed under this Item of the Bid Form. Payment for excavation on each sewer point repair will be based on the actual length of main line pipe replaced plus one (1) additional foot of excavation on each end, up to and including twenty-two (22) feet in length. When tying into a manhole, measurement will be based on the actual length of main line pipe replaced (from outside face of manhole) plus one (1) additional foot of excavation on one end only. The other end will be paid for under the Bid Item for connection to existing manhole. Any additional excavation, authorized by the Engineer, beyond the twenty-two (22) foot sewer point repair excavation limit will be paid for under the Sewer Remove and Replace Excavation, Backfill, and Compaction Bid Item.

The depth will be the average of measurements taken every twenty (20) feet, or as determined by changes in ground elevation, measured from ground elevation to the pipe invert along the horizontal centerline of the existing pipe. Trench width shall be as specified in the Contract Documents.

- b. **Sewer Remove and Replace Excavation, Backfill, and Compaction:** Measurement for the excavation, bedding, backfill, and compaction for each sewer line remove and replacement as designated in the Contract Documents, shall be made on a linear foot basis, measured to the nearest whole foot, for the depths listed under this Item of the Bid Form. Payment for excavation will be based on the actual length of main line pipe replaced plus one (1) additional foot of excavation on each end. When tying into a manhole, measurement will be based on the actual length of main line pipe replaced (from outside face of manhole) plus one (1) additional foot of excavation on one end only. When tying into a manhole on both ends, measurement will not include one (1) additional foot of excavation on either end that is tied into the manhole. It will be paid for under the Bid Item for connection to existing manhole.

The depth will be the average of measurements taken every 25 feet, or more often as determined by changes in ground elevation, measured from ground elevation to the pipe invert along the horizontal centerline of the existing pipe. Trench width shall be as specified in the Contract

Documents.

- c. **Sewer Service Lateral Excavation, Backfill, and Compaction:** Measurement for the excavation, bedding, backfill, and compaction for sewer service laterals shall be made on a linear foot basis, measured to the nearest whole foot, from the edge of the mainline trench pay limit of excavation, bedding, backfill, and compaction to the end of the each sewer service lateral repair. The additional footages on the ends do not apply to sewer service laterals.
- d. **#57 Stone Backfill:** Measurement for #57 stone backfill shall be the in-place measure of the number of cubic yards of limestone required to be used as needed and as authorized by the Engineer due to unsuitable material encountered in the trench bottom.
- e. **#610 Stone Backfill:** Measurement for #610 stone backfill shall be the in-place measure of the number of cubic yards of backfill required to be used as needed and as authorized by the Engineer.
- f. **Select Material for Backfill:** The Contractor shall use all such usable excavated soils available from excavations made in this Contract prior to supplying select material from other sources. Measurement for select material for backfill shall be the in-place, compacted measure of the number of cubic yards of select material required to be used as needed and as authorized by the Engineer. Select material does not include transporting, placing, and compacting usable excavated soils from excavations made in the Contract.

Select material used to fill voids resulting from unauthorized excavation outside the established pay limits, or where required for dewatering, shall not be measured for payment even though the Engineer ordered their use.

- g. **Imported Clay Fill:** Measurement for this item shall be the in-place measure of the number of cubic yards of imported clay fill required to be used as needed and as authorized by the Engineer.
- h. **Controlled Low Strength Material:** Measurement for CLSM will be by the cubic yard from plant batch tickets.
- i. **Sand-Aggregate for Secondary Backfill:** Measurement for sand-aggregate mixture for secondary backfill shall be the in-place measure of the number of cubic yards of secondary backfill required to be used as needed and as authorized by the Engineer.

801-13 PAYMENT:

- a. **Sewer Point Repair Excavation, Backfill, and Compaction:** Payment for this Item will be full compensation for miscellaneous clearing and grubbing, traffic control, trench excavation, trench dewatering, shoring and bracing, bedding, backfilling, compaction, restoring the trench surface to grade, top soiling, test pits, and driving and removing shoring and bracing, in accordance with the Contract Documents. Sand-aggregate for bedding and initial backfill material and useable excavated soil for secondary backfill, as shown on City-Parish Standard Detail 801-01 shall be included in this pay item. When required, special bedding and backfill material such as #57 Stone Backfill, #610 Stone Backfill, CLSM Backfill, Sand-Aggregate for Secondary Backfill, and Select Material for Backfill required for Work associated with Sewer Pipe will be paid for under the relative pay item. Sewer pipe and fittings required for sewer point repairs will be paid for under the relative pay item in Section 802.
- b. **Sewer Remove and Replace Excavation, Backfill, and Compaction:** Payment for this Item will be full compensation for miscellaneous clearing and grubbing, traffic control, trench excavation, trench dewatering, shoring and bracing, bedding, backfilling, compaction, restoring the trench surface to grade, top soiling, test pits, and driving and removing shoring and bracing, in accordance with the Contract Documents. Sand-aggregate for bedding and initial backfill material and useable excavated soil for secondary backfill, as shown on City-Parish Standard

Detail 801-01 shall be included in this pay item. When required, special bedding and backfill material such as #57 Stone Backfill, #610 Stone Backfill, CLSM Backfill, Sand-Aggregate for Secondary Backfill, and Select Material for Backfill required for Work associated with Sewer Pipe will be paid for under the relative pay item. Sewer pipe and fittings required for sewer point repairs will be paid for under the relative pay item in Section 802.

- c. **Sewer Service Lateral Excavation, Backfill, and Compaction:** Payment for this Item will be full compensation for miscellaneous clearing and grubbing, traffic control, trench excavation, trench dewatering, shoring and bracing, bedding, backfilling, compaction, restoring the trench surface to grade, top soiling, test pits, and driving and removing shoring and bracing, in accordance with the Contract Documents. Sand-aggregate for bedding and initial backfill material and useable excavated soil for secondary backfill, as shown on City-Parish Standard Detail 801-01 shall be included in this pay item. When required, special bedding and backfill material such as #57 Stone Backfill, #610 Stone Backfill, CLSM Backfill, Sand-Aggregate for Secondary Backfill, and Select Material for Backfill required for Work associated with Sewer Pipe will be paid for under the relative pay item. Sewer pipe and fittings required for sewer point repairs will be paid for under the relative pay item in Section 802.
- d. **#57 Stone Backfill:** Payment for this Item will be full compensation for geotextile fabric and #57 stone backfill furnished transported, placed, and compacted as shown in the Contract Documents and not specifically included under other Bid Items.
- e. **#610 Stone Backfill:** Payment for this Item will be full compensation for #610 stone backfill furnished transported, placed, and compacted as shown in the Contract Documents and not specifically included under other Bid Items.
- f. **Select Material for Backfill:** Payment for this Item will be full compensation for select material furnished from sources other than excavations made in this Contract, transported, placed, and compacted as ordered by the Engineer and not specifically included under other Bid Items. No payment will be made for usable excavated soil obtained from excavations made in this Contract.
- g. **Imported Clay Fill:** Payment for this Item will be full compensation for imported clay material, transported, placed, and compacted as ordered by the Engineer. The cost of the topsoil, seeding, and erosion control matting associated with the Roadside Ditch Slope Stability Treatment shall be included in the included in this pay item.
- h. **Controlled Low Strength Material:** Payment for this Item will be full compensation for CLSM backfill, including pipe anchorage, furnished, transported and placed as ordered by the Engineer.
- i. **Sand-Aggregate for Secondary Backfill:** Payment for this Item will be full compensation for sand-aggregate mixture required as secondary backfill furnished transported, placed, and compacted as shown in the Contract Documents and not specifically included under other Bid Items.

801-14 PAY ITEMS:

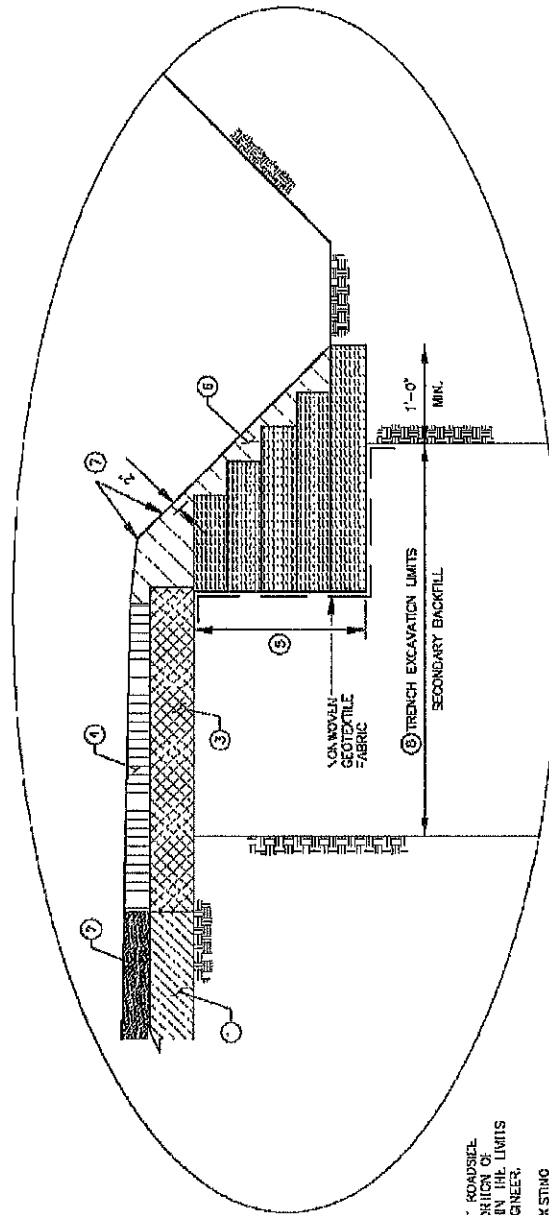
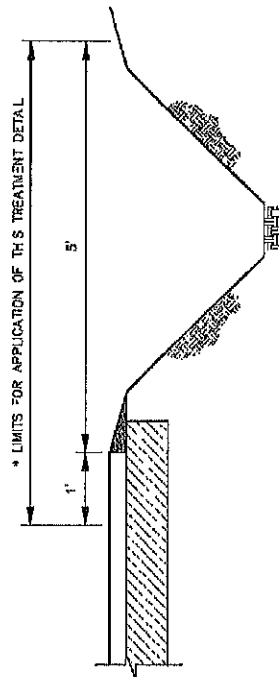
Trench Depth Schedule

0	=	0	-	6	Feet
1	=	6.1	-	8	Feet
2	=	8.1	-	10	Feet
3	=	10.1	-	12	Feet
4	=	12.1	-	16	Feet
5	=	16.1	-	20	Feet
6	=	20.1	-	24	Feet

7	=	24.1	-	28	Feet
8	=	28.1	-	32	Feet
9	=	32.1	-	36	Feet

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
801100_	Sewer Point Repair Excavation, Backfill, and Compaction (_ ' - _ ' depth)	Linear Foot
801200_	Sewer Remove and Replace Excavation, Backfill, and Compaction (_ ' - _ ' depth)	Linear Foot
8012100	Sewer Service Lateral Excavation, Backfill, and Compaction	Linear Foot
8013000	#57 Stone Backfill	Cubic Yard
8013100	#610 Stone Backfill	Cubic Yard
8013200	Select Material for Backfill	Cubic Yard
8013300	Imported Clay Fill	Cubic Yard
8013400	Controlled Low Strength Material	Cubic Yard
8013500	Sand-Aggregate for Secondary Backfill	Cubic Yard

- ① EXISTING PAVEMENT BASE TO REMAIN
- ② EXISTING ASPHALTIC CONCRETE SURFACING TO REMAIN
- ③ REQUIRED FULL DEPTH ASPHALT CONCRETE BASE (PG 64-22)
- ④ REQUIRED ASPHALT TO CONCRETE SURFACING (TYP B MIX, 2"6-76-77M) 4" MIN. DEPTH)
- ⑤ REQUIRED COMPACTED CLAY, 8" LOOSE LIFTS. THE COST OF IMPORTING, PLACING, AND COMPACTING THE CLAY SHALL BE INCLUDED IN THE PRICE PER CUBIC YARD FOR IMPORTED CLAY FILL
- ⑥ REQUIRED TOPSOIL (SEEDED PER SPECIFICATION SECTION 903)
- ⑦ REQUIRED EROSION CONTROL BLANKET
- ⑧ SEWER PIPE REPAIR EXCAVATION (SEE STANDARD PLAN 801-01)



NOTES:

1. CONTRACTOR SHALL CONSTRUCT "ROADSIDE DITCH TREATMENT" WHEN ANY PORTION OF "TRENCH EXCAVATION" FALLS WITHIN THE LIMITS SHOWN, OR AS DIRECTED BY ENGINEER.
2. CONTRACTOR SHALL MAINTAIN EXISTING ROADSIDE SLOPES AND DITCH INVERTS.
3. PLACEMENT AND COMPACTION OF CLAY, TOPSOIL (INCLUDING SEED), AND EROSION CONTROL BLANKET SHALL BE INCLUDED IN THE IMPORTED CLAY FILL PAY ITEM.

ROADSIDE DITCH SLOPE STABILITY TREATMENT DETAIL

N.T.S.

SECTION 802 GRAVITY SEWER PIPE

802-1 DESCRIPTION: This Work shall consist of furnishing all labor, materials, equipment, and incidentals required to remove and dispose of existing gravity sewer pipe if required, perform point repairs, remove and replace repairs and install new gravity sanitary sewer lines and fittings.

802-2 MATERIALS: Materials shall conform to the following Sections and Subsections:

- | | |
|---------------------------------------|----------|
| a. Plastic Pipe | 1016-1.1 |
| b. Ductile Iron Pipe | 1016-1.2 |
| c. Steel Pipe | 1016-1.3 |
| d. Fiberglass Reinforced Polymer Pipe | 1016-1.4 |

When a foreign manufactured material is proposed for use, have material tested for conformance to applicable ASTM requirements by certified independent testing laboratory located in the United States. Certification from any other source is not acceptable. Furnish copies of test reports to the Engineer for review. Cost of testing shall be borne by the Contractor.

Contractor shall provide sewer pipes with the inside diameter shown on the Contract Documents. Diameters shown on the Drawings and listed in the pay items represent the required inside diameters, regardless of pipe material.

When an item for gravity "Sewer Pipe" is included in the contract, the Contractor has the choice to select from the following list of pipe materials in accordance with the specified inside diameters:

- Less than 18" (inside diameter) – PVC, HDPE and Ductile Iron
- 18" up to but not including 21" (inside diameter) – PVC, HDPE, Ductile Iron, or FRP
- 21" up to and including 24" (inside diameter) – PVC, HDPE, FRP, Ductile Iron, or Large Diameter Closed Profile PVC
- 27" up to and including 54" (inside diameter) – HDPE, FRP, Large Diameter Closed Profile PVC, or Ductile Iron
- Greater than 54" (inside diameter) – FRP or Ductile Iron

802-3 SUBMITTALS:

- a. The Contractor shall submit to the Owner prior to receiving the Notice to Proceed at the pre-construction meeting, a list of materials to be furnished and the names of the suppliers.
- b. The Contractor shall submit for approval, complete, detailed shop drawings of all pipe and fittings.
- c. The Contractor shall submit and shall comply with the pipe manufacturer's recommendations for handling, storing and installing pipe and fittings.
- d. The Contractor shall submit pipe manufacturer's certification of compliance with these Contract Documents.

802-4 CONSTRUCTION:

802-4.1 Open Trench: Trenching construction consists of trench excavation, bedding, laying of pipe on grade, backfill, compaction, grading and incidentals in accordance with Section 801.

802-4.1.1 Pipe Laying: Pipe shall be handled, stored, and laid in accordance with the manufacturer's instructions and as specified as follows:

- a. During pipe laying, trenches shall be kept dry. After each day's operations, and at other times

when pipe laying is discontinued for more than one (1) hour, ends of the pipe shall be capped or plugged until pipe laying is resumed.

- b. Pipe laying shall not advance backfilling by more than 100 feet without approval by the Engineer.
- c. The pipes and fittings shall be so laid in the trench that after the sewer is completed, the interior surface of the bottom thereof shall conform accurately to the line and grade shown in the Contract Documents. Pipe laying shall begin at downstream end of line. Bell or groove ends of pipe shall be placed facing upstream. Bell holes shall be excavated to assure that only the pipe barrel shall bear upon the trench bedding material. No blocking under the pipe will be permitted.
- d. Extreme care shall be used when handling and installing pipe and fittings. Under no circumstances shall pipe or fittings be dropped either into the trench or during unloading. The interior of the pipe shall be thoroughly cleaned of oil, dirt, and foreign matter, then closely inspected for damage to coatings, walls, bells, gaskets, and ovality. Nonconforming or damaged pipe, gaskets, or coatings shall not be installed.
- e. When necessary to cut and machine all pipe in the field, the appropriate tools as recommended by the pipe manufacturer, shall be used. A "full insertion mark" shall be provided on each field cut pipe end. Field-cut pipe shall be beveled with a beveling tool specifically made for the pipe material.
- f. The Contractor shall make every effort to conform to the line and grade of the plans. The grade shown on the Plans is that of the invert to which the Work must conform. The Owner reserves the right to make adjustments to the grades and slopes to fit actual field conditions.
- g. After completion of pipe installation, no sag in the line greater than the maximum allowed sag tolerances noted in the Standard Plan 802-01 shall be acceptable. Any section of pipe that does not conform to these specifications shall be replaced or re-laid at the contractor's expense.

802-4.1.2 Pipe Jointing: The jointing of the pipe shall be done in strict accordance with the pipe manufacturer's instructions and shall be done entirely in the trench. Joints and gaskets shall comply with Subsection 802-2 and the relative pipe material. Workmen who are certified by the pipe manufacturer to join the pipe shall only perform pipe jointing. They should perform the work as follows:

- a. Expend extreme care to keep the bells of the pipe free from dirt and rocks so joints may be properly assembled without overstressing the bells.
- b. Provide lubricant, place and drive home newly laid sections. Use of backhoes or similar powered equipment will not be allowed unless protective measures are provided and approved in advance by the Engineer.
- c. Install pipe to "full insertion mark" where provided.

802-4.2 Trenchless: Trenchless construction consists of technologies and methods utilized for installing sewer pipelines and services with minimal surface disruption and destruction resulting from excavation. Trenchless Construction shall conform to the following sections:

Pipe Bursting	811
Jacked & Bored Pipe / Casing	817
Horizontal Directional Drilling	818

802-4.3 Remove and/or Abandonment of Existing Gravity Sewer Pipe: This section addresses the removal and/or abandonment of the existing gravity sewer pipe and all appurtenances which are being removed (or abandoned) as detailed on the Contract Documents.

- a. **Abandon Sewer Pipe:** If an existing sewer pipe is shown to be abandoned in place on the Contract Documents, the Contractor shall be responsible for evacuating or "swabbing" the existing sewer pipe of all sewage before it is abandoned. This sewage shall be treated as hazardous material and disposed of using the proper criteria from the La. Department of Environmental Quality. Subsequently, the entire length of the pipe shall be filled with flowable fill and capped as noted on the Drawings or as directed by the Engineer.
- b. **Plug and Abandon Sewer Pipe:** If an existing sewer pipe is shown to be plugged and abandoned in place on the Contract Documents, the Contractor shall be responsible for evacuating or "swabbing" the existing sewer pipe of all sewage before it is abandoned. This sewage shall be treated as hazardous material and disposed of using the proper criteria from the La. Department of Environmental Quality. Subsequently, the pipe shall be plugged approximately 18 inches into each end of the pipe and capped as noted on the Drawings or as directed by the Engineer.
- c. **Remove Sewer Pipe:** If an existing sewer pipe is shown to be removed on the Contract Documents, the Contractor shall completely remove the sewer pipe. The removal trench shall be backfilled in accordance with the provisions of Section 801 or as directed by the Engineer. The Contractor shall be responsible for evacuating or "swabbing" the existing sewer pipe of all sewage before it is removed. This sewage shall be treated as hazardous material and disposed of using the proper criteria from the La. Department of Environmental Quality.
- d. **Remove and/or Abandon Sewer Pipe:**
 1. If an existing sewer pipe is shown as remove and/or abandon in place on the Contract Documents, the Contractor has the option to either completely remove the sewer pipe or abandon the sewer pipe. The Contractor shall be responsible for evacuating or "swabbing" the existing sewer pipe of all sewage before it is abandoned or removed. This sewage shall be treated as hazardous material and disposed of using the proper criteria from the La. Department of Environmental Quality.
 2. If removed, the removal trench shall be backfilled in accordance with the provisions of Section 801 or as directed by the Engineer.
 3. If abandoned, the entire length of the pipe shall be completely filled with flowable fill.

802-5 NEW PIPE-EXISTING PIPE CONNECTIONS: Connections between existing and new pipe, with the exception of HDPE pipe, shall be jointed with non-shear repair couplings conforming to ASTM C425 and ASTM C1173. The stainless steel shear rings and clamping bands used in conjunction with the molded rubber sleeve shall conform to ASTM A 240 Series. When using the non-shear repair coupling, the gap between the two pipes shall be no more than 1/4".

When non-shear repair couplings are not available for a particular size or material, connections between existing and new pipe shall be jointed using flexible elastomer couplings with a 300 stainless steel band for each end and adjusting screws capable of sustaining an applied torque in excess of 80 inch-pounds. When dissimilar pipe materials are joined, the Contractor shall use flexible couplings that are resistant to the corrosive action of the soils and sewage, and that provide a permanent watertight joint.

Connections between existing and new HDPE pipe shall be jointed with HDPE electrofusion couplings in accordance with subsection 1016-1.1.2. Prior to ordering materials, Contractor shall check existing pipe diameters and take care to provide matching pipe and coupling to make proper connection.

802-6 PIPE-MANHOLE CONNECTIONS: All sewer pipe shall be connected to new manholes with either flexible rubber boot connectors or integrally cast flexible connectors installed in accordance with the manufacturer's instructions. Then the opening on the inside and outside of the manhole shall be grouted (non-shrink) if necessary, to achieve a watertight seal.

For existing manhole connections, pipe shall be connected with a hydraulic cement material having a set time of no more than two (2) minutes; compressive strength of 600 psi at one (1) hour, 1,000 psi at twenty-four (24) hours; bond of 40 psi at one (1) hour, 80 psi at twenty-four (24) hours. These requirements apply whether it is a connection to an existing sanitary sewer manhole or connections through a storm water conflict manhole, junction box, or inlet.

In the case of HDPE pipe, in addition to the flexible manhole connectors and non-shrink grout, electrofusion flex restraints shall be permanently attached to the pipe to prevent movement. HDPE flex restraints shall be in conformance with subsection 1016-1.1.2.

802-7 SERVICE LATERAL CONNECTIONS: Connections between the existing service lateral and the new/rehabilitated sewer main line shall be in accordance with the Contract Documents. Existing sewer service lateral and house connections shall be adjusted as required avoiding conflicts with the new Work. New pipe and fittings shall be furnished and installed as necessary and in accordance with the Contract Documents.

- a. Service lateral connections located within the limit of a rehabilitation method or repair are required to be replaced (regardless of construction method) in both directions up to the property line with a clean-out and pad installed at the property line. Construction shall be in accordance with the appropriate typical drawings in the Contract Documents. The exception to this is with service lateral connections on mainlines to be rehabilitated with CIPP lining. In this case, unless a point repair or remove and replace repair is shown on the plans, service lateral connections on mainlines to be CIPP lined will receive a lateral connection sealing and repair product (top hat) in accordance with Sections 808 and 809.
- b. Service lateral vertical connection stacks shall be required in accordance with the Contract Documents.
- c. New service lateral terminations, required prior to private service connection and cleanout installation, shall be required in accordance with the Contract Documents and stubbed a minimum of 3 feet above ground and capped.
- d. In association with mainlines previously rehabilitated with CIPP lining:
 1. Connections between the service lateral and a main line, which has previously been repaired by a CIPP lining process, shall be made with six (6)-inch Flexible saddle wyes with corrosion resistant series 300 stainless steel clamps capable of sustaining an applied torque of 60 inch-pounds. In cases where a vertical stack is repaired, the PVC saddle wye shall be used in place of the flexible wye.
 2. Host pipe shall be removed to expose the full circumference of the CIPP liner around the wye connection, to allow for installation of the saddle with a sealant product such as Hydrophilic Water Stop. The interface between pipe and CIPP liner shall be sealed around the entire circumference of the wye connection with an approved non-shrink grout.
- e. In association with Slip Lining:
 1. After the liner pipe has been inserted in the host pipe, given the appropriate relaxation period, and secured in the upstream and downstream manhole, all existing services shall be reconnected. A portion of the host pipe, at the liner pipe around each service

connection shall be removed to expose the liner pipe to provide adequate working space for making the new service connection. The Contractor shall reconnect the services to the liner pipe using compressive-fit service connections such as Inserta-Tee or approved equal.

2. Prior to backfilling, the portion of the host pipe removed for service reconnection shall be sealed to preclude migration of the backfill material into the annular space or loss of grout material during grouting of the annular space between the liner pipe and host pipe. This area may be sealed with an approved non-shrink grout or the portion of host pipe removed may be replaced and grouted.

f. In association with HDPE (HDPE Pipe or Lining Material):

1. The method of saddle connection to the main line shall be by Gasketed Electrofusion Branch Saddles by Central Plastics, or approved equal in conformance with subsection 1016-1.1.2. Personnel certified by a manufacturer of polyethylene pipe in the proper methods of installing electrofusion fittings shall carry out installation of electrofusion saddles in strict conformance with the manufacturer's printed instructions. Installation shall include all equipment, labor, materials, and incidentals. Saddle material shall be compatible with the main line pipe or lining material.

802-8 ACCEPTANCE TESTS FOR NEW PIPE: Installed sewer lines shall pass one or more of the following tests performed by the Contractor as directed by the Engineer. Contractor shall perform the test in the presence of the Engineer or his representative. Contractor shall coordinate testing with surface restoration requirements of Section 4-5. Any removal or replacement of temporary or final surface restoration by the Contractor to investigate leaks shall be done so at no additional cost to the Owner.

802-8.1 Leakage Tests: Sewer lines shall be tested for leakage as follows:

Low Air Pressure Test - manhole to manhole reach of pipe for sewer pipe 36" in diameter and smaller; individual joints for sewer pipe larger than 36" in diameter

Infiltration Test - for sewer pipe greater than 36" in diameter with groundwater equal to or greater than 2 feet above top of pipe (with approval of Engineer)

Exfiltration Test - for sewer pipe greater than 36" in diameter with groundwater less than 2 feet above top of pipe (with approval of Engineer)

802-8.1.1 Low Air Pressure Test: This practice defines the proper procedures for acceptance testing of installed gravity sewer pipe using low-pressure air, to provide assurance that the pipe, as installed, is free from significant leaks. Included are requirements for equipment accuracy, safety precautions, line preparation, test method, and minimum holding times. Applicable sections of ASTM F1417 shall also apply.

a. For Pipes 36" in Diameter and less (Manhole to Manhole Reach)

1. Only lines tested after backfilling to final grade will be considered for acceptability. Acceptance will be dependent on a passing test. However, the installer as a presumptive test to determine the condition of the line prior to backfilling may also use this test. During sewer construction, all service laterals, stubs and fittings into the sewer test section shall be properly capped or plugged to prevent air loss that could cause an

erroneous air test result. It may be necessary and is always advisable for the Contractor to restrain gasketed caps, plugs, or short pipe lengths with bracing stakes, clamps, and tie-rods or wire harnesses over the pipe bells.

2. Unless otherwise specified, the Contractor shall furnish all the necessary equipment and be responsible for conducting all low-pressure air tests. In addition, the Contractor shall be responsible for any necessary repair work on sections that do not pass the test at no additional cost to the Owner.
3. The Engineer shall witness all low-pressure air tests and verify the accuracy and acceptability of the equipment utilized. The Engineer will inform the Contractor regarding acceptable methods of repair in the event one or more sections fail to pass the low-pressure air test.
4. Ensure that all plugs are installed and braced to prevent blowouts. As an example of the hazard, a force of 250 pounds is exerted on an 8-inch plug by an internal pipe pressure of 5 psig, and a force of 2,250 pounds is exerted on a 24-inch plug by an internal pressure of 5 psig. The Contractor must realize that sudden expulsion of a poorly installed plug, or of a plug that is partially deflated before the pipe pressure is released, can be very dangerous. For this reason, it is recommended that every plug be positively braced against the manhole walls, and that no one be allowed in the manhole adjoining a line being tested while as pressure is maintained in the line.
5. Internal pressure of more than 9 psig shall not be permitted except for leak location equipment where the plugs are firmly tied together. Contractor should verify maximum allowable pressure recommended by pipe manufacturer.
6. Use either mechanical or pneumatic plugs. All plugs shall be designed to resist internal testing pressures without the aid of external bracing or blocking. However, the Contractor shall internally restrain or brace the plugs to the manhole wall as an added safety precaution throughout the test.
7. Air test gauges shall be laboratory-calibrated test gauges, and if required by the Engineer, shall be recalibrated by a certified laboratory prior to the leakage test. Air gauges shall have a size and pressure range appropriate for the pipe being tested.
8. All pressurizing equipment used for low-pressure air testing shall include a regulator or relief valve set no higher than 9 psig to avoid over-pressurizing and displacing temporary or permanent plugs. As an added safety precaution, the pressure in the test section should be continuously monitored to make certain that it does not, at any time, exceed 9 psig. (It may be necessary to apply higher pressure at the control panel to overcome friction in the air supply hose during pressurization.)

9. To facilitate test verification by the Engineer, all air used shall pass through a single, above ground control panel. The aboveground air control equipment shall include a shut-off valve, pressure relief valve, input pressure gauge, and a continuous monitoring pressure gauge having a pressure range from 0 to at least 10 psi. The continuous monitoring gauge shall be no less than 4 inches in diameter with minimum divisions of 0.10 psi and an accuracy of plus or minus 0.04 psi. Two separate hoses shall be used to: 1) connect the control panel to the sealed line for introducing low-pressure air, and 2) a separate hose connection for constant monitoring of air pressure build-up in the line. This requirement greatly diminishes any chance for over-pressurizing the line.
10. If pneumatic plugs are utilized, a separate hose shall also be required to inflate the pneumatic plugs from the above ground control panel.
11. After a manhole-to-manhole reach of pipe has been backfilled to final grade and compacted, prepared for testing, and a 24-hour waiting period has elapsed, the plugs shall be placed in the line at each manhole and secured.
12. The Contractor is advised to seal test all plugs before use. Seal testing may be accomplished by laying one length of pipe on the ground and sealing it at both ends with the plugs to be checked. The sealed pipe should be pressurized to 9 psig. The plugs shall hold against this pressure without bracing and without any movement of the plugs out of the pipe. No persons shall be allowed in the alignment of the pipe during plug testing. It is advisable to plug the upstream end of the line first to prevent any upstream water from collecting in the test line. This is particularly important in high groundwater situations.
13. When plugs are being placed, the pipe adjacent to the manhole shall be visually inspected to detect any evidence of shear in the pipe due to differential settlement between the pipe and the manhole. A probable point of leakage is at the junction of the manhole and the pipe, and this fault may be covered by the pipe plug, and thus not revealed by the air test.
14. Low-pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig. If the groundwater table is above the sewer being tested, the air pressure shall be increased 0.43 psi for each foot that the water table is above the invert of the sewer, up to a maximum of 9.0 psig. After a constant pressure of 4.0 psig (greater than the average groundwater back pressure) is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.
15. When temperatures have been equalized and the pressure stabilized at 4.0 psig (greater than the average groundwater backpressure), the air hose from the control panel to the air supply shall be shut off or disconnected. The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig (greater than the average backpressure of any groundwater over the pipe). At a reading of 3.5 psig, timing shall commence with a stopwatch.

16. If the time shown for the designated pipe size and length (see Table 8-1 1.0 PSIG Air Test Pressure Drop) elapses before the air pressure drops 0.5 psig, the section undergoing test shall have passed. The test may be discontinued once the prescribed time has elapsed even though the 0.5 psig drop has not occurred. If the pressure drops 0.5 psig before the appropriate time shown in Table I has elapsed, the air loss rate shall be considered excessive and the section of pipe has failed the test.
17. If the section fails to meet these requirements, the Contractor shall determine at their own expense the source, or sources, of leakage, and shall repair or replace all defective materials or workmanship to the satisfaction of the Engineer. The extent and type of repair, which may be allowed, as well as results, shall be subject to the approval of the Engineer. The completed pipe installation shall then be retested and required to meet the requirements of this test.

TABLE 8-1
1.0 PSIG Air Test Pressure Drop

Pipe Diameter	Minimum Time Lapse (min:sec)							
<i>Inch</i>	<i>100 ft</i>	<i>150 ft</i>	<i>200 ft</i>	<i>250 ft</i>	<i>300 ft</i>	<i>350 ft</i>	<i>400 ft</i>	<i>450 ft</i>
4	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33

b. For Pipes Larger than 36" in Diameter (Individual Joint Testing):

1. Individually test each sewer pipe joint with an approved joint air testing apparatus to an air pressure of 4.0 psig. If the groundwater table is above the sewer being tested, the air pressure shall be increased 0.43 psi for each foot that the water table is above the invert of the sewer, up to a maximum of 9.0 psig unless otherwise restricted by pipe manufacturer's recommendation.
2. The testing apparatus shall be positioned within the pipe in such a manner as to straddle the joint to be tested.
3. The apparatus packer ends shall be expanded so as to isolate the joint from the remainder of the pipe and create a void area between the packer and the pipe joint. The ends of the testing device shall be expanded against the pipe in accordance with the manufacturer's recommendations.

4. After void pressure is observed to be equal to or greater than the required test pressure, the air flow shall be stopped. If the void pressure drops by more than 1.0 psi within 15 seconds, the joint will have failed the test.
5. Upon completing the testing of each individual joint, the packer shall be deflated with the void pressure meter continuing to display void pressure. Contractor shall note and record the pressure display reading before each joint test. Should the void pressure meter fail to drop to 0.0 (± 0.5) psig, Contractor shall make necessary equipment repairs to provide for an accurate void pressure reading.

802-8.1.2 Infiltration Test: Where the natural groundwater is 24 inches or more above the top of a section of pipe, the Contractor shall measure the flow of water in the pipe and the rates of seepage and infiltration. Contractor shall measure the flow rate by using a calibrated weir. The Contractor shall leave the weir in the line until the flow rate has stabilized. The Contractor is responsible for verifying the groundwater level by providing sight gauges in manholes or digging test holes at suitable locations.

- a. The total seepage and infiltration of groundwater as determined by the test shall in no case exceed 50 gallons per 24 hours per inch-mile of pipe.
- b. Make infiltration tests on all sewer construction before placing the lines in service and before making any connections to other sewers.
- c. If the amount of infiltration into the sewer(s) is in excess of the maximum quantity specified above, then repair the joints, relay the sewer (if necessary), or perform other remedial construction, at the Contractor's expense, in order to reduce groundwater infiltration to within the specified limits.

802-8.1.3 Exfiltration Test: Where the groundwater is not 24 inches or more above the top of the pipe section being tested, the Contractor shall perform an exfiltration test.

- a. The Contractor shall bulkhead the pipe below the lower manhole of the section being tested with a pneumatic plug or other device. Insert a vent pipe 48 inches long in the stopper of the upper end of that section. Then fill the lower manhole with water, or add water until there is a minimum of 4 feet over the upper end; make certain that all air is forced out through the vent tube.
- b. Contractor will measure the drop in the level of the water in the manhole due to exfiltration over a specific time, and calculate the water loss due to exfiltration. The total exfiltration shall not exceed that specified above for infiltration.

802-8.2 Mandrel Test (Plastic & Fiberglass Pipe): Pipe shall not exceed a deflection of more than 5%. Unless otherwise directed by the Engineer, after pipe has been backfilled for at least 30 days, a mandrel sized at 95% of the inside pipe diameter shall be pulled through pipe.

802-8.3 Smoke Test:

- a. All new sewer lines including service laterals with diameters up to & including 15 inches shall be smoke tested prior to backfilling in accordance with Section 814.
- b. At the discretion of the Owner, a final smoke test shall be performed a minimum of nine (9) months after final acceptance up to the end of the twelve (12) month warranty period.
- c. Leaks detected during smoke testing must be repaired as part of the Work and shall be considered incidental to and included in the cost of Work.

802-9 SANITARY SEWER PIPE REPAIRS:

802-9.1 Point Repair: A Point Repair is the task of excavating to a pipe and performing a corrective measure to repair a defect on a length of sewer pipe less than or equal to twenty (20) feet long. Point repairs shall address, but not be limited to, cracked pipe, broken pipe, faulty tap, protruding tap, sheared joint, dropped joint, or other similar conditions.

802-9.2 Remove and Replace: Remove and Replace is the task of excavating to a pipe and performing a corrective measure to repair a defect on a length of sewer pipe as designated on the Contract Documents. Remove and Replace operations shall address, but not be limited to, cracked pipe, broken pipe, faulty tap, protruding tap, sheared joint, dropped joint, or other similar conditions.

802-9.3 Trenchless Point Repair: A Trenchless Point Repair is the task of providing a localized trenchless sealing and structural repair to a defect on a length of sewer pipe less than or equal to three (3) feet long with an internally installed stainless steel repair sleeve. Trenchless Point repairs shall address, but not be limited to, leaking joints, cracked pipe, broken pipe, deformed pipe, or other similar conditions where excavation is not practical due to surface conflicts.

802-9.3.1 Design: The design of the stainless steel repair sleeves shall be in accordance with AWWA Manual 11 standards for design of Flexible Tunnel Liners. The repair sleeve shall be structurally designed to carry 5psi uniformly distributed hydraulic working load having a minimum factor of safety of 2.5 after 100-year chemical erosion of stainless steel material has been subtracted. Corrosion tables based on Stainless Steel Industry reports shall be used for calculating general surface erosion of the stainless steel plate thickness over the required 100-year service life due to corrosion. Calculations prepared by a Licensed Professional Engineer shall be submitted containing structural design, calculated effect of ovality and calculated structural effect of a 100-year chemical erosion of the structural element.

Where repair sleeve is fully enclosed in the damaged host pipe, the structural element of the sleeve shall be designed for 5psi hydraulic load with a minimum 2.5 factor of safety.

Where repair sleeve is expected to come in direct contact with the surrounding soil in excess of one third of the sleeve length, the structural element of the sleeve shall be designed for a hydraulic load of 10psi using a minimum 2.5 factor of safety. In lieu of a single sleeve, it is permissible to use a double sleeve assembly consisting of two single sleeves with 5psi capacity each joined together by a manufacturer approved resin matrix as a load transfer medium.

In case the host pipe has become oval, not exceeding 10 percent out of round, the repair sleeve with wall thickness of next thicker gauge from the one specified for standard repair sleeves shall be used.

802-9.3.2 Materials:

- a. Sleeve: The structural component of the repair device shall be 316 stainless steel in the form of sleeves of the required length to cover the repair. The inner diameter reduction of the host pipe shall not exceed one (1) inch.
- b. Sealant: Only manufacturer specified resin with physical properties set out by the requirements of the structural design shall be used. The sealant must be appropriate for transmitting all external loads to the stainless steel structural core, providing adequate support for the structural core against buckling and bonding the device in place.
 1. Sealing Grout: The sealant used shall be as specified by the manufacturer for sealing infiltration.
 2. Structural Grout: The sealant used shall be as specified by the manufacturer and shall be capable of transmitting all external loads to the structural core of the repair sleeve. If any infiltrating water is present, infiltration shall be sealed prior to installation of sleeve using structural grout.

802-9.3.3 Preparation:

- a. Contractor shall notify the Engineer prior to beginning cleaning activities and pre-construction CCTV inspection. Contractor shall plan cleaning and pre-construction CCTV inspection activities far enough in advance of Trenchless Point Repair activities to allow Engineer time to review any Critical Damage Reports that may develop from the CCTV inspection results.
- b. Experienced personnel trained in locating breaks, obstacles, and service connections by CCTV will perform CCTV of pipe in accordance with Section 815. The interior of the pipe should be carefully inspected to determine the location of any conditions that may prevent proper installation of the repair sleeve, such as protruding service taps, collapsed or crushed pipe, and reductions in the cross-sectional pipe area of more than 10%. The Contractor will notify the Engineer immediately if the inspection reveals an obstruction that cannot be removed by conventional sewer cleaning equipment or that will interfere with the proper installation of an acceptable repair. This should be submitted to the Engineer as a Critical Damage Report (CDR). The CDR shall include all adverse conditions for each pipe segment from manhole to manhole. The CDR shall include:
 1. Two letters of transmittal.
 2. A CDR standard form including screen capture of adverse condition and location footage.
 3. A hardcopy printout of the video cut sheet (video report).
 4. A DVD containing:
 - i. Electronic pdf files of the video cut sheets
 - ii. Digital copy of the pipe video
 5. Recommendation from the Contractor for each adverse condition.
- c. It shall be the responsibility of the Contractor to remove all loose debris that is located within the sewer pipe in accordance with Section 812. This cleaning will be incidental to the cost of the Trenchless Point Repair. If an obstruction is encountered that cannot be cleared with conventional sewer cleaning equipment, the Engineer should be notified immediately.
- a. Any roots, protruding gaskets, or protruding laterals in the existing sewer pipe shall be cut and removed from the sewer pipe prior to the sewer liner installation. With the approval of the Engineer, this removal work associated with Trenchless Point Repairs will be paid for under the relative pay items in Section 808.

802-9.3.4 Installation:

- a. The entire process of transporting and installing the sleeve shall be recorded on digital media and a copy provided to the Engineer at the completion of each sewer section.
- b. The sewer must remain in full operation during the repair process allowing for a maximum of 5 minutes of flow interruption.
- c. In case of offset joints, bells, and deformed or irregular pipe with disarranged pipe pieces, the pipe bore shall be opened by application of a hydraulic expander.
- d. Pipe deformation shall be reversed back to the round configuration and repair sleeves installed capable of restoring the full structural capacity of the host pipe.
- e. In case the host pipe has completely collapsed and re-rounding is not possible without complete

removal of the damaged pipe parts, an opening at least equal to the inside diameter of the host pipe must be cleared through the debris and the repair devices capable of sustaining the full soil load extended throughout the collapsed area at least 12 inches into the undamaged pipe.

- f. When a cracked host pipe has formed randomly directed elements the host pipe must be re-rounded with the repair sleeve, or the re-rounding must be completed before installing a sleeve, in the backfill is compacted too tight around the pipe. In this case re-rounding should be accomplished by using a hydraulic jack before the sleeve is inserted.
- g. The repair must extend at least 8" into undamaged pipe or joint adjacent to both extremities of the damage. If access to the line is limited such that shorter than specified sleeves must be used, or the length exceeds the manufacturer standard sleeve lengths, two or more sleeves shall be used with an overlap where two adjacent sleeves meet following manufacturer specified standards for overlapped repair sleeves.
- h. Upon completion of the repair, the entire sewer section shall be inspected and the inspection recorded on digital media at no additional cost to the Owner. This video inspection shall be submitted to the Engineer for verification of work quality and completion of repair.

802-9.3.5 Acceptance:

- a. All stainless steel sleeve locks have been engaged.
- b. All the pre-measured grout supplied by the manufacturer has been applied to each stainless steel sleeve as specified by the manufacturer.
- c. All host pipe leaking joints, cracks and holes are fully covered by the repair sleeve.
- d. The entire pipe damage has been repaired per these specifications.

802-9.4 Smoke Testing: Smoke Testing shall be performed on each mainline or service lateral repair once all repairs are complete on a segment and prior to backfill according to Section 814 of the Specifications.

802-10 MEASUREMENT:

- a. **Sewer Pipe:** Measurement of new pipe shall be made from center of manhole to center of manhole as identified on the Contract Documents. Quantities of pipe for payment will be the contract quantities, adjusted as required due to plan errors or plan changes. Excavation, bedding, backfill, compaction, testing, and bypass flow are included in the measurement of new pipe.
- b. **Rehab Sewer Pipe:** Measurement for the removal of existing sewer pipe and its replacement with sewer rehab pipe shall be made on a linear foot basis of pipe installed. Measurement will be made to the nearest whole foot for the various diameters listed in the Bid Form. When tying into a manhole or manholes, measurement will be to the inside face of the manhole structure. It is recognized that the Contractor must purchase pipe material at the minimum manufactured length based on the pipe material used; therefore, the unit bid price shall be based on a minimum main line length of six (6) feet at each point repair and will be recorded accordingly by the Engineer's field representative. Excavation, bedding, backfill, and compaction are NOT included in the measurement of sewer rehab pipe.
- c. **Connections to Existing Manholes:** Connections to existing manholes (sanitary sewer manhole or storm water conflict/junction/inlet box) will be measured each for the connections required.
- d. **Adjusted Sanitary Sewer Service Lateral Connections:** Adjusting existing services will be measured each for the service adjustments required and includes up to twenty (20) feet of adjusted

sewer service lateral to avoid conflict with new utility. Excavation, bedding, backfill, compaction, testing, and bypass flow are included in the measurement of new pipe.

- e. **Sewer Service Lateral:** Measurement of new service lateral shall be made from the nearest outside edge of the mainline or lateral connection stack to the limits of the sanitary sewer clean-out as identified on the Contract Documents. Quantities of service lateral for payment will be the contract quantities, adjusted as required due to plan errors or plan changes. Measurement for sewer service laterals shall be made to the nearest linear foot of pipe installed.
- f. **Sewer Service Lateral Connection Stack:** Measurement of new service lateral connection stack shall be made from top outside edge of the mainline to the top of the stack as identified on the Contract Documents. Quantities of service lateral connection stack for payment will be the contract quantities, adjusted as required due to plan errors or plan changes. Measurement for sewer service lateral connection stacks shall be made to the nearest vertical foot of pipe installed.
- g. **Sewer Service Lateral Termination:** Measurement for the sewer service lateral termination shall be the actual count of termination assemblies installed and accepted.
- h. **Non-Shear Couplings:** Non-shear couplings will be counted each for the diameter required.
- i. **Electrofusion Couplings:** Electrofusion couplings for jointing existing HDPE pipe to new HDPE pipe will be counted each for the diameter required.
- j. **Sanitary Sewer Clean-out:** Measurement for the sanitary sewer clean-out shall be the actual count of clean-outs installed and accepted.
- k. **Service Lateral Mainline Connection Associated with CIPP:** Measurement for the service lateral mainline connection associated with mainline that has been previously rehabilitated with a CIPP liner shall be the actual count of each service lateral connection installed and accepted.

Excavation, bedding, backfill, and compaction associated with this item shall be paid for under the Sewer Point Repair Excavation, Backfill, and Compaction item by the appropriate depth range in accordance with Section 801. The pay limit length for this excavation, bedding, backfill, and compaction shall be limited to 6 feet at the depth range of the mainline beginning at the backside mainline excavation width pay limit. The pay limit width of excavation shall be the trench pay limit as shown on the Contract Documents.

- l. **Service Lateral Mainline Connection Associated with Slip Lining:** Measurement for the service lateral mainline connection associated with slip lining shall be the actual count of each service lateral connection installed and accepted.

Excavation, bedding, backfill, and compaction associated with this item shall be paid for under the Sewer Point Repair Excavation, Backfill, and Compaction item by the appropriate depth range in accordance with Section 801. The pay limit length for this excavation, bedding, backfill, and compaction shall be limited to 6 feet at the depth range of the mainline beginning at the backside mainline excavation width pay limit. The pay limit width of excavation shall be the trench pay limit shown on the Contract Documents.

- m. **Service Lateral Mainline Connection Associated with HDPE:** Measurement for the service lateral mainline connection associated with HDPE pipe or lining material shall be the actual count of each service lateral connection installed and accepted.

Excavation, bedding, backfill, and compaction associated with this item shall be paid for under the Sewer Point Repair Excavation, Backfill, and Compaction item by the appropriate depth range in accordance with Section 801. The pay limit length for this excavation, bedding, backfill, and compaction shall be limited to 6 feet at the depth range of the mainline beginning at the backside

mainline excavation width pay limit. The pay limit width of excavation shall be the trench pay limit as shown on the Contract Documents.

- n. **Abandon Sewer Pipe:** Abandonment of gravity sewer pipe will be measured on a lump sum basis or by the cubic yard of flowable fill required to complete all work indicated on the Contract Documents and as provided in the bid form. Abandonment shall include any equipment, cleaning, flowable fill throughout the full length of pipe, and disposal in accordance with the plans and specifications.
- o. **Plug and Abandon Sewer Pipe:** Plug and abandonment of gravity sewer pipe will be measured on a lump sum basis upon completion of all work indicated on the Contract Documents. Plug and abandonment shall include any equipment, cleaning, disposal and flowable fill required to cap the pipe ends in accordance with the plans and specifications.
- p. **Remove Sewer Pipe:** Removal of gravity sewer pipe will be measured on a lump sum basis upon completion of all removal work indicated on the Contract Documents including appurtenances. Removal work shall include any equipment, cleaning, disposal, trenching, and backfilling required to remove the existing gravity sewer pipe in accordance with the plans and specifications.
- q. **Remove or Abandon Sewer Pipe:** Removal or abandonment of gravity sewer pipe will be measured on a lump sum basis upon completion of all removal work indicated on the Contract Documents. Removal work shall include any equipment, cleaning, disposal, trenching, and backfilling required to remove the existing gravity sewer pipe in accordance with the plans and specifications. Abandonment in-place with this item shall include insertion of flowable fill throughout the full length of pipe.
- r. **Trenchless Point Repair:** Measurement for trenchless point repair shall be made on a linear foot basis of sleeve installed. Measurement will be made to the nearest whole foot for the various diameters listed in the Bid Form.

802-11 PAYMENT:

- a. **Sewer Pipe:** Payment for this Item will be full compensation for equipment, excavation, bedding, backfill, compaction, pipe, fittings, removal and disposal of existing sewer pipe and/or manholes if necessary, plugging, sewer flow control, traffic control, connections to new manholes, connections to service lateral, laying, jointing, cleaning new pipe, and testing, in accordance with the Contract Document. Sand-aggregate for bedding and initial backfill material and useable excavated soil for secondary backfill, as shown on City-Parish Standard Detail 801-01 shall be included in this pay item. When required, special bedding and backfill material such as #57 Stone Backfill, #610 Stone Backfill, CLSM Backfill, Sand-Aggregate for Secondary Backfill, and Select Material for Backfill required for Work associated with Sewer Pipe will be paid for under the relative pay item in Section 801.
- b. **Rehab Sewer Pipe:** Payment for this Item will be full compensation for pipe, fittings (excluding non-shear couplings), plugging, removal and disposal of existing sewer pipe, sewer flow control, connections to existing pipe and service lines, laying, jointing, and cleaning new pipe, smoke testing of the repair, in accordance with the Contract Documents. Payment will be made for new pipe only when it is installed in the ground. No payment shall be made for pipe stored on the site but not yet installed. This item shall be used in conjunction with point repairs or remove and replace rehabilitation only. Excavation, bedding, backfill, and compaction required for Work associated with Rehab Sewer Pipe will be paid for under the relative pay item in Section 801.
- c. **Connections to Existing Manholes:** Payment for this Item will be full compensation for all equipment, labor, materials required to connect the pipe to an existing manhole (sanitary sewer manhole or storm water conflict/junction/inlet box).

- d. **Adjusted Sanitary Sewer Service Lateral Connections:** Payment for this item shall be full compensation for all equipment, labor, excavation, bedding, backfill, compaction, pipe, fittings, removal and disposal of existing sewer pipe if necessary, plugging, sewer flow control, traffic control, materials, and testing required to adjust up to twenty (20) feet of sanitary sewer service connections in accordance with the Contract Documents.
- e. **Sewer Service Lateral:** Payment for this Item will be full compensation for equipment, excavation, bedding, backfill, compaction, pipe, fittings, removal and disposal of existing sewer pipe if necessary, plugging, bypass pumping, traffic control, laying, jointing, cleaning new pipe, and testing, in accordance with the Contract Document. Sand-aggregate for bedding and initial backfill material and useable excavated soil for secondary backfill, as shown on City-Parish Standard Detail 801-01 shall be included in this pay item. When required, special bedding and backfill material such as #57 Stone Backfill, #610 Stone Backfill, CLSM Backfill, Sand-Aggregate for Secondary Backfill, and Select Material for Backfill required for Work associated with Sewer Pipe will be paid for under the relative pay item in Section 801.
- f. **Sewer Service Lateral Connection Stack:** Payment for this item shall include all material, labor, pipe, fittings, bedding material.
- g. **Sewer Service Lateral Termination:** Payment for this Item will be full compensation for SDR 35 PVC pipe, PVC fittings, and PVC cap.
- h. **Non-Shear Couplings:** Payment for this Item will be full compensation for all equipment, labor, and materials required to install non-shear couplings.
- i. **Electrofusion Couplings:** Payment for this Item will be full compensation for all electrofusion couplings, equipment, labor, and materials required to install electrofusion couplings.
- j. **Sanitary Sewer Clean-out:** Payment for this Item will be full compensation for SDR 35 PVC pipe, PVC fittings, PVC clean-out fittings, cast iron frame and cover, and 24" square concrete pad surrounding the top of the clean-out.
- k. **Service Lateral Mainline Connection Associated with CIPP:** Payment for this item will be full compensation for removal of host pipe (as required), saddle wyes, all fittings, grout, smoke testing, all equipment, labor, and materials.
- l. **Service Lateral Mainline Connection Associated with Slip Lining:** Payment for this item will be full compensation for removal of host pipe (as required), compressive-fit service connection, patching of host pipe, grout, all fittings, smoke testing, all equipment, labor, and materials.
- m. **Service Lateral Mainline Connection Associated with HDPE:** Payment for this item will be full compensation for electrofusion branch saddles, all fittings, smoke testing, all equipment, labor, and materials.
- n. **Abandon Sewer Pipe:** Payment for this Item will be full compensation for equipment, bypass pumping, connections, cleaning, disposal and flowable fill, in accordance with the Contract Document.
- o. **Plug and Abandon Sewer Pipe:** Payment for this Item will be full compensation for equipment, bypass pumping, connections, cleaning, disposal and flowable fill at the pipe ends (18 inches min.), in accordance with the Contract Document.
- p. **Remove Sewer Pipe:** Payment for this Item will be a lump sum full compensation for equipment, bypass pumping, connections, cleaning, excavation, backfill and delivery/disposal, in accordance with the Contract Document. Payment will be made for removed pipe.

- q. **Removal or Abandon Sewer Pipe:** Payment for this Item will be a lump sum full compensation for equipment, bypass pumping, connections, cleaning, excavation, backfill, delivery/disposal, and flowable fill throughout full length of pipe, in accordance with the Contract Document. Payment will be made for removed pipe and/or completely filled abandoned pipe.
- r. **Trenchless Point Repair:** Payment for this item will be full compensation for sewer flow control, public notification, traffic control, sewer pipe cleaning, repair device, installation of the repair device, pre- and post-construction CCTV inspection, and clean-up in accordance with the Contract Documents.

802-12 PAY ITEMS:

<u>Pipe Inner Diameter (I.D.) Schedule (as</u>		<u>Shown on Drawings)</u>		<u>Pipe Depth Schedule</u>	
A = 4" Pipe	N = 27" Pipe	0 = 0	- 6 Feet		
B = 6" Pipe	O = 30" Pipe	1 = 6.1	- 8 Feet		
C = 8" Pipe	P = 32" Pipe	2 = 8.1	- 10 Feet		
D = 10" Pipe	Q = 36" Pipe	3 = 10.1	- 12 Feet		
E = 12" Pipe	R = 42" Pipe	4 = 12.1	- 16 Feet		
F = 14" Pipe	S = 48" Pipe	5 = 16.1	- 20 Feet		
G = 15" Pipe	T = 54" Pipe	6 = 20.1	- 24 Feet		
H = 16" Pipe	U = 60" Pipe	7 = 24.1	- 28 Feet		
I = 18" Pipe	V = 64" Pipe	8 = 28.1	- 32 Feet		
J = 20" Pipe	W = 66" Pipe	9 = 32.1	- 36 Feet		
K = 21" Pipe	X = 72" Pipe				
L = 24" Pipe	Y = 76" Pipe				
M = 26" Pipe	Z = 80" Pipe				

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
80200__	Sewer Pipe (depth) (diameter)	Linear Feet
80210__	PVC Sewer Pipe (depth) (diameter)	Linear Feet
80211__	HDPE Sewer Pipe (depth) (diameter)	Linear Feet
80212__	Ductile Iron Sewer Pipe (depth) (diameter)	Linear Feet
80213__	Steel Sewer Pipe (depth) (diameter)	Linear Feet
80214__	Fiberglass Sewer Pipe (depth) (diameter)	Linear Feet
802200_	PVC Rehab Sewer Pipe (diameter)	Linear Feet
802210_	HDPE Rehab Sewer Pipe (diameter)	Linear Feet
802220_	Ductile Iron Rehab Sewer Pipe (diameter)	Linear Feet
802230_	Steel Rehab Sewer Pipe (diameter)	Linear Feet
802240_	Fiberglass Rehab Sewer Pipe (diameter)	Linear Feet
8023000	Connections to Existing Manholes	Each
8024000	Adjusted Sanitary Sewer Service Lateral Connections	Each
8024100	Sewer Service Lateral	Linear Feet
8024200	Sewer Service Lateral Connection Stack	Vertical Feet
8024300	Sewer Service Lateral Termination	Each
802500_	Non-Shear Couplings (diameter)	Each
802501_	Electrofusion Couplings (diameter)	Each
8026000	Sanitary Sewer Clean-out	Each

8027000	Service Lateral Mainline Connection Associated with CIPP	Each
8027001	Service Lateral Mainline Connection Associated with Slip Lining	Each
8027002	Service Lateral Mainline Connection Associated with HDPE	Each
8028000	Abandon Sewer Pipe (w/flowable fill in-place)	Lump Sum
8028001	Abandon Sewer Pipe (w/flowable fill in-place)	Cubic Yard
8028100	Plug and Abandon Sewer Pipe (cap each end)	Lump Sum
8028200	Remove Sewer Pipe	Lump Sum
8028300	Remove or Abandon Sewer Pipe	Lump Sum
802900_	Trenchless Point Repair (diameter)	Linear Feet

PART IX MISCELLANEOUS CONSTRUCTION

SECTION 903 EROSION CONTROL:

This Section of the Standard Specifications is deleted in its entirety and replaced by the following:

903-1 DESCRIPTION: This work consists of providing all; administrative, labor, materials, equipment, and accessories required to permit, install, monitor, maintain, and remove where required, temporary and permanent sedimentation and erosion control measures.

903-2 MATERIALS: Materials shall comply with the following Sections and Subsections.

Fertilizer	1022-2
Seed	1022-3
Straw Mulch & Fiber Mulch	1022-5
Straw Mat	1022-7.1
Excelsior Mat	1022-7.2
Slab Sod	1022-9

Materials not covered by project specifications shall meet commercial grade standards and shall be approved before being incorporated into the project. No testing of materials used in temporary erosion control features will be required. Acceptance of temporary erosion control materials will be by visual inspection.

903-3 CONSTRUCTION: Installation of temporary erosion control features shall be coordinated with construction of permanent erosion control features to ensure effective erosion control at all times. The contractor shall install or construct temporary erosion control features prior to initiation of land disturbance activities.

903-3.1 Temporary Erosion Control and Storm Water Pollution Prevention Plan: In accordance with Section 7-7 the contractor will abide by the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) and the National Pollution Discharge Elimination System (NPDES) General Permit. The Contractor shall prevent to the maximum extent practicable the transmission of soil particles into streams, canals, lakes, reservoirs or other waterways. Except as necessary for construction, excavated material shall not be deposited in streams or impoundments, or in a position close enough to be washed into waterways by high water or runoff.

Lands or waters outside construction limits shall not be disturbed, except as authorized. The contractor shall not unnecessarily strip vegetation near stream banks.

For disturbed areas greater than 1 acre including but not limited to: project construction limits, staging and disposal areas, temporary access roads, detours, and borrow areas, the contractor shall be required to develop a SWPPP (Storm Water Pollution Prevention Plan). The contractor shall contact LADEQ for the latest specific requirements regarding the Storm Water General Permit and Notice of Intent.

The engineer may limit exposure of unprotected earth and may direct the contractor to provide immediate permanent or temporary erosion or pollution control measures to prevent contamination of streams, lakes, reservoirs, canals or other impoundments or prevent detrimental effects on property outside the right-of-way.

For projects with a total cumulative disturbed area greater than 1 acre including but not limited to: project construction limits, staging and disposal areas, temporary access roads, detours, and borrow areas, the contractor shall be required to develop a SWPPP (Storm Water Pollution Prevention Plan) by completing the current EPA SWPPP template. The contractor shall contact LADEQ for the latest specific requirements regarding the appropriate LADEQ Storm Water General Permit, Notice of Intent, and Notice of Termination forms.

As required by the contract documents and as detailed in the contractors SWPPP, the contractor shall place, monitor, and maintain; temporary seed, fertilizer, mulch, sandbags, hay bales, silt fences, slope drains, sediment check dams, sediment basins, and other best management practices. Earth berms shall be constructed as needed to direct water away from slopes.

The use of erosion control features or methods other than those in the contract shall be as contained in the Contractors SWPPP and shall be considered included in the lump sum cost for the development and maintenance of the SWPPP .

(a) **Temporary Seeding, Fertilizing and Mulching:** Seeding, fertilizing and mulching shall be performed in accordance with Subsection 903-3.2, modified as follows. Ground preparation shall be limited to blading the area; grass seed shall be a fast-growing species suitable to the area; application rates of seed, fertilizer and mulch may be reduced when directed.

(b) **Sandbags and Hay Bales:** Sandbags shall be 1 cubic foot burlap bags, filled at least 3/4 full with sand. Hay bales shall be standard size bales and shall be secured by stakes.

(c) **Slope Drains:** Slope drains shall be constructed of pipe, riprap or other suitable material, with riprap protection at the discharge end.

(d) **Sediment Basins:** Sediment basins shall be excavated to collect silt, and shall be cleaned out as necessary to maintain their effectiveness. Basin outfall shall be riprap protected.

(e) **Sediment Check Dams:** Check dams shall be constructed in ditches, and shall consist of logs and brush or fencing.

(f) **Silt Fencing:** Silt fencing shall be geotextile fabric, either wire-supported or self-supported, attached to posts.

(g) **Curb Inlet Protection:** Temporary sediment control device or measure to prevent silt, sediment and debris from entering storm drain curb inlets. Inlet protection is to be implemented at existing curb inlets prior to construction. The device shall be centered against the curb inlet with a minimum of 12 inches of the device overhanging on each side of the inlet opening. No part of the device, or ponding created by the device, shall interfere with the flow of traffic, create a safety hazard, or cause property damage. Effective curb inlet protection must be provided throughout the project until all sources with potential for discharging into inlets have been paved or stabilized. Contractor shall remove curb inlet protection once surface restoration in the contributing drainage area is complete. Due care shall be taken to ensure sediment does not fall into the inlet and impede the intended function of the device. Any material falling into the inlet shall be removed. Contractor shall maintain devices and remove all accumulated sediment and debris from surface and vicinity of unit after each rain event or as directed by Engineer in order to provide adequate sediment holding capacity and performance of device.

(h) **Maintenance of Erosion Control Features:** The contractor shall install, construct, repair, and maintain temporary erosion control features within 48 hours of initiation of land disturbance activities. Temporary erosion control features shall be inspected at least once every 14 calendar days, in advance of any anticipated rain events, and within 24 hours after a rainfall event of 0.5 inches or greater. The features are to be maintained as described below or replaced as directed at no direct pay.

(1)**Temporary Seeding:** The seeded areas showing erosion after inspection shall be reseeded if necessary.

(2)**Mulches:** Mulched areas showing erosion shall be repaired and the mulch reapplied if necessary.

(3)**Straw or Hay Bale Barriers:** The bale barriers shall be inspected after each rainfall and time frame as defined above and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, "end runs" and undercutting beneath bales.

(4)**Slope Drains:** Slope drains shall be inspected weekly and after each rainfall as defined above, and repairs made if necessary. The contractor shall avoid the placement of any material on and prevent construction traffic across the slope drain.

(5)**Sediment Check Dams:** Sediment deposits shall be removed when the deposits reach one-half the height of the check dam. Inspections shall be made to insure that the center of the dam is lower than the edges. Erosion around the edges shall be corrected immediately.

(6)**Silt Fencing:** Sediment deposits shall be removed when the deposits reach one-half the height of the fence. If the fabric on the silt fence decomposes or becomes ineffective, the fabric shall be replaced promptly.

(7)**Temporary Stone Construction Entrance and/or Wash Racks:** The construction entrance shall be maintained to allow for removal of mud from the tires. The sediment from the wash rack runoff shall be removed once the wash rack is no longer performing as intended.

(i) **Removal of Temporary Erosion Control Features:** Temporary erosion control features existing at the time of construction of permanent erosion control features shall be removed or incorporated into the soil in such manner that no detrimental effect will result. The engineer may direct that temporary features be left in place.

903-3.2 Permanent Erosion Control:

903-3.2.1 Seeding and Fertilizing: Seed beds shall be disked and pulverized at least 3" deep; then leveled and lightly rolled prior to seeding. Seed shall be applied by one of the following methods:

(a) **Broadcast:** Seed and fertilizer shall be uniformly spread by hand or mechanical methods. If hand spreading is used, seed and fertilizer shall be sown in 2 directions at right angles to each other.

(1) **Fertilizer:** Fertilizer shall be applied at the following rate:

Type	Pounds Per Acre
8-8-8	1,000
12-12-12	667
13-13-13	615
16-16-16	500

(2) **Seed:** Seed shall be sown at the following rate:

	Seed Mixture and Rate/1000 SF
March-September	1 Lb Hulled Bermuda
October-February	1 Lb Unhulled Bermuda and 2 Lb Winter Rye

(b) **Hydroseeding:** Seed, fertilizer, mulch and tackifier shall be placed in a single mechanical operation at the following rates:

	Planting Mixture and Rate (Lb/1000 SF)					
	Hulled Bermuda Seed	Unhulled Bermuda Seed	Winter Rye Seed	Water Soluble Fertilizer	Fiber Mulch	Soil Tackifier
March- September	1	-	-	30	35	1.5
October- February	-	1	2	30	35	1.5

903-3.2.2 Watering: Seeded and sodded areas shall be watered at a rate of 5 gal/sy immediately after seed is broadcast or sod is placed. When necessary, additional water shall be applied to seeded or sodded areas to supplement natural rainfall until the Owner accepts the work. Water shall be applied with approved sprinkling equipment what will spread the water evenly and in a manner that will not cause erosion of the soil surface.

903-3.2.3 Mulching:

903-3.2.3.1 Straw Mulch: Straw mulch shall be spread on seeded areas at rate of 2 ton/acre.

903-3.2.3.2 Fiber Mulch: Fiber mulch shall be spread on seeded areas at rate of 1-1½ tons/acre.

903-3.2.4 Erosion Blanket: Erosion control blankets shall be straw or excelsior mats and shall be placed on seeded areas.

On slopes, blanket strips shall be placed either transverse or parallel to slope. Blanket shall be turned down into 6" anchor slots at top and bottom of slope. Mats shall be stapled to ground at maximum 6-foot intervals staggered on adjacent rows. Straw mats shall be overlapped 6" on ends and sides; excelsior blanket strips shall be tightly butted with adjacent strips at ends and sides.

In ditches, blanket strips shall be placed parallel to ditch, beginning at downstream end. Sides and ends of excelsior strips shall be tightly butted with adjacent strips; sides and ends of straw mats shall be turned down into 6" deep anchor slots at ends and sides. Mats shall be stapled to ground at maximum 4-foot intervals, staggered on adjacent rows.

903-3.2.5 Slab Sod: Areas to be slab sodded shall be disked and pulverized at least 3" deep. The Contractor shall commence work on lawns and grassed areas within fourteen (14) days from the completion of the repair, work, or final disturbance of the area. Prior to slab sodding, topsoil shall be uniformly spread over areas and lightly compacted. Areas to be sodded shall be finish graded, tilled, raked and debris removed. The Engineer shall approve the finish grade of all areas prior to application of sod. The Contractor shall furnish sod equal to and similar in type as the surrounding area.

Approximately 90% of the required fertilizer shall be placed on the area prior to placing sod, and the remainder of the fertilizer shall be broadcast after the sod is placed. Sod shall be rolled or tamped after placement.

Upon completion of sodding operations, all excess soil, stones, and debris remaining shall be removed from the construction area. Sodded areas shall be protected against traffic or other use by placing warning signs or erecting barricades as necessary. The Contractor, at no additional cost, shall repair any areas damaged prior to actual acceptance by the Owner.

The sodded area will not be accepted until a satisfactory stand of grass has been established. A satisfactory stand of grass is defined as a full lawn cover of the predominant vegetative species existing prior to the beginning of the Work over the disturbed areas, with grass free of weeds, alive and growing, leaving no bare spots larger than ¼ square yard within a radius of ten (10) feet. If a satisfactory stand of grass has not been obtained within a reasonable period of time, the Engineer shall instruct the Contractor in writing that the vegetative cover is not adequate and that additional measures shall be undertaken by the Contractor to establish the required satisfactory stand of grass.

903-4 MEASUREMENT:

(a) **Temporary Erosion Control:** When temporary erosion and pollution control measures are required due to the contractor's negligence or failure to install permanent controls, such work shall be performed by the contractor at no direct pay. Required temporary erosion and pollution control work which is not due to the contractor's negligence will be measured as follows:

(1) **Seed, Fertilizer and Mulch:** Measurement will be made in accordance with Heading (b) below.

(2) **Sandbags, Hay Bales, Sediment Basins and Sediment Check Dams:** Measurement will be made per each.

(3) **Silt Fencing and Slope Drains:** Measurement will be made by the linear foot.

(4) **Temporary Curb Inlet Protection:** Measurement will be made by the linear foot.

When temporary erosion control work is ordered and is not covered by contract items, the work shall be performed as extra work in accordance with Sections 4-2 and 10-4 except that no extra work order will be required prior to starting work.

The construction of temporary earth berms along edges of the roadway to prevent erosion during grading and subsequent operations will not be measured for payment.

In case of failure of the contractor to control erosion, or siltation, the Engineer may employ outside assistance or use his own forces to provide the necessary corrective measures, and the cost thereof will be deducted from payments for the work. Partial payments will be withheld until satisfactory temporary erosion control is established.

(b) **Permanent Erosion Control:**

(1) **Seed:** Seed will be measured by the pound.

(2) **Fertilizer:** Fertilizer will be measured by the pound. The estimated quantity shown in the plans is based on Type 8-8-8 fertilizer. If other types are used, the measured quantities will be multiplied by the following factors to determine pay quantities:

<u>Type</u>	<u>Factor</u>
12-12-12	1.5
13-13-13	1.625
16-16-16	2.0

(3) **Water:** Water will be measured in units of 1,000 gallons; however, water used in hydroseeding slurry will not be measured for payment.

(c) **Slab Sod:** This item shall be measured per square yard of sod installed within the pay limits and as approved by the Engineer prior to removal or disturbance of existing grassed area. Payment shall not be made for sod placed outside of the approved pay limits in areas damaged by the Contractor.

(d) **Mulch and Erosion Control Mats:** Quantities of slab sod, mulch and erosion control mats for payment will be the contract quantities, adjusted as necessary if the engineer makes changes to fit field conditions, if plan errors are proven, or if design changes are made.

(e) **Stormwater Pollution Prevention Plan:** Other than the contract items and items directed to be installed by the engineer, no measurement will be made for the development, administration, permitting, install, monitoring, maintenance, and removal where required, of the SWPPP.

(f) **Hydroseeding:** Quantities for hydroseeding will be measured by the acre.

903-5 PAYMENT: Payment for temporary and permanent erosion control items that are included as contract items will be made at the contract unit prices.

Payment for devices used to correct unforeseen conditions will be made at the contract unit price for similar devices shown on the plans, or as extra work if plan details are not applicable.

Payment for sod will be full compensation for topsoil, finish grading, tilling, raking, debris removal, sod, water, fertilizer, rolling or tamping, and protection.

Payment for obtaining and maintaining the necessary permits; design of the Storm Water Pollution Prevention Plan (SWPPP) and associated documentation (to include but not limited to the NOI and the NOT if necessary), and all labor, equipment or materials required for the implementation of the SWPPP, except for the installation and maintenance of those erosion control pay items already included in the plans, shall be made under Item 9031600.

Partial payments for the Storm Water Pollution Prevention Plan item will be made in accordance with the following schedule.

<u>% of Total Contract Amount Earned</u>	<u>% of Lump Sum Price to be Paid</u>
1st Partial Estimate	15
10	25
25	30
50	50
75	75
100	100

Payment for hydroseeding will be made at the contract unit price per acre and shall include the seed, mulch, tackifier, lime, fertilizer, water, and bed preparation as a system and all labor and equipment necessary to complete the work.

903-6 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
9030100	Temporary Sand Bags	Each
9030200	Temporary Hay Bales	Each
9030300	Temporary Sediment Basins	Each
9030400	Temporary Sediment Check Dams	Each
9030500	Temporary Silt Fencing	Linear Foot
9030600	Temporary Slope Drains	Linear Foot
9030610	Temporary Curb Inlet Protection	Linear Foot
9030700	Topsoil	Cubic Yard
9030800	Seed	Pound
9030900	Fertilizer	Pound
9031000	Water	M-Gallons
9031100	Straw Mulch	Square Yard
9031200	Asphalt Mulch	Square Yard
9031300	Fiber Mulch	Square Yard
9031400	Erosion Control Mat	Square Yard
9031500	Slab Sod	Square Yard
9031600	Storm Water Pollution Prevention Plan	Lump Sum
9031700	Hydroseeding	Acre

SECTION 905 TRAFFIC SIGNS, STRIPING AND RAISED MARKERS

Delete this Section in its entirety and replace with the following:

905-1 DESCRIPTION: This work consists of furnishing, installing, maintaining and removing traffic signs, barricades, channelizing devices, striping and raised markers in accordance with the MUTCD, standard plans and construction plans; providing flaggers; and complying with all other requirements regarding the protection of the work, workers and safety of the public.

905-2 MATERIALS: Materials shall conform to the following Sections and Subsections.

Sign Backing (Blanks)	1020-1
Reflective Sign Sheeting	1020-1
Sign Posts	1020-1
Barricade Warning Lights	1020-1.1
Structural Aluminum	1020-1.2
Timber	1013
Hardware	1020-1.2(e)
Pavement Striping Tape	1020-2.1(a)
Traffic Paint	1020-2.2.3
Thermoplastic Pavement Markings	1020-2.2.1
Preformed Plastic Pavement Markings	1020-2.2.2
Raised Pavement Markers and Adhesives	1020-3

905-3 CONSTRUCTION:

905-3.1 Signs:

905-3.1.1 Temporary Signs and Barricades: The contractor shall furnish and install temporary construction signs and barricades before construction begins. When construction signs are in place and approved, existing permanent signs that are in conflict with construction signs shall be covered or removed. The Contractor shall furnish and install additional signs as necessary during construction, relocate signs on the project when required, maintain signs by cleaning or replacing as necessary, and remove construction signs upon completion of the work.

Contractor shall provide and maintain project signs for the duration of the project. Two (2) project signs shall be constructed, painted, lettered and erected in accordance with the details shown at the end of this Section. If paint or lettering is damaged it shall be touched up after erection. The project signs shall be installed at each end of the project at locations satisfactory to the Engineer and so not to cause a sight or safety problem. Upon completion of the project, the signs shall be removed by the Contractor. No direct payment will be made to the contractor for the project signs.

905-3.1.2 Permanent Roadside Signs: Removal of existing signs shall be coordinated with new sign construction to provide adequate signing at all times.

- a. **Posts:** The Contractor shall determine length of post required at each sign location. Posts shall be driven vertical by methods that will not damage posts. Minimum ground penetration shall be 2 feet for delineator and object marker signs, and 3 feet for other signs.
- b. **Sign Faces:** Signs shall be mounted 7 feet above pavement edge to bottom of sign, except that a secondary sign below another sign shall be mounted 4 feet from pavement edge to bottom of sign. Signs shall have a lateral clearance of 2 feet from pavement edge (or face of curb) to edge of sign, except that delineators and object markers on open ditch sections shall have a lateral clearance of 2 feet from shoulder edge to sign. Sign shall be oriented at a 93° angle from roadway centerline to avoid specular glare.
- c. **Dead End Installations:** Timber barricades shall be constructed in accordance with Section 603.

Beam guardrail shall be installed in accordance with Section 901.

- d. **Relocation of Existing Sign:** The contractor shall dismantle the existing sign and post, and reinstall the sign on the existing post at its new location per Section 905. If, at the sole discretion of the engineer, the existing sign or post is deemed to be in poor condition, a new sign or post shall be installed as appropriate.

905-3.2 Pavement Striping:

905-3.2.1 Temporary Striping: Temporary centerline and lane line striping shall be placed at end of each day's asphalt pavement removal or surfacing operations on all lanes that are open to traffic. Centerlines and lane lines shall be marked with 4-foot long stripes on 40-foot centers.

Temporary striping for surfaces other than final surface may be made with striping tape, traffic paint or plastic markings. Temporary striping for final surface shall be striping tape placed to avoid conflict with permanent striping. Temporary striping shall be removed after completion of permanent striping (when specified).

905-3.2.2 Permanent Striping: This subsection is hereby deleted and Section 1195 Pavement Markings substituted therefore.

905-3.3 Raised Pavement Markers:

- a. **Surface Preparation:** Surfaces on which markers are to be applied shall be cleaned of materials that may reduce bond of adhesive. Surfaces shall be cleaned by blast cleaning or other methods which do not damage surface; however, blast cleaning equipment shall be provided with positive cutoff controls. Surfaces shall be blown dry immediately prior to marker placement.
- b. **Weather Limitations:** Markers shall not be applied when air temperature is below 50° F.
- c. **Marker Application:** Markers shall be placed with bituminous adhesive on asphalt surfaces and epoxy adhesive on concrete surfaces.
 - i. **Bituminous Adhesive:** Adhesive shall be applied to surface at approximately 400°F and marker immediately embedded in adhesive.
 - ii. **Epoxy Adhesive:** Adhesive shall be applied to surface at approximately 95°F and marker immediately embedded in adhesive. Voids in bottom of marker shall be filled with adhesive just before marker placement.

Adhesive bed area shall be equal to the bottom area of markers, and adhesive shall be applied in sufficient quantity to cause excess adhesive to be forced out around the perimeter of the marker. Voids in markers with an open grid pattern on bottom shall be filled with adhesive during placement.

Unless otherwise directed, the raised pavement markers shall be installed prior to the placement of the thermoplastic striping.

- d. **Blue Markers:** Blue raised reflective markers shall be placed at the locations of the existing markers or as directed. Unless otherwise directed, a blue marker shall be placed in the center of the closest lane opposite each fire hydrant.

905-5 MEASUREMENT:

a. Signing:

- i. **Temporary Signs and Barricades:** When the contract does not include a pay item for

"Temporary Signs and Barricades," the providing of temporary construction signs and barricades will not be measured for payment.

When a pay item for "Temporary Signs and Barricades" is included in the contract, the furnishing, erecting, maintaining and removing of temporary construction signs and barricades will be measured on a lump sum basis.

- ii. **Permanent Signs:** Signs will be measured by the square foot. No measurement will be made for posts.
- iii. **Delineators and Object Markers:** Delineators and object markers will be measured per each, including post.
- iv. **Dead End Installations:** Dead end road installations will be measured per each, including piling, posts, sign materials, reflectors, barricades and guardrail.
- v. **Relocation of Existing Signs:** The dismantling and reinstalling the existing sign on a post will be measured per each. New sign or posts will not be measured for payment.

b. Striping:

- i. **Temporary Traffic Striping:** When the contract does not include a pay item for "Temporary Traffic Striping" the providing of these markings will not be measured for payment.
- ii. When the contract includes an item for "Temporary Traffic Striping", the furnishing, placing, maintaining and removing these markings will be measured on a lump sum basis.
- iii. **Permanent Markings:** Striping will be measured by the linear foot, exclusive of gaps. Legends and symbols will be measured per each.

- c. **Raised Pavement Markers:** Raised pavement markers will be measured per each.

905-5 PAYMENT: Payment for traffic signs, striping and raised markers will be made at the contract prices.

Partial payments for temporary signs and barricades will be made in accordance with the following schedule;

<u>% of Total Contract Amount Earned</u>	<u>Allowable % of Lump Sum Price for Item</u>
1st Partial Estimate	20
25	40
50	60
75	80
100	100

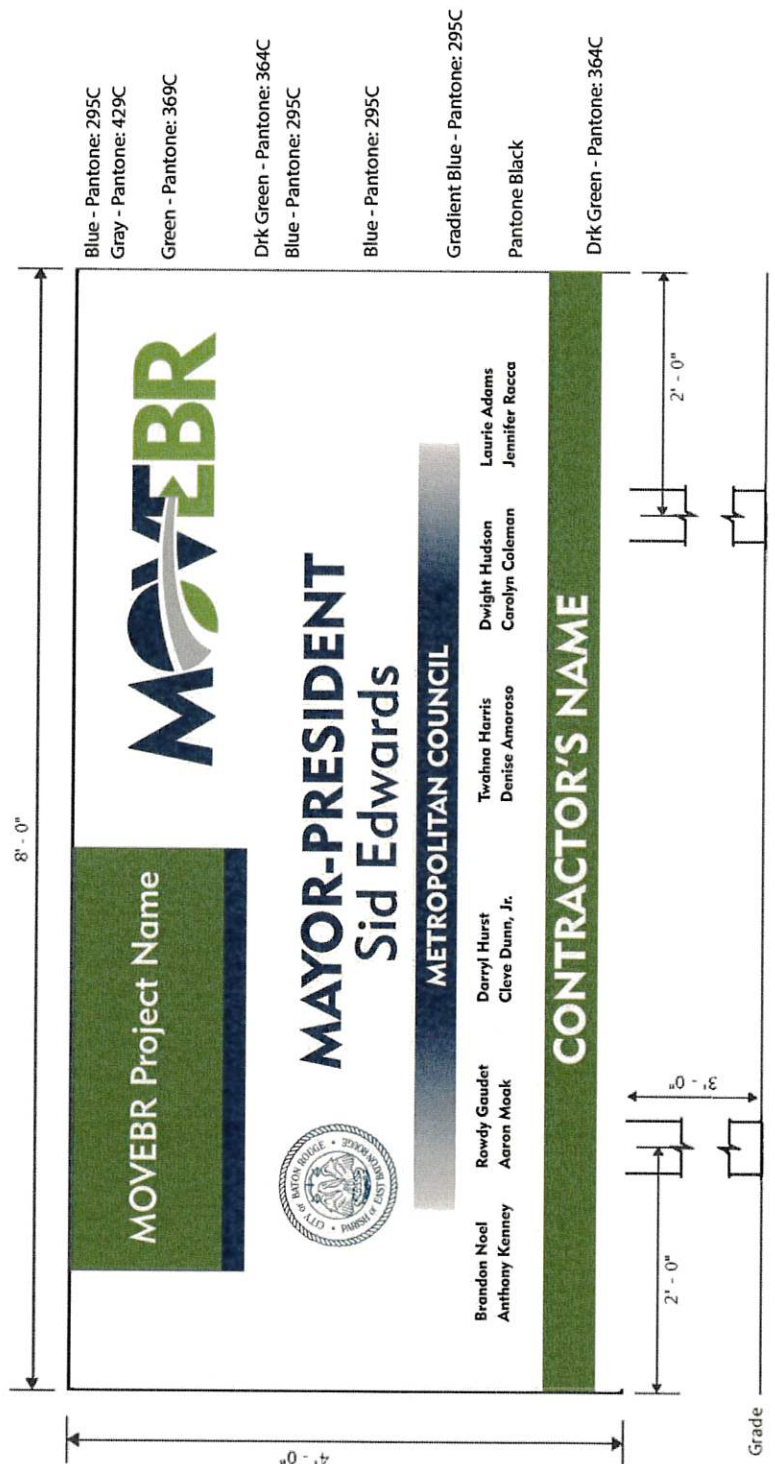
No direct payment will be made for removing existing pavement markings, project signs or Traffic Control Management.

905-6 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
9050100	Temporary Signs and Barricades	Lump Sum
9050200	Traffic Signs	Square Foot
9050300	Delineator	Each
9050400	Object Marker	Each
90505--	(Type) Dead End Installation	Each
9050600	Temporary Traffic Striping	Lump Sum
9051100	Raised Pavement Markers	Each
9900073	Relocation of Existing Traffic Signs	Each

CITY-PARISH PROJECT SITE SIGN
GENERAL NOTES:

1. BELOW PROJECT SIGN GRAPHIC IS A SAMPLE. USE OF CONTRACTOR'S NAME AND CURRENT COUNCILMEMBER NAMES ARE SUBJECT TO CHANGE. REQUIREMENTS FOR PROJECT SPECIFIC SIGN MUST BE VERIFIED BY CONTACTING MOVEBR@BRLA.GOV PRIOR TO MAKING OF SIGN.
2. THE SIGN SHALL BE CONSTRUCTED WITH 1/2" SINGLE FACE OMEGA BOARD (4'X8')
3. THE SIGN BACKGROUND SHALL BE WHITE OMEGA BOARD WITH 4 COLOR PROCESS PRINT AS SPECIFIED, SIGN EDGES SHALL BE COVERED AND TRIMMED WHITE VINYL EDGE (TYPICAL OMEGA BOARD FINISH)
4. THE CONTRACTOR SHALL ERECT AND MAINTAIN SIGN UNTIL THE PROJECT IS COMPLETED AND ACCEPTED. THE SIGN SHALL BE ERECTED AT A LOCATION DETERMINED BY THE PROJECT ENGINEER SO NOT TO CAUSE A SIGHT PROBLEM.
5. UNLESS OTHERWISE DIRECTED, THE SIGN SHALL BECOME THE PROPERTY OF THE CITY-PARISH UPON COMPLETION OF THE PROJECT.
6. SIGN SHALL BE ATTACHED TO TWO 4"x4" WOLMANIZED POSTS (PAINTED WHITE) 10' LONG WITH MINIMUM BURY OF 3'.
7. POST SHALL BE 2'O/C FROM EDGES OF SIGN AND TOP POSTS SHALL BE FLUSH WITH TOP OF SIGN.
8. SIGN SHALL BE FASTENED TO POST WITH 6 (3/8" XTO 3-1/2) GALVANIZED LAG BOLTS WITH GALVANIZED CUT WASHER. 3 PER POST, 6" FROM TOP/BOTTOM AND AT 2' MID-POINT. BOLT HEADS TOO BE PAINTED WITH ENAMEL PAINT TO MATCH SIGN COLORS.
9. ORIGINAL ARTWORK CAN BE PROVIDED TO CONTRACTOR UPON REQUEST BY SENDING AN EMAIL TO MOVEBR@BRLA.GOV



SECTION 907 CONCRETE CURBS, WALKS, DRIVES, AND INCIDENTAL PAVING

Section 907 of the Standard Specifications is deleted in its entirety and replaced by the following:

907-1 DESCRIPTION: This work consists of furnishing and constructing portland cement concrete curbs, walks, drives and incidental paving.

907-2 MATERIALS: Materials shall conform to the following Sections and Subsections.

Portland Cement Concrete (Class 5.5B3800)	1005
Reinforcing Steel	1006-1
Joint Filler	1007
Curing Compound	1008-1

907-3 CONSTRUCTION:

- a. **Subgrade:** The top 6" of subgrade shall be scarified and recompact to at least 95% of maximum density determined by AASHTO T 99. Subgrade surface shall be moistened at time concrete is placed.
- b. **Forms:** Forms shall be of either wood at least 1½" thick or metal, and shall be such that forms remain in position during concreting.
- c. **Slip-Forming:** Concrete may be placed by slip-form methods. Slip-formed concrete shall be placed with an extrusion machine designed to spread, consolidate and finish concrete in 1 pass of the machine such that minimum hand finishing is necessary. Sliding forms shall be rigidly held together to prevent spreading of forms. After passing of forms there shall be no noticeable slumping of concrete. Finished concrete shall be free from voids. Any additional finishing required shall be performed immediately after placement.
- d. **Integral Curb:** Curb forms shall be fastened to slab forms immediately after completion of pavement finishing. Concrete curbing shall be placed within 30 minutes after pavement has been finished.

Integral curb may be placed after pavement has hardened, provided deformed reinforcing dowel bars of specified size, type and spacing are inserted in concrete immediately after pavement has been finished.

Concrete for curb shall be spaded or vibrated sufficiently to eliminate voids, tamped to bring mortar to surface, floated smooth, and brush finished to a gritty texture. Edges shall be tooled to specified radius.

Curb joints shall match those in pavement and shall extend entirely through curb. Joints shall be filled with same filler used in the pavement, and curb edges at joints shall be tooled to a 1/4" radius.

- e. **Combination Curb and Gutter:** Concrete shall be struck off, spaded or vibrated to eliminate voids, tamped to bring mortar to surface, floated smooth, and brush finished to a gritty texture.

Curb and gutter shall be scored 3" deep at 20-foot intervals. Expansion joints shall be placed in curb and gutter at 100-foot intervals and at beginning and end of curvature at street intersections. Premolded 1/2" thick expansion joint filler shall extend for entire width and depth of curb and gutter, and joint edges shall be tooled to a 1/4" radius.

- f. **Walks, Drives and Incidental Paving:** Concrete shall be struck off, consolidated, tamped to bring mortar to surface, floated smooth, and brush finished to a gritty texture.
 1. **Walks:** Walks shall be scored 1/2" deep at intervals equal to width of walk, and expansion joints shall be placed in walks at 100-foot intervals and at junctions with curbs, drives and other walks. Expansion joints shall consist of 1/2" thick premolded joint filler extending for full width and depth of walk. Premolded 1/4" thick joint material shall be placed around manholes, utility poles, etc. that extend through walks.

2. **Drives:** Drives wider than 16 feet shall be longitudinally scored 1/2" deep at intervals of not more than 16 feet, and drives longer than 16 feet shall be scored 1/2" transversely at intervals of not more than 16 feet. Expansion joints shall be placed at junctions with curbs and concrete pavements. Expansion joints shall consist of 1/2" thick premolded joint filler extending for full width and depth of drive.
3. **Incidental Paving:** Paving shall be scored 1/2" deep at intervals of not more than 16 feet in any direction. Paving adjacent to jointed concrete shall be jointed to match adjacent concrete.

g. **Curing and Protection:** Curing and protection of concrete shall be in accordance with Subsection 502-9.

907-4 GRINDING AND HORIZONTAL SAW CUTTING OF EXISTING CONCRETE: Grinding and horizontal saw cutting are similar treatments for making corrective adjustments to grades of existing concrete pavement for sidewalks and paths to remove potential tripping hazards. Contractor shall use equipment that can grind or cut specified surfaces without causing spalls at cracks, joints, or other locations.

Concrete grinding or cutting shall be used to remove vertical offsets of 1 inch or less at joints and perpendicular to the flow of pedestrian traffic. Grinding or cutting of any offset greater than one inch must be approved by the Project Engineer. The repaired section surface shall have essentially the same or slightly rougher texture as the undamaged portion on either side of the joint or score line. Repaired surface shall conform to the non-slip coefficient of friction (ASTM C 1028 standard COF of 0.5 or above). This can be achieved by roughening the surface with a saw blade or other approved method. Grinding or cutting shall result in a slope no greater than 1:12.

The Contractor shall set up a pedestrian detour around the work area or, if permitted by the Project Engineer in lieu of a pedestrian detour, shall stop work to permit pedestrians to travel through work area on the sidewalk or path. The Contractor shall control all dust and shall clean all areas of debris caused by grinding or saw cutting operation at the end of each workday, or more frequently if deemed necessary by the Project Engineer. Sidewalks and paths shall be passable at the end of each workday or shall be barricaded and the closure and detour route shall be well marked.

907-5 MEASUREMENT: Quantities of integral curb, combination curb and gutter, walks, drives, incidental paving, and grinding or saw cutting (horizontal) of existing concrete for payment will be the contract quantities adjusted as required due to plan errors or plan changes.

907-6 PAYMENT: Payment for integral curb and combination curb and gutter will be made at the contract unit prices per linear foot. Payment for walks, drives and incidental paving will be made at the contract unit prices per square yard. Payment for grinding or saw cutting (horizontal) existing concrete will be made at the contract unit price per square foot.

No direct payment will be made for excavation, backfill or joint filler.

907-7 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
90701--	Integral Concrete Curb (Type)	Linear Foot
90702--	Concrete Curb and Gutter (Width)	Linear Foot
90703--	___" Concrete Walks	Square Yard
90704--	___" Concrete Drives	Square Yard
90705--	Concrete Step (Width)	Each
90706--	___" Incidental Concrete Paving	Square Yard
9070700	Grinding or Horizontal Saw Cutting Existing Concrete	Square Foot

PART X MATERIALS

SECTION 1015 DRAIN PIPE

Section 1015 of the Standard Specifications is deleted in its entirety and replaced by the following:

1015-1 JOINT SYSTEMS FOR DRAIN PIPE AND PRECAST CONCRETE DRAIN UNITS: All pipe joint systems and materials shall be listed on the LADOTD Approved Materials List (AML).

- a. Type 1 Joints (T1): Type 1 pipe joints shall be soil tight and shall not leak when the pipe joint assembly is filled with water.
- b. Type 2 Joints (T2): Type 2 pipe joints shall not leak when subjected to 5 psi hydrostatic pressure for 10 minutes.
- c. Type 3 Joints (T3): Type 3 Joints shall not leak when subjected to 10 psi hydrostatic pressure for 10 minutes. Also, concrete shall not leak when deflected to create a position $\frac{1}{2}$ inch wider than the assembled position on one side and subjected to hydrostatic pressure for an additional 10 minutes. Flexible pipe shall not leak when then deflected by 5 percent of the original diameter and subjected to 10 psi hydrostatic pressure for an additional 10 minutes.
- d. A Type 2 or 3 joint system may be substituted for a Type 1 joint system; a Type 3 joint system may be substituted for a Type 2 joint system.
- e. Use gaskets from the AML.

1015-2 CONCRETE DRAIN PIPE:

1015-2.1 Reinforced Concrete Pipe (RCP): Pipe shall conform to ASTM C 76, Class III, Wall A, B, or C Pipe. When extra strength pipe is required, use either Class IV or Class V as specified, Wall A, B, or C.

1015-2.2 Reinforced Concrete Pipe Arch (RCPA): Pipe arch shall conform to ASTM C 506, Class III pipe arch.

1015-2.3 Precast Reinforced Concrete Box Culverts (RCB): Precast box culvert shall conform to ASTM C1577 amended as follows:

- a. Use Table 1.
- b. Provide concrete with a Surface Resistivity at 28 days of 22 (k Ω -cm).
- c. When approved, minor surface cavities or irregularities which do not impair the service value of the unit and which can be corrected without marring its appearance shall be pointed with patching material from the Approved Materials List as soon as forms are removed.

1015-2.4 Joints and Gaskets: Joint systems shall comply with subsection 1015-1. Rubber gaskets for pipe joints shall comply with ASTM C443. Flexible sealants for pipe joints shall comply with ASTM C990.

1015-3 CORRUGATED METAL PIPE:

1015-3.1 Corrugated Steel Pipe and Pipe Arch: Pipe shall conform to AASHTO M 36, Types I and II, amended as follows:

- a. Pipe and pipe arch shall be galvanized in accordance with AASHTO M 218.

- b. Elbows, tees, and other in-line fittings shall be fabricated from sheets of the same thickness and coating material as the pipe or pipe arch to which they are joined.
- c. For helical pipe, no coil splices at pipe manufacturing plants will be allowed for pipe 30 inches in diameter or less. Helical pipe requiring joints shall have annular ends and shall have the ends of seams welded a minimum of 2 inches. Helical pipe ends shall be rerolled a minimum of two full standard corrugations to the same corrugation depth as the pipe when used with the appropriate jointing system.
- d. Pipe larger than 30 inches in diameter or any diameter longer than 30 feet shall have a minimum of two lifting lugs.
- e. All corrugated steel pipe or pipe arches shall be either bituminous coated or polymer coated.
 - 1. Bituminous coated pipe shall be coated in accordance with AASHTO M 190, Type A, fully bituminous coated.
 - 2. Polymer coated pipe shall conform to AASHTO M 245, Grade 10/10.
- f. Pipe arch dimensions shall comply with AASHTO M 245 and Table 1015-1.

1015-3.2 Corrugated Aluminum Pipe and Pipe Arch: Pipe shall conform to AASHTO M 196, amended as follows:

- a. Helical pipe shall have annular ends and shall have the ends of seams welded a minimum of 2 inches. Helical pipe ends shall be rerolled a minimum of two full standard corrugations to the same corrugation depth as the pipe when used with the appropriate jointing system.
- b. Pipe larger than 30" inches in diameter or any diameter longer than 30 feet shall have a minimum of two lifting lugs.
- c. Aluminum alloy sheet used in fabricating pipe shall conform to the applicable requirements of AASHTO M 197 for Alclad Alloy 3004-H34 for annular pipe, and Alclad Alloy 3004-H32 for helical pipe.
- d. Pipe arch dimensions shall comply with Table 1015-1.

1015-3.3 Joints and Gaskets: Joint systems shall comply with subsection 1015-1. For Type 1 joints, provide at least one line of approved gasket material under the band on each pipe end.

- a. Gaskets for pipe joint systems shall be from the AML.
 - 1. Rubber gaskets for pipe joints shall comply with ASTM C443. Gasket cross section shall be the following:
 - i. For pipe 36 inches in diameter or less – 13/16-inch
 - ii. For pipe greater than 36 inches in diameter with ½-inch deep corrugations – 7/8-inch
 - iii. For pipe greater than 36 inches in diameter with 1-inch deep corrugations – 1 3/8-inch
 - 2. Preformed flexible gaskets for pipe joints shall comply with ASTM C990. Gasket material shall be a minimum of 1 inch for ½-inch corrugation depth, and a minimum of 1 ½ inches for 1-inch corrugation depth.
- b. Coupling bands shall be same gage and coating as pipe (with a maximum of 12 gage). Coating shall be the same as used on the conduit. Minimum band width shall be 12 inches.
- c. Steel banding rods shall comply with AASHTO M 270, Grade 36 (M 270M, Grade 250). Welding

of rods will not be permitted. No more than two splices will be allowed.

- d. Hardware shall be galvanized in accordance with ASTM A153 or B633, Class Fe/ZN 25 or an approved mechanical galvanizing process complying with B695 that provides the same coating thickness.

TABLE 1015-1		
CORRUGATED METAL PIPE ARCH DIMENSIONS (INCHES)		
Round Equivalent, Inches	Steel & Aluminum	Steel
	2 2/3 in. by 1/2 in. Corrugation	3 in. by 1 in. or 5 in. by 1 in. Corrugation
15	17 x 13	--
18	21 x 15	--
21	24 x 18	--
24	28 x 20	--
30	35 x 24	--
36	42 x 29	40 x 31
42	49 x 33	46 x 36
48	57 x 38	53 x 41
54	64 x 43	60 x 46
60	71 x 47	66 x 51
66	77 x 52	73 x 55
72	83 x 57	81 x 59
78	--	87 x 63
84	--	95 x 67
90	--	103 x 71
96	--	112 x 75
102	--	117 x 79
108	--	128 x 83
114	--	137 x 87
120	--	142 x 91

1015-4 THERMOPLASTIC PIPE: Thermoplastic pipe and joint systems may be of any of the following types and shall be products listed on the AML. Thermoplastic pipe for underdrains and yard drains shall be perforated or no-perforated, as specified, and shall be from the AML. Perforations, if specified, shall comply with AASHTO M 252. Joints shall be bell and spigot type with rubber gaskets conforming to ASTM F 477. Perforations, if specified, shall conform to AASHTO M 252.

1015-4.1 Polyvinyl Chloride (PVC) Pipe:

- a. Smooth Wall PVC Pipe (PVCP): PVCP and gasket materials shall comply with AASHTO M 278 or ASTM 3034, SDR 35.
- b. Ribbed PVC Pipe (RPVCP): RVPVC may be either open profile or dual wall construction in accordance with the specified ASTM standards. Pipe and gasket materials shall comply with ASTM F 794 or ASTM F 949, Series 46 with UV inhibitors, and the resin shall have a minimum cell classification of 12454-C as defined in ASTM D 1784.

1015-4.2 Polyethylene (PE) Pipe:

- a. Corrugated Polyethylene Pipe Single Wall (CPEPSW): CPEPSW shall be perforated and shall comply with AASHTO M 252, Type C. Perforations shall comply with AASHTO M 252. Do not use CPEPSW as shoulder outlet underdrain pipe.

b. Corrugated Polyethylene Pipe Double Wall (CPEPDW):

1. When used for storm drain pipe, cross drains, or culverts, CPEPDW pipe and gasket materials shall comply with AASHTO M 294, Type S, with a minimum resin cell classification of 435400C in accordance with ASTM D3350.
2. When used for plastic underdrain pipe, the pipe and joint system shall comply with AASHTO M 252.
3. When used for yard drain pipe, the pipe and joint system shall comply with AASHTO M 252, Type S, with a minimum resin cell classification of 424420C in accordance with ASTM ASTM D 3350, or AASHTO M 294, Type S, with a minimum resin cell classification of 435400C in accordance with ASTM D3350.

1015-4.3 Joint Systems for Thermoplastic Pipe: Joint systems shall comply with subsection 1015-1. When using split coupling bands, use one piece that is composed of the same material as the pipe. The bands shall be the same thickness as the base pipe. The width of the band shall be equal to one-half the diameter of the pipe but a minimum of 12 inches wide.

SECTION 1016 SEWER PIPE

Delete this Section in its entirety and replace with the following:

SECTION 1016 SEWER PIPE

1016-1 GRAVITY SEWER PIPE: Contractor shall provide sewer pipes with the inside diameter shown on the Contract Documents. Diameters shown on the Drawings and listed in the pay items represent the required inside diameters, regardless of pipe material.

1016-1.1 Plastic Pipe: Pipe may be any of the following types:

1016-1.1.1 Polyvinyl Chloride (PVC) Pipe and Fittings:

- a. Polyvinyl chloride sewer pipe shall be green in color.

1016-1.1.1.1 PVC for Direct Bury Application:

- a. Solid Wall PVC

1. Pipe shall be of solid-wall construction and be available in laying lengths not exceeding 20 feet.
2. Pipe 15" diameter or smaller shall conform to ASTM D 3034; pipe larger than 15" diameter shall conform to ASTM F 679.
3. Material for PVC pipe from 4" to 15" shall conform to the requirements of ASTM D 1784 for cell classifications 12454. Material for PVC pipe from 18" to 27" shall conform to the requirements of ASTM D 1784 for cell classifications 12364 or 12454. Maximum filler content shall be 10 percent.
4. All pipe shall have an SDR of 35 and a minimum pipe stiffness of 46 psi when tested in accordance with ASTM D 2412. Where pipe depth is greater than 12 ft., provide pipe in SDR 26 with minimum pipe stiffness of 115 psi.
5. Joints shall be an integral bell and spigot-type with solid cross section elastomeric or rubber gasket ring conforming to ASTM D 3212. Gaskets shall meet the requirements of ASTM F 477. Use elastomeric factory installed gaskets to make joints flexible and watertight. Lubricant for rubber-gasketed joints shall be water soluble, non-toxic, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets. The manufacturer shall test a sample from each batch conforming to the requirements of ASTM D 2444.
6. All sewer fittings and accessories shall conform to the requirements of ASTM F 1336 and ASTM D 3034 or ASTM F 679 and shall have bell and/or spigot compatible with pipe. The stiffness of the fittings shall not be less than the stiffness of the adjoining pipe.

- b. Large Diameter Closed Profile PVC (21" – 54" only)

1. PVC closed profile pipe shall be permitted for 21" through 54" direct bury gravity sewer pipe.
2. The pipe shall meet the requirements of ASTM F-1803, Closed Profile, and have a smooth interior and effectively smooth exterior. Fittings shall be fabricated from pipe

meeting these standards.

3. Pipe and fittings shall be fabricated from PVC compounds meeting the minimum requirements of cell classification 12364 as defined by ASTM D-1784.
4. Joints shall have an integral bell and spigot with an elastomeric gasket and shall conform to the requirements of ASTM D-3212 and ASTM F-477. Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. The use of putty, fillers, rubber or plastic inserts or wedges to form either the inner or outer wall of the pipe will not be allowed on spigots or bells. Jointing shall be accomplished in accordance with the manufacturer's recommendations.
5. PVC closed profile pipe shall be designed to provide a minimum pipe stiffness value of 60 psi for all sizes when tested in accordance with ASTM D-2412.
6. Each pipe length and fitting shall be clearly marked with the name of the manufacturer, nominal size, cell classification, ASTM designation F-1803, pipe stiffness designation "PS-60", and manufacturer's date code.
7. Handling and storage shall be in accordance with the pipe manufacturer's recommendations.

1016-1.1.1.2 Non-metallic Restrained Joint PVC:

- a. Pipe shall be manufactured only from water distribution pipe and couplings conforming to AWWA C900 (4-inch through 12-inch) and AWWA C905 (14-inch through 48-inch). The restrained pipe joint system shall meet all short and long-term pressure test requirements of AWWA C900 and AWWA C905, respectively.
- b. The compound shall qualify for a Hydrostatic Design Basis (HDB) of 4000 psi for water at 73.4 degrees F., in accordance with the requirements of ASTM D2837.
- c. Nominal outside diameters and wall thicknesses of thrust-restrained pipe shall conform to the requirements of AWWA C900 and AWWA C905. Pipe shall be furnished in standard lengths of 20 feet.
- d. PVC pipe shall be in accordance with Table 1016-1.
- e. Green or white pipe shall be supplied, unless otherwise agreed upon at time of purchase.
- f. Pipe and couplings shall be made from unplasticized PVC compounds having minimum cell classification of 12454, as defined in ASTM D1784.
- g. Pipes shall be joined using non-metallic couplings which have been designed as an integral system for maximum reliability and interchangeability. High-strength flexible thermoplastic splines shall be inserted into mating precision-machined grooves in the pipe and coupling to provide full 360-degree restraint with evenly distributed loading. No external pipe-to-pipe restraining devices, which clamp onto or otherwise damage the pipe surface as a result of point-loading, shall be permitted.
- h. Couplings shall be designed for use at the rated pressures of the pipe with which they are utilized, and shall incorporate twin elastomeric sealing gaskets meeting the requirements of ASTM F477. Joints shall be designed to meet the leakage requirements of ASTM D3139.
- i. Every pipe and machined coupling shall pass AWWA C900/C905 hydrostatic proof test

requirements.

j. Pipe shall be legibly and permanently marked in ink with the following information:

1. Manufacturer and Trade Name
2. Nominal Size and DR Rating / Pressure Class
3. Hydrostatic Proof Test Pressure (NSF-61)
4. Manufacturing Date Code

1016-1.1.1.3 Fusible Polyvinylchloride (FPVC) Pipe:

- a. Fusible PVC pipe shall be permitted for only 4" through 16" diameter gravity sewer pipe.
- b. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.
- c. Fusible polyvinylchloride pipe shall conform to ASTM D3034 or ASTM F679.
- d. Fusible polyvinylchloride pipe may instead conform to AWWA C900 or AWWA C905, if applicable. Testing shall be in accordance with AWWA standards for any of these pipe types. If the AWWA standards are used, pipe diameters shall be in Ductile Iron Pipe Sizes (DIPS).
- e. Rework material shall be allowed per ASTM D3034, ASTM F679, AWWA C900 or AWWA C905 standards.
- f. All pipe shall have an SDR of 35 and a minimum pipe stiffness of 46 psi when tested in accordance with ASTM D 2412. Where pipe depth is greater than 20 ft., provide pipe in SDR 26 with minimum pipe stiffness of 115 psi.
- g. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- h. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
- i. Fusible polyvinylchloride pipe shall be green in color for wastewater use.
- j. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:
 1. Nominal pipe size
 2. PVC
 3. Dimension Ratio, Standard Dimension Ratio or Schedule (omit for ASTM D3034 or ASTM F679 pipe)
 4. Pipe legend or stiffness designation, or AWWA pressure class, or standard pressure rating for non-AWWA pipe
 5. AWWA Standard designation number or pipe type for non-AWWA pipe (omit for ASTM D3034 or ASTM F679 pipe)
 6. Extrusion production-record code
 7. Trademark or trade name
 8. Cell Classification 12454 and/or PVC material code 1120 may also be included.
- k. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.
- l. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed with the following minimum requirements:

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process.

m. Handling and storage shall be in accordance with the pipe manufacturer's recommendations.

1016-1.1.2 High Density Polyethylene (HDPE) Pipe and Fittings:

- a. HDPE Pipe for gravity sewers shall be as specified in Section 1016-2.2.
- b. HDPE Pipe for gravity sewers shall also have a light interior color.
- c. Electrofusion Fittings: Fittings shall be made of HDPE material in accordance with subsection 1016-2.2a. Electrofusion (EF) fittings shall have a manufacturing standard of ASTM F 1055.
 1. These fittings shall be supplied with an integral identification resistor and an ISO compliant 24 bit barcode which is recognized by fusion processors to set the proper fusion parameters.
 2. The electrofusion processor used must be capable of reading and storing the input parameters and the fusion results for later download to a record file which will be made available to the Engineer.
 3. These fittings, such as EF couplings, gasketed EF sewer saddles, and EF flex restraints, shall be for use with pipe conforming to ASTM D 2513/3035, F-714, and with butt fittings conforming to ASTM D 3216 as applicable.
 4. Fittings shall have a pressure rating equal to the pipe unless otherwise specified.
 5. ASTM F2620 and the pipe manufacturer's recommended procedure shall be observed for butt fusion and saddle fusion joints.
 6. ASTM F1290 and the electrofusion fitting manufacturer's recommended joining procedure shall be observed for electrofusion joints.
 7. Field fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of certified training within the past year, specific to the fusion joint type and equipment to be utilized for the project.

1016-1.2 Ductile Iron Pipe: Ductile Iron Pipe for gravity sewers shall be as specified in Section 1016-2.3.

1016-1.3 Steel Pipe: Pipe less than 6" diameter shall be galvanized steel pipe conforming to ASTM A 53, Type E or S, Grade A.

Pipe 6" diameter and larger shall conform to AWWA C 200, Class 125. Fittings shall conform to AWWA C 208. Pipe and fittings shall be coal-tar lined and coated in accordance with AWWA C 203.

1016-1.4 Fiberglass Reinforced Polymer (FRP) Pipe:

- a. The pipes shall be manufactured in accordance with ASTM D3262. Pipe materials shall conform to the following:
 1. Resin Systems: The manufacturer shall use only approved polyester resin systems with a proven history of performance of in this particular application. The historical data shall have been acquired from a composite material of similar construction and composition

as the proposed product.

2. Glass Reinforcements: The reinforcing glass fibers to be used to manufacture the components shall be of the highest quality commercial grade of glass filaments suitably treated with binder and sizing compatible with impregnating resins.
 3. Silica Sand: Sand shall be minimum 98% silica with a maximum moisture content of 0.2%.
 4. Additives: Resin additives, such as curing agents, pigments, dyes, fillers, thixotropic agents, etc., when used, shall not detrimentally effect the performance of the product.
 5. Elastomeric Gaskets: Gaskets shall meet ASTM F477 and be supplied by qualified gasket manufacturers and be suitable for the service intended.
- b. The internal liner resin shall be suitable for service as sewer pipe, and shall be highly resistant to exposure to sulfuric acid as produced by biological activity from hydrogen sulfide gases. Pipe shall meet or exceed requirements of ASTM D 3681.
 - c. Minimum pipe stiffness when tested in accordance with ASTM D2412 shall normally be 46 psi.
 - d. The pipe shall be field connected with glass reinforced plastic sleeve couplings that utilize elastomeric sealing gaskets as the sole means to maintain joint water tightness. The joints shall utilize elastomeric sealing gaskets and meet the performance requirements of ASTM D4161.
 - e. Fittings: Flanges, elbows, reducers, tees, and other fittings shall be capable of withstanding operating conditions when installed. They may be contact molded or manufactured from mitered sections of pipe joined by glass fiber reinforced overlays.
 - f. Pipe shall be supplied in nominal lengths of 20 feet. Shorter and custom lengths will be supplied as defined by the project requirements. The minimum wall thickness shall be per the manufacturer's design in accordance with ASTM D3567. Pipe ends shall be square to the pipe axis with a maximum tolerance of 1/8".

1016-1.5 Vitrified Clay Pipe (VCP) for Microtunneling and Pipe-Jacked Tunnels:

- a. Vitrified clay pipe and joints for jacking and microtunneling pipe shall conform to ASTM C 700 and ASTM C 1208.
- b. Joints: All VCP joints shall consist of watertight seat, an elastomeric sealing element, a sleeve, and a load distribution medium (compression disc).
 1. Elastomeric Sealing Gaskets: Gaskets shall conform to the requirements ASTM C 1208 and the test requirements of ASTM D 395, D 412, D 471 and D 573.
 2. All sleeves shall bridge between pipe sections. Stainless steel joint sleeves/couplings shall meet the requirements per grade 316L of ASTM A240\240M.
 3. Water tightness: Joints shall be fully watertight and shall develop the full strength of the pipe. Sealing elements shall be bonded to the bearing surface or shall be positively positioned in a recess. The manufacturer shall certify the joints to be watertight to exceed the maximum project design water head pursuant to ASTM C 828, Standard Test Methods for Low Pressure Air Testing of Vitrified Clay Pipe Lines.

4. Load Distribution Medium: All joints shall be equipped with a load distribution medium (i.e., Plywood spacer or compression disc) which shall distribute the jacking force uniformly around the pipe's jacked bearing surface. All load distribution mediums shall prevent the jacking load from being concentrated on a specific area (i.e., Point loading) of the pipe that would result in damage or failure to the pipe. The width of the compression disc shall not exceed the maximum wall thickness of the pipe, nor shall it extend into the flow line or inhibit the installation of the sleeve onto the spigot end of the connecting pipe.
 5. When the pipes are assembled, the joints shall not extend beyond the pipes outside surface and shall not restrict installation during jacking.
 6. Joint deflection shall be in strict accordance with manufacturer's recommendations.
- c. Clay pipes shall meet applicable standards when tested in accordance with ASTM C 301.

1016-1.6 Fiberglass Reinforced Polymer (FRP) Pipe for Micro tunneling and Pipe-Jacked Tunnels:

- a. The pipes shall be manufactured in accordance with ASTM D3262. Pipe materials shall conform to the following:
 1. Resin Systems: The manufacturer shall use only polyester resin systems with a proven history of performance in this particular application. The historical data shall have been collected from applications of a composite material of similar construction and composition as the proposed product.
 2. Glass Reinforcements: The reinforcing glass fibers used to manufacture the components shall be of highest quality commercial grade glass filaments with binder and sizing compatible with impregnating resins.
 3. Silica Sand: Sand shall be minimum 98% silica with a maximum moisture content of 0.2%.
 4. Additives: Resin additives, such as curing agents, pigments, dyes, fillers, thixotropic agents, etc., when used, shall not detrimentally effect the performance of the product.
 5. Elastomeric Gaskets: Gaskets shall meet ASTM F477 and be supplied by qualified gasket manufacturers and be suitable for the service intended.
- b. Pipe manufacturing process to result in a dense, nonporous, corrosion-resistant, consistent composite structure. Do not use stiffening ribs or rings.
- c. The internal liner resin shall be suitable for service as sewer pipe, and shall be highly resistant to exposure to sulfuric acid as produced by biological activity from hydrogen sulfide gases. Pipe shall meet or exceed requirements of ASTM D 3681.
- d. Joints: All FRP joints shall consist of watertight seat, an elastomeric sealing element, a sleeve, and a load distribution medium (compression disc). All FRP joints shall meet the performance requirements of ASTM D 4161 and conform to the following:
 1. Seat: The seat shall be formed at the time of fabrication or machined after fabrication and shall be watertight when assembled and combined with an elastomeric sealing element.
 2. Elastomeric Sealing Gaskets: Gaskets shall conform to the requirements of ASTM F 477.

3. All sleeves shall bridge between pipe sections. Unless otherwise specified, the pipe shall be field connected with fiberglass sleeve couplings.
 4. Load Distribution Medium: All joints shall be equipped with a load distribution medium (i.e., Plywood spacer or compression disc) which shall distribute the jacking force uniformly around the pipe's jacked bearing surface. All load distribution mediums shall prevent the jacking load from being concentrated on a specific area (i.e., Point loading) of the pipe that would result in damage or failure to the pipe. The width of the compression disc shall not exceed the maximum wall thickness of the pipe, nor shall it extend into the flow line or inhibit the installation of the sleeve onto the spigot end of the connecting pipe.
 5. The joint shall have the same outside diameter as the pipe so when the pipes are assembled; the joints are flush with the pipes outside surface and does not restrict the installation during jacking.
 6. Allowable joint deflection shall be in strict accordance with the manufacturer's recommendations.
- e. Fittings: Flanges, elbows, reducers, tees, and other fittings shall be capable of withstanding operating conditions when installed. They may be contact molded or manufactured from mitered sections of pipe joined by glass fiber reinforced overlays.
- f. Dimensions and Tolerances: All dimensions and sizes of pipe shall conform to the following:
1. Diameters: The actual outside diameter of the pipes shall be in accordance with Table 3 of ASTM D 3262 for gravity sewers.
 2. Lengths: The pipe standard length will be approximately 10 feet. A maximum of 10 percent of the lengths, excluding special order pipes, may be supplied in random lengths.
 3. Wall Thickness: The minimum average wall thickness shall be the stated design thickness. The minimum single point thickness shall not be less than 90 percent of the stated design thickness.
 4. End Squareness: Pipe ends shall be square to the pipe axis.
 5. Tolerance of Fittings: The tolerance of the angle of an elbow and the angle between the main and leg of a wye or tee shall be plus or minus 2 degrees. The tolerance on the laying length of a fitting shall be plus or minus 2 inches.
- g. Stiffness Classes: Stiffness class of FRP pipe shall satisfy design requirements, but shall not be less than 46 psi. Stiffness class of FRP in a pipe jacking operation shall be governed either by the ring deflection limitations or by a pipe design providing longitudinal strength required by the jacking method and shall satisfy design requirements stated below:
1. Pipe stress calculations based on jacking loads shall be performed to conform with Section 819 - Microtunneling and Pipe Jacked Tunnels.
 2. Ring deflection calculations shall be performed accordance to AWWA-M5 for fiberglass pipe in buried applications, to ensure that predicted pipe deflection will be less than 5 percent under long-term loading conditions (soil prism load) for the highest density of soil overburden and surcharge loads. Deflection on calculations shall be prepared using long-term (drained) values for soil parameters contained in the geotechnical investigation report for the Project, or other site-specific data obtained by the Contractor as approved by the Engineer.

1016-1.7 Polymer Concrete Pipe for Microtunneling and Pipe-Jacked Tunnels:

- a. Polymer Concrete Pipe (PCP) for use in microtunneling/tunneling installations for sanitary sewers shall be manufactured in accordance with ASTM D 6783-02.
 1. Minimum compression strength of 13,000 psi is required. The pipe-jacking load for the pipe shown on the Drawings shall be determined by the contractor for the geotechnical and other specific conditions of this project. Do not use stiffening ribs or rings.
- b. Wall Resin: The polyester wall resin used to bond the aggregate material shall be isophthalic, orthophthalic, or other approved resin with a minimum tensile elongation of two (2) percent. The resin content shall be no less than 9 percent by weight. The resin used shall have a proven history of performance in chemical solutions in a sanitary sewer environment ranging from pH 1.0 to pH 10.0.
- c. Aggregate: All PCP shall be comprised of aggregates that have a maximum grain size of 5/8 inch and sand that contains a maximum grain size of 0.08 inches. The filler material shall be a quartzite powder. All aggregate, sand, and filler material shall be washed and dried prior to fabrication. All aggregate and sand materials used in fabrication of the pipe shall be of like material and mined from the same source.
- d. Joints: All PCP joints shall consist of watertight seat, an elastomeric sealing element, a sleeve, and a load distribution medium (compression disc). All PCP joints shall meet the performance requirements of ASTM D 4161 and conform to the following:
 1. Seat: The seat shall be formed at the time of fabrication and shall be watertight when assembled and combined with an elastomeric sealing element. Seats shall not be ground after fabrication.
 2. Elastomeric Sealing Gaskets: Gaskets shall conform to the requirements of ASTM F 477.
 3. All sleeves shall bridge between pipe sections. Stainless steel joint sleeves/couplings shall meet the requirements of ASTM A 276.
 4. Water tightness: Joints shall be fully watertight and shall develop the full strength of the pipe. Sealing elements shall be bonded to the bearing surface.
 5. Load Distribution Medium: All joints shall be equipped with a load distribution medium (i.e., Plywood spacer or compression disc) which shall distribute the jacking force uniformly around the pipe's jacked bearing surface. All load distribution mediums shall prevent the jacking load from being concentrated on a specific area (i.e., Point loading) of the pipe that would result in damage or failure to the pipe. The width of the compression disc shall not exceed the maximum wall thickness of the pipe, nor shall it extend into the flow line or inhibit the installation of the sleeve onto the spigot end of the connecting pipe.
 6. The joint shall have the same outside diameter as the pipe so when the pipes are assembled, the joints are flush with the pipes outside surface and does not restrict the installation during jacking.
 7. No joint deflection of any amount shall be allowed.

- e. **Dimensions and Tolerances:** All dimensions and sizes of pipe shall conform to the following:
1. **Length:** The typical pipe lengths shall have nominal dimensions of 3 feet, 6 feet or a maximum length of 10 feet.
 2. **Minimum wall thickness:** The minimum wall thickness shall be as needed to support the anticipated jacking forces with a factor of safety of 3.0 at the joints.
 3. **Out of straight:** Pipes shall not deviate from straight by more than 0.06 inch per linear foot. Measurement shall be taken by measuring the gaps between the pipe wall and a straightedge placed along any longitudinal line on the pipe's exterior surface.
 4. **Out of round:** The inside and outside diameters shall not vary from a true circle by more than 1.0 percent of its designed diameter. The out-of-round dimensions are the difference between the maximum and minimum diameters measured at any one location along the barrel. The compression disk shall be installed in the bell end of the pipe at the factory as part of the manufacturing process.
 5. **Out of square:** The ends of the pipe shall be perpendicular to the straight long axis with a tolerance of 0.125 degrees.
 6. **Diameter:** All diameters for PCP pipe shall be in accordance with tolerances specified by Table 2 in ASTM D 6783-02.

1016-2 FORCE MAIN SEWER PIPE:

- a. Contractor shall provide sewer force main pipes with Ductile Iron Pipe (DIPS) diameters shown on the Contract Documents. Diameters shown on the Drawings and listed in the pay items represent the required DIPS diameters, regardless of pipe material, unless otherwise noted.

1016-2.1 Polyvinylchloride (PVC) Pipe and Fittings:

- a. PVC pressure pipe (4-inch through 12-inch) and large PVC pressure pipe (14-inch through 48-inch) shall conform to the applicable requirements of AWWA C900 and AWWA C905, respectively, and the additional requirements herein.
- b. The pipe shall be of the diameter and pressure class indicated, shall be furnished complete with rubber gaskets, shall be provided as required in the Contract Documents.
- c. Materials used in manufacture of the pipe shall be tested in accordance with the requirements of this Section and the applicable ASTM and AWWA standards.
- d. Joints for the buried PVC pipe shall be an integral bell manufactured on the pipe employing a rubber ring joint. The bell shall be the same thickness as of the pipe barrel, or greater thickness. Where indicated, restrained joint pipe shall be ductile iron pipe or PVC pipe with approved Mechanical Joint (MJ) restrainer glands.
- e. Joint deflection at the joint shall not exceed 75 percent of the maximum deflection recommended by the manufacturer. No deflection of the joint shall be allowed for joints that are over-belled or not belled to the stop mark.
- f. PVC pipe shall be in accordance with the following table:

**TABLE 1016-1
PVC PRESSURE PIPE DATA**

WALL CONSTRUCTION	MANUFACTURER	AWWA DESIGNATION	SDR (MAX)	DIAMETER SIZE RANGE
Solid	See QPL	AWWA C900 (235 psi)	DR 18	4" to 12"
		AWWA C905 (165 psi)	DR 25	14" to 36"

- g. Fittings shall be ductile iron conforming to the requirements of AWWA C153 or AWWA C110 and shall have a minimum pressure rating of 250 psi. Bends, tees and other ductile iron fittings shall be restrained with the use of an approved Mechanical Joint restrainer gland or other means as indicated in the Contract Documents. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.
- h. All ductile iron fittings shall be lined and coated with Ceramic Epoxy: Protecto-401 by Induron Protective Coatings, Series 431 PermaShield by TNEMEC, Permox-CTF by Permite, or approved equal.
- i. Each fitting shall be clearly labeled to identify its size and pressure class.
- j. Gaskets shall meet the requirements of ASTM F477. Use elastomeric factory- installed gaskets to make joints flexible and watertight. Lubricant for rubber- gasketed joints shall be water soluble, non-toxic, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets.
- k. Polyvinyl chloride sewer force main pipe shall be green in color.

1016-2.1.1 Fusible Polyvinylchloride (FPVC) Pipe:

- a. Fusible PVC pipe shall be permitted for only 4" through 16" diameter sewer force main pipe.

- b. Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905.
- c. Rework material shall be allowed per AWWA C900 and AWWA C905 standards.
- d. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- e. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
- f. PVC pipe shall be in accordance with Table 1016-1.
- g. Fusible polyvinylchloride pipe shall be green in color for wastewater use.
- h. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:
 - 1. Nominal pipe size
 - 2. PVC
 - 3. Dimension Ratio, Standard Dimension Ratio or Schedule
 - 4. AWWA pressure class
 - 5. AWWA Standard designation number
 - 6. Extrusion production-record code
 - 7. Trademark or trade name
 - 8. Cell Classification 12454 and/or PVC material code 1120 may also be included.
- i. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.
- j. Connections and Fittings:
 - 1. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.
 - 2. Ductile Iron Fittings:
 - i. Fittings shall be ductile iron conforming to the requirements of AWWA C153 or AWWA C110 and shall have a minimum pressure rating of 250 psi. Bends, tees and other ductile iron fittings shall be restrained with the use of an approved Mechanical

Joint restrainer gland or other means as indicated in the Contract Documents. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.

ii. All ductile iron fittings shall be lined and coated with Ceramic Epoxy: Protecto-401 by Induron Protective Coatings, Series 431 PermaShield by TNEMEC, Permox-CTF by Permite, or approved equal.

iii. Each fitting shall be clearly labeled to identify its size and pressure class.

3. Fusible Polyvinyl Chloride Sweeps or Bends:

i. Fusible polyvinyl chloride sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe that they are joining together.

ii. Fusible polyvinyl chloride sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation, and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.

iii. Standard fusible polyvinyl chloride sweep or bend angles shall not be greater than 22.5 degrees, and shall be used in nominal diameters ranging from 4 inch through 16 inch.

k. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed with the following minimum requirements:

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process.

l. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed with the following minimum requirements:

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process.

- m. Handling and storage of the pipe shall be in accordance with the pipe manufacturer's recommendations.

1016-2.2 High Density Polyethylene (HDPE) Pipe and Fittings:

- a. Polyethylene pipe shall be made from HDPE material having a material code of PE3408 or higher. The material shall meet the requirements of ASTM D 3350 and shall have a minimum cell classification of PE345464C (345464E for gray HDPE pipe).
- b. Pipe and Fittings: The pipe shall meet the requirements of AWWA C906. Pipe shall be in ductile iron pipe sizes (DIPS). The pressure rating shall be 160 psi with a maximum dimension ratio (DR) of 11. Laying lengths shall be 40-ft standard.
- c. Pipe and fittings shall be marked as prescribed by AWWA C906. Pipe markings shall include nominal size, OD base (ie: 12-inch ductile iron pipe sizing, DIPS), dimension ratio, pressure class, AWWA C906, manufacturer's name, manufacturer's production code including day, month, and year extruded, and manufacturer's plant and extrusion line.
- d. Workmanship: Furnish pipe and fittings that are homogeneous throughout and free from visible defects such as foreign inclusions, concentrated ridges, discoloration, pitting, varying wall thickness, cracks, holes, foreign material, blisters, and other deformities. Pipe with gashes, nicks, abrasions, or any such physical damage which may have occurred during storage and/or handling, which are larger/deeper than 10% of the wall thickness shall not be used and shall be removed from the construction site. Provide pipe as uniform as commercially practical in color, opacity, density, and other physical properties.
- e. HDPE sewer force main pipe shall have a green colored stripe on along the exterior length of the pipe.
- f. Connections and Fittings:
 - 1. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.
 - 2. MJ (Mechanical Joint) Adapters are to be used when connecting HDPE pipe to Ductile Iron Fitting. MJ Adapters are manufactured in standards IPS and DIPS sizes for connecting IPS sized or DIPS sized polyethylene pipe to mechanical joint fittings and appurtenances that meet AWWA C111.
 - 3. Ductile Iron Fittings:
 - i. Fittings shall be ductile iron conforming to the requirements of AWWA C153 or AWWA C110 and shall have a minimum pressure rating of 250 psi. Bends, tees and other ductile iron fittings shall be restrained with the use of an approved Mechanical Joint restrainer gland or other means as indicated in the Contract Documents. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.
 - ii. All ductile iron fittings shall be lined and coated in accordance with Section 1016-2.3.

- iii. Each fitting shall be clearly labeled to identify its size and pressure class.
- iv. Gaskets shall meet the requirements of ASTM F477. Use elastomeric factory-installed gaskets to make joints flexible and watertight. Lubricant for rubber-gasketed joints shall be water soluble, non-toxic, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets.

1016-2.3 Ductile Iron Pipe and Fittings:

- a. Lined and polyethylene-wrapped ductile iron pipe shall conform to AWWA C150 and C151, subject to the supplemental requirements in this Section. The pipe shall be of the diameter and class indicated, and shall be provided complete with rubber gaskets, specials, and fittings as required under the Contract Documents. Nominal pipe laying lengths shall be 20 feet.
- b. Fittings shall be ductile iron conforming to the requirements of AWWA C153 or AWWA C110 and shall have a minimum pressure rating of 250 psi.
- c. All pipe shall have a minimum pressure rating as indicated in Table 1016-2, or higher ratings as indicated in the Contract Documents.

**TABLE 1016-2
MINIMUM PRESSURE CLASS**

PIPE SIZES (inch)	PRESSURE CLASS (psi)
4-12	350
14-20	250
24	200
30-64	150

- d. The Contractor shall legibly mark specials 24-inches in diameter and larger in accordance with the laying schedule and marking diagram. Each fitting shall be marked at each end with top field centerline.
- e. Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing on the Contract Drawings. The locations of correction pieces and closure assemblies are shown on the Contract Drawings. Any change in location or number of said items shall only be as accepted by the Engineer.
- f. Interior Linings:
 - 1. Preparation: Brush-off blast cleaning conforming to SSPC-SP7.
 - 2. Liner thickness: Minimum 40 mils, for pipe barrel interior.
 - 3. Testing: ASTM G 62, Method B for voids and holidays; provide written certification.
 - 4. Acceptable Lining Materials shall be Ceramic Epoxy: Protecto-401 by Induron Protective Coatings, Series 431 PermaShield by TNEMEC, Permox-CTF by Permite, or approved equal. Interior lining shall be applied in accordance with the manufacturer's recommendations.

5. Contractor shall seal cut ends, touch-up, or repair interior lining in accordance with manufacturer's recommendations.
- g. Exterior Coating: – Exterior pipe coating shall be in accordance with Section 822.
- h. All buried piping, fittings, steel lugs, rods, brackets, clamps and other metal components shall be polyethylene encased in accordance with subsection 1016-2.3.1.
- i. The pipe shall be designed, manufactured, tested, inspected, and marked according to AWWA C150 and C151 except where modified by this Section. The pipe and fittings shall be of the diameter and class indicated.
- j. Ductile iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, or restrained joints as required. Mechanical and push-on joints including accessories shall conform to AWWA C111.
- k. Flanged joints shall conform to AWWA C115. Flanged joints shall not be used in underground installations except within structures. Where threaded flanges are provided, the pipe wall thickness under the cut threads shall not be less than the calculated net thickness required for the pressure class of the pipe. All flanged piping shall be a thickness Class 53, per AWWA C115. All flanged joints shall be furnished with a minimum 1/8-inch, thick red rubber or styrene butadiene rubber gasket. The bolts and nuts shall be teflon coated high strength low alloy steel per AWWA C111 with head and nut dimensions as specified in ANSI B18.2. For bolts of 1-3/4-inches in diameter and larger, bolt studs with a nut on each end are recommended.
- l. Restrained joints shall be commercially available units provided by American Ductile Iron Pipe, U.S. Pipe, or approved equal. Joint restraining devices that impart point loads and/or wedging action on the pipe wall as a means of joint restraint shall not be allowed unless there are no other options for joint restraint available. Under such circumstances, the Contractor may propose such devices provided the following conditions are met and the request is made as a substitution:
1. A statement from the pipe manufacturer is provided accepting the use of the retaining devices and indicating that the use of such devices will in no way affect the warranty of the pipe and/or the performance of the pipe.
 2. The manufacturer of the device and the pipe manufacturer jointly provide instruction on the proper installation of the device to the personnel installing the units and provide certification to the Owner that the installers are adequately trained in the installation of the units and that all warranties are in full affect for the project.
 3. The devices shall be MegaLug Model 1100 as manufactured by EBAA Iron or approved equal.
- m. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. The Contractor shall require the pipe manufacturer to submit details complete with significant dimensions and tolerances and also to submit performance data indicating that the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field performance, the results of a test program shall be submitted.

1016-2.3.1 Polyethylene Encasement:

- a. Submittals:

1. **Product Data:** Submit product data for proposed film and tape for approval. Product shall be manufactured from virgin polyethylene, shall not be recycled and shall be purchased new for the project, clean, sound and without defects. Product shall comply with ANSI/AWWA C105/A21.5 – Polyethylene Encasement for Ductile-Iron Pipe Systems.
2. **Quality Assurance Plan:** Submit quality assurance plans for film manufacturing and field application.
 - i. **Film Manufacturing:** The manufacturer of polyethylene film for corrosion protection encasement of ductile iron pipe shall have a verifiable quality control system to assure that film is produced from only virgin polyethylene and that it complies with all requirements of this specification. Documentation of Quality Control procedures and test results shall be submitted and shall be made available for inspection for at least one year. A current ISO certificate may be used in lieu of other quality control documentation.
 - ii. **Field Application:** The contractor shall develop, and submit for approval, a comprehensive Quality Assurance Plan for installation of polyethylene encasement. Address all aspects of material and pipe handling, bedding, preparation of pipe surface, film installation and anchoring, service taps and backfill. Include written procedures to be used by installers.
 - iii. **Manufacturer's Certification:** Submit polyethylene film manufacturer's certification of compliance with this subsection. The polyethylene film manufacturer shall provide a notarized statement from an officer of the company that the film meets the inspection and all applicable material specifications of this specification. The manufacturer's statement of compliance must be verifiable. Statements from distributors or contractors shall not be accepted in lieu of a statement from the original manufacturer of the polyethylene film.
 - iv. **Installer Qualifications:** Polyethylene encasement shall only be installed by qualified persons who have been trained in the proper installation and handling procedures. Qualified persons shall be those that have had training and experience in the installation of polyethylene encasement for corrosion protection of ductile iron pipe. Such persons may be qualified by the Ductile Iron Pipe Research Association, ductile iron pipe manufacturers or engineering/inspection firms who offer training courses in the proper method(s) of installation. Proof of qualifications shall be submitted with the shop drawings and shall be provided to project inspectors upon request.

b. **Materials:**

1. **V-Bio Enhanced Polyethylene Encasement:**
 - i. Polyethylene encasement shall meet all the requirements for ANSI/AWWA C105/A21.5, Polyethylene Encasement for Ductile Iron Pipe Systems.
 - ii. Polyethylene encasement shall consist of three (3) layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than eight (8) mils (0.008 in.).
 - iii. The inside surface of the polyethylene wrap to be in contact with the ductile pipe exterior shall be infused with a blend of anti-microbial biocide to mitigate microbiologically influenced corrosion (MIC) and a volatile corrosion inhibitor to control galvanic corrosion.
2. **Polyethylene Tape:** Provide 1½-inch wide, plastic-backed, adhesive tape for fitting and anchoring the encasement. Acceptable tapes are Fulton No. 355, Polyken No. 900, Scotchwrap No. 50, or other approved tape. Fulton Tie Strips are an approved alternative to

tape. For patching or repairing the polyethylene film, use only polyethylene tape.

c. Installation:

1. Polyethylene encasement for corrosion protection of ductile iron pipe shall be installed in accordance with ANSI/AWWA C105/A21.5 and as required by the Contract Documents.
2. The wrap shall be overlapped one (1) foot in each direction at the joints and secured in place around the pipe with approved polyethylene tape.
3. All installations shall be carried out by personnel trained and equipped to meet these various requirements.

SECTION 1017 PRECAST CONCRETE SEWER AND DRAIN UNITS

Section 1017 of the Standard Specifications is deleted in its entirety and replaced by the following:

1017-1 PRECAST CONCRETE BOX CULVERTS: Precast reinforced concrete box culvert sections shall conform to ASTM C 850, table 1.

1017-2 PRECAST CONCRETE MANHOLES:

- a. Precast reinforced concrete manhole sections, transitions, conical sections, and base shall conform to ASTM C 478. Frames and covers shall conform to Subsection 1011-5. Lifting inserts shall be embedded in manhole walls; through-wall holes will not be permitted.
- b. Pipe connection openings shall be 4"±1/2" larger than pipe O.D.
- c. Sewer manhole bases shall have paved inverts, and sewer manhole sections shall have rubber gasket joints conforming to ASTM C 990 or C 443.
- d. Sewer manholes shall be externally sealed with rubber seal wraps conforming to ASTM C 877 (Type III – Chemically-Bonded Adhesive Butyl Bands).

1017-3 PRECAST CONCRETE DRAIN INLETS AND JUNCTION BOXES: Materials, workmanship and curing shall be as specified for Precast Concrete Water and Wastewater Structures in ASTM C 913-08.

Precasters are required to be National Precast Concrete Association (NPCA) certified or on the LA DOTD approved list. Installation of precast structures shall be in accordance with manufacturer's instructions. Any modifications to structures in field shall require precaster's written approval.

Units shall be cast with the specified number and size of pipe openings to incorporate the unit into the drainage systems. Other methods for connecting pipe to precast units using resilient connectors shall conform to ASTM C 1478-08.

The name or trademark of the manufacturer, the date of the casting, the structure number or the station number as shown on the plans, and the lot number shall be indented into the concrete or painted thereon with waterproof paint on each unit on the inside and outside of the unit in such a manner as to be legible at time of delivery.

Frames, grates and covers shall conform to Subsection 1011-5.

All reinforcing steel to be deformed grade 60 minimum rebar. Steel bar size & spacing may be adjusted from standard details as long as area of steel is maintained per foot. Minimum concrete cover for rebar steel is to be 1" for precast concrete walls and 1-1/4" for other precast members.

Concrete compressive strength for precast structures shall be 5000 psi at 28 days minimum. Concrete shall attain a minimum compressive strength of 4000 psi before shipping units.

Pipe connection openings shall be 4"±1/2" larger than pipe O.D. All pipe ends to be set flush with interior walls face. Pipe annular space is to be grouted with non-shrink grout after installation. Contractor is to grout base section as required to create inverts.

Joints between precast units are to be sealed with flexible plastic gasket material and wrapped with a 12" width of geotextile fabric. Joints between cast-in-place sections and/or precast units to be tongue and groove and sealed with Type II Grade A Epoxy or flat joint with a minimum of 12" of No. 4 bars at 18" centers (maximum)

All precast units to be equipped with at least 2 commercially manufactured embedded inserts rated for the structure's lift load in compliance with applicable ANSI and OSHA standards (minimum safety factor of 4). Embedded inserts are to be constructed of galvanized steel or corrosion resistant materials and installed by precast

manufacturer in accordance with supplier's instructions.

No lift inserts shall remain exposed on visible surfaces after the structure is installed. No lifting with chains wrapped around structure is permitted. Lifting devices shall be embedded in walls; through-wall holes will not be permitted.

Add the following Section:

SECTION 1112 ADJUSTING UTILITY BOXES

1112-1 DESCRIPTION AND SCOPE: This item shall consist of the adjustment in height of existing gas and water valve boxes and traffic and telecommunication vault boxes. It shall include furnishing and installing a riser ring to bring top of valve or vault box flush with surface.

1112-2 MATERIALS: All materials required for adjustment of boxes shall be of the same general type and kind as in the related existing structures and shall conform to the requirements of ASTM A48 Class 30, except that existing frames and covers shall be removed, cleaned and reused unless otherwise provided by the plans and/or special provisions.

1112-3 RAISING RINGS: Raising rings, where required, shall be of the size and shape as directed by the Engineer, or shown on the plans and as required to properly fit existing or replaced frame. Rings shall be finished or ground on seating surfaces so as to assure non-rocking fit in any position and interchangeability.

Where lock type castings are used, the locking device shall be such that the cover may be readily released from the ring, and all movable parts shall be of non-corrosive metals and arranged to avoid possible binding.

1112-4 MEASUREMENT: Adjustment of valve boxes, vault boxes, and similar structures will be measured by the structure as complete units of the type and size adjusted as herein above specified.

1112-5 PAYMENT: The number of structures adjusted, completed and accepted, measured as provided above, will be paid for at the contract unit price, which price and payment shall constitute full compensation for adjusting the structure in accordance with the plans and specifications; and for furnishing all labor, materials, equipment, tools and incidentals and the performance of all work necessary to complete the item.

1112-6 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
1112100	Adjusting Valve Boxes	Each
1112101	Adjusting Traffic Vault Boxes	Each
1112102	Adjusting Telecommunication Vault Boxes	Each
1112103	Adjusting Utility Boxes	Each

Add the following Section:

SECTION 1151 ASPHALT CONCRETE PAVEMENT

DESCRIPTION OF WORK

Utility Trench Cuts for Sanitary Sewer, Storm Drains, Etc.: Backfill and compact utility trench in accordance with specifications and standard plans for the relative type of utility. Existing base shall be replaced with a minimum 7" thickness of asphalt base course and minimum 2" thickness of asphalt wearing course. Asphalt shall be placed and compacted in 3" maximum lifts. The limits of the pavement repair shall be as shown on the Contract Documents. Unless otherwise approved by the Engineer, pavement repair outside of the established limits shall be at no additional cost to the Owner.

The type of Asphalt to be used on this project shall be Wearing Course Level 2F and Base Course Level 1. Mix shall comply with all requirements of SECTIONS 502, 503, 504 & 510 of the LADOTD 2016 *SUPPLEMENTAL SPECIFICATIONS*, PART V ASPHALT PAVEMENTS, and LADOTD publication "*APPLICATION OF QUALITY ASSURANCE SPECIFICATIONS FOR ASPHALT CONCRETE MIXTURES*" with respect to design of mixtures, materials, equipment, quality control, roadway operations, paving, testing, tolerances, etc.

All submittals shall be as directed by the project engineer.

MEASUREMENT & PAYMENT

Measurement and Payment shall be per the Section 510 of the LADOTD 2016 *SUPPLEMENTAL SPECIFICATIONS* PART V ASPHALT PAVEMENTS-.

PAY ITEM

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
1151300	Restore Asphalt Concrete Pavement and Base	Square Yard

Add the following Section:

SECTION 1195 PAVEMENT MARKINGS

1195-1 GENERAL:

The Contractor shall furnish all of the necessary trained personnel, sufficient equipment, proper traffic control and all materials, including reflectorized glass spheres, to install pavement markings at specified locations within East Baton Rouge Parish.

The Contractor shall provide written certification that all materials used in this contract meet the specifications contained herein. This certifications must be submitted at the pre-construction conference.

The Contractor shall lay out and install all pavement markings, including no passing zones, according to the Manual on Uniform Traffic Control Devices (MUTCD) latest edition, the plans and subject to approval of the City of Baton Rouge, Parish of East Baton Rouge, Department of Public Works, Traffic Engineering Division (CP/DPW/TED). The CP/DPW/TED offices shall be notified upon completion of any new pavement marking layout work for inspection prior to the application of any pavement markings.

The Contractor shall maintain a written detailed daily log of work completed. The log shall show the location (by street name, including termini), time and date that each type work (i.e., removal, layout, application) begins and ends on each street or separate street segment. If work is performed on the same street or street segment on more than one day or at different times on the same day, the beginning and ending time for each activity performed shall be shown as a separate entry. Duplicate copies of daily work sheets containing the information shown above for all work completed on each street segment, each day, will be maintained and signed by the City/Parish and contractors representatives. Any change over or under ten percent (10%) in estimated versus actual quantities must be approved and a field change order sheet completed and signed at the end of each work day by both representatives.

The same type of pavement marking material (i.e., same manufacturer and composition) shall be used throughout a single roadway project. Variations with regards to this requirement may be allowed by verbal permission, to be confirmed in writing within forty-eight (48) hours, from the CP/DPW/TED.

No payment will be made for any work done without the presence of the CP/DPW/TED designated representative or an acceptable alternate on the site provide sufficient advance notice of all planned activities to permit scheduling of City/Parish representatives. Separate operations at more than two (2) different locations cannot be planned without advance written approval of the CP/DPW/TED or City/Parish representative. Price quoted by contractor shall include the cost of removal of all temporary pavement markings at no additional cost to the City/Parish.

1195-2 MATERIALS: Materials shall conform to the following Sections and Subsection:

Pavement Striping Tape	1020-2.1 (a)
Traffic Paint	1020-2.2.3
Thermoplastic Pavement Markings	1020-2.2.1
Performed Plastic Pavement Markings	1020-2.2.2
Glass Spheres (Beads)	1020-2.2.4

1195-3 EQUIPMENT:

a. General

Selection of the proper equipment to produce satisfactory results within the following basic requirements shall be the responsibility of the Contractor.

1. Applicator equipment for longitudinal lines shall consist of a self-contained, self-propelled mobile unit that does not require the operator to walk behind or beside during the installation of pavement markings either left or right of the application unit so that only one (1) lane of

traffic will be occupied. The applicator unit shall have a tachometer or other approved device to insure uniform application at the required rate. It shall be adjustable for applying one (1), two (2) or three (3) adjacent lines simultaneously at the specified spacing.

2. Applicators shall produce sharply defined lines and provide means for cleanly cutting off square stripe ends and applying broken lines.
3. Applications for longitudinal lines shall permit traffic to pass within the limit of the roadway surface and shoulder while the unit is operating.
4. Equipment shall be capable of producing continuous uniformity in dimensions of stripes. Equipment shall produce varying widths of traffic markings.

b. Thermoplastic Equipment

1. Hot thermoplastic pavement marking materials shall be applied to pavement by spray, ribbon gun or extrusion methods. Equipment shall provide continuous mixing and agitation of material. Conveying parts of equipment between main material reservoir and discharge mechanism shall prevent accumulation and clogging. Parts of equipment which come in contact with the material shall be easily accessible for cleaning and maintaining. Mixing and conveying parts shall maintain material at the plastic temperature, minimum three hundred and fifty (350) °F [one hundred and seventy-seven (177) °C].
2. Heating kettles to hold a minimum of one thousand (1,000) pounds of material shall be provided for melting and heating thermoplastic material. Kettles must be equipped with automatic thermostatic control devices so that heating can be done by controlled heat transfer liquid or other approved methods (no direct flame will be allowed) to provide positive temperature control and prevent overheating of material. A direct reading temperature gauge will be provided on each kettle so that the temperature of material can be observed and recorded.
3. Applicators and kettles must be equipped and arranged to comply with requirements of the National Board of Fire Underwriters. Applicators shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in true arc.
4. The contractor at his option may provide a hand held infrared temperature gauge to measure the surface and material temperature in lieu of the direct reading temperature gauge specified above. This device will be given to the City-Parish representative with proper operating guidelines and manuals at the pre-construction conference. The device will be returned to the contractor when the final inspection of all work has been completed. The cost of this device will be absorbed by the contractor in lieu of supplying the direct reading temperature gauge on the application equipment.

c. Painting Equipment

Painting equipment shall provide for the application of "drop-on" glass spheres.

d. Symbols, Legends and Crosswalks

Applicator equipment for symbols, legends, and crosswalks, may be hand propelled, but must meet all other requirements indicated above.

1195-4 TIME AND WEATHER LIMITATIONS

- a. No work that interferes with the movement of traffic shall be permitted during weekday peak traffic hours, unless authorized by the CP/DPW/TED or City-Parish representative in writing. Peak traffic hours are:

7:30 a.m. – 8:30 a.m., Monday thru Friday

4:30 p.m. – 5:30 p.m., Monday thru Friday

Work during these hours on weekend days (Saturday and Sunday) may be authorized on an individual location basis by the CP/DPW/TED or City-Parish representative.

- b. Application of markings will not be permitted when there is moisture on the pavement surface nor when the surface temperature is below fifty (50) °F. Temperature will be measured and recorded at the start of each application and at approximately one (1) hour intervals.
- c. Application of hot thermoplastic markings will not be permitted when the material temperature in the application equipment is below three hundred and seventy five (375) °F for extruded or ribbon-gun applications and four hundred (400) °F for spray applications. Temperature will be recorded at the start of each application and at approximately one (1) hour intervals thereafter.

1195-5 CLEANING OF PAVEMENT SURFACES:

- a. Surfaces on which pavement markings are to be applied shall be cleaned of all materials that would reduce adhesion of the marking materials to the pavement. Cleaning shall be done by approved methods and surfaces shall be kept clean until placement of markings.
- b. All existing temporary markings shall be removed. No direct payment will be made for removing existing temporary markings and costs shall be included in the price for other items.
- c. Existing permanent marking on the roadway may not require removal prior to placement of new markings. The CP/DPW/TED and/or City-Parish representative will examine and test existing pavement markings to determine if removal is necessary (see subsection 1195-6). The decision of the Traffic Engineering/ City-Parish representative will be final and the contractor will remove any existing permanent pavement markings as directed.
- d. At the end of each day's operations, temporary pavement markings conforming to Subsection 905-3.2.1 shall be placed in areas where existing markings have been removed and new markings not placed. Temporary pavement markings shall be satisfactorily removed prior to resuming plastic striping operations. No direct payment will be made for the installation and removal of temporary markings and the cost shall be included in the price bid on other items.

1195-6 REMOVAL OF EXISTING PERMANENT PAVEMENT MARKINGS:

- a. The contractor will be required to remove any permanent pavement markings (painted, thermoplastic or semi-permanent tape) when directed to do so by the CP/DPW/TED or City-Parish Representative.
- b. CP/DPW/TED or City –Parish representative will make the final determination on removal of existing pavement marking based on field observations and a field test performed by the Contractors as follows:
 1. On a typical ten foot (10') long segment of existing pavement marking stripe or a typical legend or symbol, a steel wire brush will be vigorously applied across the existing pavement marking material.

- i.If the existing pavement marking material remains firmly adhered to the pavement surface and does not powder or crack or flake, then removal is not required. A simple cleaning with a power brush or compressed air to remove surface dirt and debris will still be required at no additional cost.
 - ii.If the existing pavement marking material shows loss of adhesion or significant powdering, cracking, or flaking, it shall be removed by approved methods which do not significantly damage the pavement surface to the extent that at least seventy-five percent (75%) of the pavement surface is exposed.
2. When any existing pavement markings are not completely recovered the application of new pavement markings, it shall be removed by approved methods so that at least seventy five percent (75%) of the pavement surface is exposed. Compensation will be at unit cost bid for such removal.

1195-7 LAYOUT:

a. Location & Dimensions

Pavement Markings (lines, legends, and symbols) shall have the following MUTCD dimensions and patterns, unless specified differently in these specifications or as directed by the Traffic Engineer.

1. All solid and skip-lane lines shall be four (4) inches wide. A skip-line shall consist of ten (10) foot line segments and thirty (30) foot gap segments. A dotted line shall consist of two (2) foot line segments and four (4) foot gap segments.
2. Double yellow lines shall have a spacing of four (4) to fourteen (14) inches between the lines as specified or as directed by the CP/DPW/TED or City-Parish representative.
3. Diagonal lines shall be twelve (12) inches or twenty-four (24) lines wide as shown on the plans or as directed by the CP/DPW/TED or City-Parish representative. Spacing between diagonal lines(measured perpendicular to diagonal lines) shall be as follows:
 - i.Ten (10) feet when the posted speed limit is forty (40) miles per hour (mph) or less.
 - ii.Twenty (20) feet when the posted speed limit is above forty (40) miles per hour (mph).
4. The longitudinal joint or existing centerline strip shall be used in determining the location of the centerline for new-restriping; however, in the absence of a longitudinal joint or existing stripe, by the contractor with the approval of the CP/DPW/TED or City-Parish representative. Edge striping on curves shall be adjusted as necessary so that the stripe on tangent will be parallel to the centerline and will not run off the edge of the pavement. Skip line individual interval will not be marked. No striping material shall be applied over a guide cord. All new layouts which do not use longitudinal joint or existing centerline stripe must be approved by the CP/DPW/TED or city -parish representative prior to application. No hot thermoplastic pavement marking material will be applied directly over longitudinal joint (centerline or otherwise). If conditions in the field require this type of application it must be approved in advance by CP/DPW/TED/
5. Legends and Symbols

All symbols, words and legends shall conform to the "Manual on Uniform Traffic Control Devices" as shown below:

<u>Description</u>	<u>MUTCD Reference</u>
Single Head Arrow	Section 3B-20, Fig 3-18 (a) or (b)
Double Head Arrow	Section 3B-20, Fig. 3-18 (c)
"Only"	Section 3B-20, Fig. 3-17
Railroad Crossing	Section 8B-4, Fig. 8.2
"School"	Section 7c-6, Fig. 7-2 or 7-3
"STOP"	Section 3B-20
"SLOW"	Section 3B-20
"Ped X-ing"	Section 3B-20

b. No Passing Zone Criteria

When plans or specifications specify the installation of skip lane lines on two or three lane roads, "No passing zones" shall be installed as required.

1. Horizontal and Vertical Curves

(See MUTCD, Section 3B-5)

A no-passing zone (single or double) at a horizontal or vertical curves is warranted where the sight distance, as defined below, is less than the minimum necessary for safe passing at the prevailing speed of traffic. A single no-passing zone is required when the sight distance is obscured from both directions. Passing sight distance on a vertical curve is the distance at which an object is three and one-half feet (3.50') above the pavement surface can just be seen from a point three and one-half feet (3.50') above the pavement. Similarly passing sight distance on a horizontal curve is the distance measured along the centerline (or right hand lane of a three (3) lane highway) between two (2) points, three and one-half feet (3.50') above the pavement on a line tangent to the embankment or other obstruction that cuts off the view on the inside of the curve. Where centerlines are installed and a curve warrants a no-passing zone, it should be so marked where the sight distance is equal to or less than that list below for the prevailing off-peak eighty fifth (85th) percentile speeds or the posted speed limit, whichever is higher.

Eighty-Fifth (85th) Percentile Speed or Posted Speed Limit (MPH)	Length of No passing Zone (Feet)
25	450
30	500
35	500
40	600
45	700
50	800
55	900
60	1000
65	1100
70	1200

In the event the 85th percentile speed is between table increments, the next higher five (5) MPH will be used.

The beginning of a no-passing zone is that point at which the sight distance first becomes less than that specified in the above table. The end of the zone is that point at which the sight distance again becomes greater than the minimum specified.

- 2. Intersecting Cross Streets:** A no-passing zone is required approaching all public cross streets or roads. The length of these no- passing zones are influenced by the posted speed

limit or prevailing off peak 85th percentile speed (if known) whichever is higher and is given in the following table:

Eighty-Fifth (85 th) Percentile Speed or Posted Speed Limit (MPH)	Length of No passing Zone (Feet)
25	295
30	315
35	335
40	360
45	410
50	460
55	560

3. **Stop and Yield Sign Controlled Intersection Approach:** A combination of a double and a single no-passing zone approaching a Stop or Yield condition may be warranted on any public street as shown below. The length of the no-passing zone is based on the posted speed limit or prevailing off-peak 85th percentile speed (if known) prior to the stop line location (near side curb or edge of pavement):

Eighty-Fifth (85 th) Percentile Speed or Posted Speed Limit (MPH)	Length of No passing Zone (Feet)
35 mph or lower	350
40 mph or higher	550

The intersection approach no –passing zone will be (when required) a combination of double and single no-passing zones measured from the stop bar going away from the intersection based on the approaching 85th percentile speed or the posted speed limit.

Eighty-Fifth (85 th) Percentile Speed	Double no passing/single no passing	
35 mph or lower	150 ft.	200 ft
40 mph or higher	250 ft	300 ft

Installation of no-passing zones on the approaches to stop or yield controlled intersections will be made based on the decision of the CP/DPW/TED or City-Parish representative at the time the pavement marking layout is made. If the available sight distance to the stop line location, near side curb or edge of roadway of the intersecting roadway, is less than shown above, then the no-passing zone must be installed.

4. **Connecting Successive No-Passing Zones:** where the distance between successive no passing zones is less than four hundred (400) feet, the appropriate no passing marking (one direction or two directions) should connect the zones.
5. The contractor is required to layout all new no-passing zones or replace any that already exist (see subsection 1195-1(c)). The criteria used for “no passing zone” lay out and approval shall be agreed upon with the CP/DPW/TED at the pre-construction conference. Any additional conditions not specifically addressed herein shall be done in accordance with MUTCD.

1195-8 APPLICATION OF MARKINGS: Material shall be installed in specified widths from four (4) to twenty- four (24) inches. Finished lines shall have well defined edges and be free of waviness. Measurements shall be taken as an average throughout any thirty-six (36) inch section of line. Longitudinal lines shall be offset approximately two (2) inches from construction joints of Portland Cement concrete pavement.

- a. **Tolerances:** A tolerance of plus one-half (+1/2) inch or minus one eight (-1/8) inch from the specified width will be allowed, provided the variation is gradual and does not detract from the general appearance. Segments of broken line may vary up to plus or minus six (+- 6) inches from the specified length. Segments shall square off at each end without mist or drip. Variations from

the control guide up to one (1) inch will be allowed provided the variation does not increase or decrease at a rate of more than 1/(2) inch in twenty-five (25) feet. Lines do not meet these tolerances shall be removed and replaced without additional compensation.

- b. **Protection of Markings:** During and immediately following the removal and/or application of the striping in areas having public traffic; traffic cones; red flags supported by springs or heavy wire on pedestals, or other approved devices, shall be placed alongside or over the line at intervals not exceeding fifty (50) feet to remain in place until the stripe has dried to such an extent that it will not be picked up by the tires of vehicles. Traffic shall be prevented from crossing a wet traffic stripe and if the above provisions are not sufficient to prevent such, the contractor shall use a sufficient number of flagmen, prober boards, signs or other protection for the wet stripe, or he shall reduce the amount of wet line by slowing down the striping operation. Sections of traffic stripe which have been marred or picked up by traffic crossing before drying shall be repaired by the Contractor and the pavement cleaned outside the stripe without extra compensation.

Sections of traffic striping which have been placed in accordance with the plans and specifications and as directed will be considered satisfactory and the contractor relieved of responsibility for ordinary maintenance on such section after they are opened to public traffic, pending completion and acceptance of the contract.

- c. **Protection of Traffic:** the contractor shall furnish and place all warning and directional signs required to direct, control and protect the traveling public while marking operations are in progress. Traffic shall be maintained at all times through the area where the stripes are being placed.

The pavement striping train shall move in the direction of normal traffic flow. The trailing vehicle shall be equipped with approved flashing arrow boards capable of directing traffic to the appropriate side of the train. All traffic control signs, cones and equipment shall be removed from the roadway when the striping train is not in operation.

Additional traffic control signs and equipment may be required, as directed, depending upon traffic conditions.

All protective and traffic warning devices shall be in accordance with MUTCD. The cost of protective and traffic warning devices shall be included in the price of other items bid for this project.

- d. **Thermoplastic Markings:**

1. Thickness and Temperature

i. Type I:

The thickness of material on the pavement for Type I Thermoplastic Markings shall be not less than ninety (90) mils for lane lines, edge lines and gore markings and not less than one hundred and twenty-five (125) mils for crosswalks, stop lines, legends, and symbol markings, except that edge lines shall be thirty (30) mils when so designated by the plans, specification or Engineer.

Type I Thermoplastic material shall be applied either by extrusion at three hundred ninety degrees Fahrenheit to four hundred fifty degrees Fahrenheit (390 °F to 450 °F), or by spray at four hundred ten degrees Fahrenheit to four hundred fifty degrees Fahrenheit (410 °F to 450 °F). Material shall not scorch or discolor if kept at this temperature for four (4) hours or if reheated to this temperature four (4) separate times.

ii.Type II:

The thickness of material on the pavement for Type II Thermoplastic Markings shall be not less than ninety (90) mils for lane lines, edge lines and gore markings and not less than sixty (60) mils for crosswalks, stop lines, legends, and symbol markings.

Type II Thermoplastic material shall be applied either by extrusion or ribbon gun at three hundred seventy-five degrees Fahrenheit to four hundred twenty-five degrees Fahrenheit (375 °F to 425 °F) or by spray at four hundred degrees Fahrenheit to four hundred twenty-five degrees Fahrenheit (400 °F to 425 °F). Material shall not scorch or discolor if kept at this temperature for four (4) hours or if reheated to this temperature four (4) separate times.

iii.Type III:

The thickness of material on the pavement for Type III Thermoplastic Markings shall not be less than thirty (30) mils for lane lines, edge lines and gore markings and not less than one hundred twenty-five (125) mils for crosswalks, stop lines, legends and symbol markings.

Method of application and temperatures for 30 mil markings shall be as specified for Type II Markings and for 125 mil markings shall be as specified for Type I Markings.

iv.Temperature will be checked and recorded at the start of each application and at approximately one (1) hour intervals thereafter.

2. Application on Portland Cement Concrete Surfaces:

i.For application of hot thermoplastic material on new or unweathered Portland cement concrete pavement surfaces the Contractor will be required to treat the surface with primer of a type recommended and approve by the thermoplastic material manufacturer. The primer must be applied sufficiently in advance of the hot thermoplastic material to cure as required. The application of primer may be either a separate operation or combined with the application of the hot thermoplastic material subject to limitation on "curing" above.

ii.On other pavement surfaces, if recommended by the material manufacturer, binder-sealer material shall be applied to the road surface prior to thermoplastic installation.

iii.For application of hot thermoplastic material on existing Portland Cement concrete pavement where pavement markings have previously been placed, the new material may be placed directly on the existing material or surface subject to the requirements concerning the "Cleaning of Pavement Surfaces" in Subsection 1195-5.

3. Reflectorized glass spheres shall be applied to the surface of completed thermoplastic pavement markings by an automatic sphere dispenser attached to the striping machine in such a manner that reflectorized glass spheres are dispensed almost simultaneously at a uniform rate of a minimum of five (5) pounds of reflectorized glass spheres per one hundred (100) square feet of line. Reflectorized glass spheres shall be sprayed or dropped onto thermoplastic material while it is in a molten state immediately after it has been applied to the pavement. The reflectorized glass sphere dispenser shall be equipped with an automatic cutoff control synchronized with cutoff of thermoplastic material.

e. Painted Marking

1. Preparation of paint: Immediately before application, paints shall be agitated and mixed thoroughly to a uniform consistency, free from lumps or agglomerates. Paints shall be kept covered to retain volatiles. Paint shall not be thinned unless approval is given to correct consistency.
2. Rate of application: This rate of application shall apply to all paints, with proper adjustments for broken line stripe or for other widths, and the rate shall not vary from this amount more than five percent (5%) in any mile. At any point where a check indicates a variation in excess of 5%, the work shall be stopped and the equipment properly adjusted or replaced. The minimum wet thickness of paint shall be 15 mils.

For rapid setting pigmented binder, the glass spheres shall be applied at the same time, but in a separate operation, at the rate of six (6) pounds (plus or minus 0.5 pound) of spheres per gallon of binder. Glass spheres shall be applied to the binder before final set has occurred and accomplished in such manner as to provide uniform coverage for the full width of the stripe. The glass spheres shall be applied to the paint stripe while it is still wet throughout, no dry surface film, immediately after it has been applied to the pavement. The glass spheres shall be applied by compressed air of sufficient pressure to cause embedment of the spheres throughout the entire thickness of the paint film. The guns used for glass sphere application shall be of a type approved for embedment.

The paint may be heated in heat exchangers in order to accelerate drying. Under no circumstances is the paint to be heated to a temperature exceeding 180 °F (82 °C).

The paint machine shall be so designed that its operation will be at a uniform speed on a grade as well as level ground. The operating speed of the equipment shall be approved by the Engineer consistent with the characteristics of the equipment's capabilities to produce an acceptable stripe within the required tolerances at the specified rate.

1195-9 CONTRACTOR QUALIFICATIONS:

- a. The Contractor or subcontractor performing work under this contract must employ competent field level supervision with experience in the layout and applications of pavement markings, shall utilize equipment appropriate for the work, and must have performed other projects of a similar size and nature.

References to verify these qualifications are met shall be provided within seven (7) calendar days to substantiate the Contractor's experience. Also, a list of equipment which will be utilized for the work must be submitted upon request. It is not the intent of this specification to exclude any qualified contractor, but a reasonable amount of experience is required in highway and urban area municipal striping.

- b. The Contractor's attention is specifically directed to the following:
 1. Application of all pavement markings will occur while normal traffic movement is being maintained on the street.
 2. The project may require the layout of new pavement markings include "No Passing" zones (in accordance with Subsection 1195-7b for horizontal and vertical curves. The Contractor must have personnel capable of performing these layouts.
- c. The Contractor's attention is also directed to Subsection 9-1 of the Standard Specifications regarding the limitations on subcontracting portions of the work.

1195-10 MEASUREMENT: Measurement will be made by the linear foot of pavement markings installed and accepted, exclusive of gaps, for the various widths (all colors) specified. Legends and symbols will be measured per each legend or symbol installed and accepted.

If an unspecified width marking is required in order to satisfy a specific field condition, then the measurement will be by the linear foot, pro-rated on the four inch (4") width of the same type pavement marking.

Removal of existing pavement markings will be measured by the square foot of markings actually removed and removal of legends and symbols will be measured per each. Removal of Existing Raised Pavement marker will be measured per each.

If no items for removal of existing markings are included in the contract, removal thereof shall be at no direct cost and the Contractor shall include the cost in the price bid on other items.

1195-11 PAYMENT: Payment for pavement markings and removal of existing markings, measured as provided above will be made at the contract unit price and shall constitute full compensation for furnishing all labor, equipment, materials, tools, and incidentals and the performance of all work as required to satisfactorily complete these items in accordance with the plans and specifications.

The Contractor may, at his option, provide pavement markings which are thicker than specified in the contract. No additional payment will be made for the thicker markings, which will be paid for at the contract unit price for the thickness specified in the plans and specifications, unless a work directive or change order is approved by the Director prior to application of the markings.

1195-12 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
1195104	Four (4) Inch Wide Thermoplastic Reflective Striping (90 mil)	Linear Foot
1195108	Eight (8) Inch Wide Thermoplastic Reflective Striping (90 mil)	Linear Foot
1195112	Twelve (12) Inch Wide Thermoplastic Reflective Striping (90 mil)	Linear Foot
1195124	Twenty-four (24) Inch Wide Thermoplastic Reflective Striping (90 mil)	Linear Foot
1195150	Single Head Arrow (125 mil)	Each
1195151	Double Head Arrow (125 mil)	Each
1195152	"ONLY" (125 mil)	Each
1195153	"RAILROAD CROSSING" (125 mil)	Each
1195154	"SCHOOL" (125 mil)	Each
1195155	"STOP" (125 mil)	Each
1195156	"SLOW" (125 mil)	Each
1195160	Bike Legend (125 mil)	Each
1195204	Four (4) Inch Wide Thermoplastic Reflective Striping (30 mil)	Linear Foot
1195208	Eight (8) Inch Wide Thermoplastic Reflective Striping (30 mil)	Linear Foot
1195212	Twelve (12) Inch Wide Thermoplastic Reflective Striping (30 mil)	Linear Foot
1195224	Twenty-four (24) Inch Wide Thermoplastic Reflective Striping (30 mil)	Linear Foot
1195250	Single Head Arrow (60 mil)	Each
1195251	Double Head Arrow (60 mil)	Each
1195252	"ONLY" (60 mil)	Each
1195253	"Railroad Crossing" (60 mil)	Each
1195254	"School" (60 mil)	Each
1195255	"STOP" (60 mil)	Each
1195256	"SLOW" (60 mil)	Each
1195257	"PED X-ING" (60 mil)	Each
1195312	Twelve (12) Inch Wide Thermoplastic Reflective Striping (125 mil)	Linear Foot

1195324	Twenty-four (24) Inch Wide Thermoplastic Reflective Striping (125 mil)	Linear Foot
1195412	Twelve (12) Inch Wide Thermoplastic Reflective Striping (60 mil)	Linear Foot
1195424	Twenty-four (24) Inch Wide Thermoplastic Reflective Striping (60 mil)	Linear Foot
1195504	Four (4) Inch Wide Painted Reflective Striping	Linear Foot
1195508	Eight (8) Inch Wide Painted Reflective Striping	Linear Foot
1195512	Twelve (12) Inch Wide Painted Reflective Striping	Linear Foot
1195524	Twenty-four (24) Inch Wide Painted Reflective Striping	Linear Foot
1195550	Single Head Arrow (Painted)	Each
1195551	Double Head Arrow (Painted)	Each
1195552	"ONLY" (Painted)	Each
1195553	"Railroad Crossing" (Painted)	Each
1195554	"School" (Painted)	Each
1195555	"STOP" (Painted)	Each
1195556	"SLOW" (Painted)	Each
1195557	"PED X-ING" (Painted)	Each
1195601	Removal of Existing Pavement Markings	Square Yard
1195602	Removal of Existing Legends and Symbols	Each
1195603	Removal of Existing Raised Pavement Markers	Each
1195604	Removal of Existing Raised Pavement Markers	Lump Sum

Add the following section:

SECTION 9900006 DETECTABLE WARNINGS (Includes item 9900006)

GENERAL

This provision details furnishing and installing a truncated dome inset as indicated on the plans.

CONFLICT WITH UTILITIES

Utility valves, junction boxes, and/or manholes within the area required for a truncated dome inset shall be relocated outside of the truncated dome inset area at the cost of the utility.

SUBMITTALS

- A. Product data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.
- B. Samples for verification purposes: Submit two (2) inset samples minimum 6"x6" of the kind and color proposed for use.
- C. Shop drawings are required showing fabrication details, composite structural system, surface profile, plans of inset placement including joints, and material to be used as well as outlining installation materials and procedure.
- D. Maintenance instructions: Submit copies of manufacturer's specified installation and maintenance practices for inset as required.

QUALITY ASSURANCE

- A. Provide truncated dome inset and accessories as produced by a single manufacturer with a minimum of three (3) years experience in the manufacturing of ADA compliant detectable warning.
- B. Americans with Disabilities Act (ADA): Provide truncated dome inset detectable warning which complies with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).
- C. Truncated dome inset shall be a polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. The inset shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.9" base diameter, and 0.45" top diameter, spaced center-to-center 2.35" as measured on a diagonal and 1.67" as measured side by side. For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40 - 90° raised points 0.045" high, per square inch.
 - 1. Dimensions: truncated dome inset shall be held within the following dimensions and tolerances:
 - a. Length and Width: 24x48 nominal
 - b. Depth: 1.375 (1-3/8") (+/-) 5% max.
 - c. Face Thickness: 0.1875 (3/16") (+/-) 5% max.
 - d. Warpage of Edge: 0.5% max.
 - e. Embedment Flange Spacing: shall be no greater than 3.1"
 - 2. Water absorption of inset when tested by ASTM D 570-98 not to exceed 0.05%.
 - 3. Slip resistance of inset when tested by ASTM C 1028-96 the combined Wet and Dry static coefficients of friction not to be less than 0.80 on top of domes and field area.
 - 4. Compressive strength of inset when tested by ASTM D 695-02a not to be less than 28,000 psi.
 - 5. Tensile strength of inset when tested by ASTM D 638-03 not to be less than 19,000 psi.
 - 6. Flexural strength of inset when tested by ASTM D 790-03 not to be less than 25,000 psi.

7. Chemical stain resistance of inset when tested by ASTM D 543-95 (re approved 2001) to withstand without discoloration or staining - 10% hydrochloric acid, urine, saturated calcium chloride, black stamp pad ink, chewing gum, red aerosol paint, 10% ammonium hydroxide, 1% soap solution, turpentine, Urea 5%, diesel fuel and motor oil.
8. Abrasive wear of inset when tested by BYK - Gardner Tester ASTM D 2486-00 with reciprocating linear motion of 37± cycles per minute over a 10" travel. The abrasive medium, a 40 grit Norton Metallite sand paper or approved equal, to be fixed and leveled to a holder. The combined mass of the sled, weight and wood block is to be 3.2 lb. Average wear depth shall not exceed 0.060 after 1000 abrasion cycles when measured on the top surface of the dome representing the average of three measurement locations per sample.
9. Resistance to wear of unglazed ceramic inset by Taber Abrasion per ASTM C501-84 (re approved 2002) shall not be less than 500.
10. Fire resistance of inset when tested to ASTM E 84-05 flame spread shall be less than 15.
11. Gardner impact to geometry "GE" of the standard when tested by ASTM D 5420-04 to have a mean failure energy expressed as a function of specimen thickness of not less than 550 in. lbf/in. A failure is noted when a crack is visible on either surface or when any brittle splitting is observed on the bottom plaque in the specimen.
12. Accelerated weathering of inset when tested by ASTM G 155-05a for 3000 hours shall exhibit the following result - $\Delta E < 4.5$, as well as no deterioration, fading or chalking of surface of inset color No 33538
13. Accelerated aging and freeze thaw test of inset and adhesive system when tested to ASTM D 1037-99 shall show no evidence of cracking, delamination, warpage, checking, blistering, color change, loosening of inset or other detrimental defects.
14. Salt and spray performance of inset when tested to ASTM B 117-03 not to show any deterioration or other defects after 200 hours of exposure.
15. AASHTO HB-17 single wheel HS20-44 loading "Standard Specifications for Highways and Bridges". The inset shall be mounted on a concrete platform with a ½" airspace at the underside of the inset top plate then subjected to the specified maximum load of 10,400 lbs., corresponding to an 8000 lb individual wheel load and a 30% impact factor. The inset shall exhibit no visible damage at the maximum load of 10,400 lbs.
16. Embedment flange spacing shall be no greater than 3.1" center to center spacing when using multiple insets adjacent to each other in order to meet the required dimensions.

DELIVERY, STORAGE AND HANDLING

- A. Truncated dome inset shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy plastic wrappings to protect inset from concrete residue during installation and inset type shall be identified by part number.
- B. Truncated dome inset shall be delivered to location at building site for storage prior to installation.

GUARANTEE

Truncated dome inset shall be guaranteed in writing for a period of five (5) years from date of final completion. The guarantee includes defective work, breakage, deformation, fading and loosening of insets.

COLOR REQUIRED

Dark Grey (Federal Color No. 36118), or approved equal.

INSTALLATION

- A. During inset installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- B. Prior to placement of the inset, review manufacturer and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.

- C. The physical characteristics of the concrete shall be consistent with the contract specifications while maintaining a slump range of 4 - 7 to permit solid placement of the inset. An overly wet mix will cause the inset to float. Under these conditions, suitable weights such as 2 concrete blocks or sandbags (25 lb) shall be placed on each inset.
- D. The concrete pouring and finishing operations require typical mason's tools, however, a 4' long level with electronic slope readout, 25 lb. weights, and a large non-marring rubber mallet are specific to the installation of the inset. A vibrating mechanism can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 1 foot square.
- E. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the inset.
- F. When preparing to set the inset, it is important that no concrete be removed in the area to accept the inset. It is imperative that the installation technique eliminates any air voids under the inset. Holes in the inset perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the inset. This will lock the inset solidly into the cured concrete.
- G. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the inset placement. Immediately after finishing concrete, an electronic level should be used to check that the required slope is achieved. The inset shall be placed true and square to the curb edge in accordance with the contract drawings. The inset shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the inset is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the inset as this may cause uneven setting which can result in air voids under the inset surface. The contract drawings indicate that the inset field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.
- H. Immediately after placement, the inset elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates. Ensure that the field surface of the inset is flush with the surrounding concrete and back of curb so that no ponding is possible on the inset at the back side of curb.
- I. While concrete is workable, a 3/8" radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the inset's perimeter, flush to the field level of the inset.
- J. During and after the inset installation and the concrete curing stage, it is imperative that there is no walking, leaning or external forces placed on the inset that may rock the inset causing a void between the underside of inset and concrete.
- K. Following inset placement, review installation tolerances to contract drawings and adjust inset before the concrete sets. Two suitable weights of 25 lb each may be required to be placed on each inset as necessary to ensure solid contact of the underside of inset to concrete.
- L. Following the concrete curing stage, protective plastic wrap is to be removed from the inset surface by cutting the plastic with a sharp knife, tight to the concrete/inset interface. If concrete bled under the plastic, a soft brass wire brush will clean the residue without damage to the inset surface.

- M. If desired, individual insets can be bolted together using ¼ inch stainless steel bolts or equivalent hardware. This can help to ensure that adjacent insets are flush to each other during the installation process. Tape or caulking can be placed on the underside of the bolted butt joint to ensure that concrete does not rise up between the insets during installation. Any protective plastic wrap which was peeled back to facilitate bolting or cutting, should be replaced and taped to ensure that the inset surface remains free of concrete during the installation process.
- N. Insets can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini-grinder. Use of a straightedge to guide the cut is advisable where appropriate.

CLEANING, PROTECTING AND MAINTENANCE

- A. Protect insets against damage from rolling loads following installation by covering with plywood or hardwood.
- B. Clean insets not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean inset by method specified by inset manufacturer.
- C. Comply with manufacturers maintenance manual for cleaning and maintaining inset surface and it is recommended to perform annual inspections for safety and inset integrity.

METHOD OF PAYMENT

MEASUREMENT

These items consist of furnishing all labor, equipment and materials necessary for the complete installation of a detectable warning truncated dome inset on ADA curb ramps (truncated dome) and related work in accordance with plan details and ADA Accessibility Guidelines section 4.7.7 & 4.29.2. The detectable warning shall extend the full width and 2 feet in depth from the back of the extended curb (excluding flares). For median cut thru ramps and for parallel curb ramps with landings along the roadway, the truncated dome inset shall extend 24" from the extended back of curb line and follow the curb radius as required by the plans. Insets are to be installed directly into concrete. Insets required are typically 24"x48". However, multiple 24"x48" insets may be required to fit the 2 feet in depth by the required width as detailed. Measurement shall be made per each ramp installation as indicated on the ramp details whether one 24"x48" inset or multiple 24"x48" insets are required. Measurement will include, but shall not be limited to the following items: truncated dome inset(s), material, attachment, hardware, and all miscellaneous hardware required for a truncated dome inset installation.

PAYMENT

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
9900006	Truncated Dome Inset (Sidewalk Handicap Ramps)	Square Foot

Add the following section:

SECTION 9900072 COLD MIX ASPHALT CONCRETE PAVEMENT

9900072-1 DESCRIPTION: This work consists of furnishing and placing high performance cold mix asphalt (CMA) concrete mixtures. Use of CMA is generally restricted to small area installations and patching.

9900072-2 MATERIALS: CMA shall meet the following requirements:

- a. Listed as a preapproved commercial high performance cold mix material on the LADOTD Qualified Products List 75.
- b. Mixture shall have a minimum shelf life of twelve months thereby remaining workable and retaining its performance characteristics during that time.
- c. Mixture, once in place and compacted, must be capable of withstanding changes in weather conditions, exposure to weighted conditions and continuous traffic flow.
- d. Material may be stored by stockpile or may be containerized. Handling, storage, and stockpiling of material shall be done in strict accordance with the manufacturer's recommendations.
- e. Tack coat shall be emulsified asphalt (grade CRS-2P or SS-1P).

9900072-3 SUBMITTALS

- a. Data submittal showing that selected material meets requirements of subsection 9900072-2.
- b. If bulk quantity is to be supplied by a local batch plant, then proof of mix certification by one of the preapproved commercial high performance cold mix material manufacturers listed on the LADOTD Qualified Products List 75 shall be submitted.

9900072-4 CONSTRUCTION:

- a. **Weather Limitations (CMA):** Cold mix asphalt concrete pavement courses shall be placed only when the air temperature is 20°F or above. When paving operations are discontinued because of rain, the mixture in transit shall be protected until the rain ceases. The surface on which the mixture is to be placed shall be swept to remove as much moisture as possible and the mixture may then be placed subject to removal and replacement at no additional cost to the Owner if contract requirements are not met.
- b. **Surface Preparation:** Contractor shall ensure final edges along pavement cut limits are straight, clean, solid vertical faces free from loose material prior to pavement restoration. Remove excessive water and any loose stone or debris from the surface of the stone base. Adjacent pavement surfaces shall be swept clean of dust, dirt, caked clay and loose material.
- c. **Spreading and Finishing:** The temporary surfacing material may be spread and finished by hand to the satisfaction of the Engineer. Patch material shall not be cast from the truck to the grade. During spreading operations, material shall be thoroughly loose and uniformly distributed. Material that has formed into lumps and does not break down readily will be rejected. The surface shall be checked before rolling and irregularities corrected. The temporary surfacing material shall be placed and compacted in layers of no more than two inches in thickness.

Spreading, finishing and compaction of the temporary surfacing material shall leave the surface smooth and level with the edge of existing pavement. While the surface is being compacted and finished, the edges shall be shaped to a neat line.

- d. **Compaction:** Immediately after the mixture has been spread, it shall be thoroughly and uniformly compacted. Contractor shall compact each layer with mechanical compaction equipment such as vibratory plate compactor or single-drum vibratory roller. Larger patches may use a ride on or walk behind compactor. Use of pneumatic tires is not an acceptable means of compaction. To prevent adhesion of the patch material, plates and wheels of rollers shall be kept properly moistened.

Surface of mixtures after compaction shall be smooth and true to cross slope and grade within the tolerances specified. Mixtures that become loose, broken, contaminated or otherwise defective shall be removed and replaced with fresh material compacted to conform with the surrounding mixture.

For CMA, the finished pavement shall have a tightly knit surface free of cracks, tears, ripples or other deficiencies. All deficiencies shall be corrected at the Contractor's expense and the Contractor shall adjust his operations to correct the problem. This may require the Contractor to adjust the mix or furnish additional or different equipment.

- e. **Surface Tolerances:** The distance at any point from a ten (10) foot straight edge to the surface shall not exceed one-half (1/2) inch in any direction. Lumps or depressions exceeding this tolerance shall be corrected by removing defective work and replacing with new material as directed.

9900072-5 MEASUREMENT: Measurement for cold mix asphalt concrete pavement shall be the in-place measure of the number of cubic yards of cold mix asphalt required to be used as needed and as authorized by the Engineer. Material lost, wasted, rejected or applied contrary to specifications will not be measured for payment. Asphalt tack coat will not be measured for payment.

9900072-6 PAYMENT: Payment for cold mix asphalt concrete payment will be made at the contract unit price, which includes furnishing all required material, producing the mixtures, preparing the surfaces on which the mixtures are placed, hauling the mixtures to the work site, and placing and compacting the mixtures.

9900072-7 PAY ITEMS:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
9900072	Cold Mix Asphalt Concrete Pavement	Cubic Yard