BID NUMBER 10332

SOUTHERN UNIVERSITY AND A&M COLLEGE
BATON ROUGE CAMPUS
REQUEST FOR BID
JAMES L. HUNT STREET ROADWAY IMPROVEMENT
SU DEPARTMENT OF AGRICULTURE

BID DUE DATE: MARCH 6, 2025-10:30 AM

Architect Project Number: WTAA-24103
Architect Firm: WTAA ENGINEERS
Contact: W.T. Winfield, Manager
2622 North Street, Baton Rouge, LA 70802
Phone: 225-383-0822

All times are Central Standard

MANDATORY PRE—BID CONFERENCE
AND SITE VISIT: **February 18, 2025 @ 10:30 AM**
A. O. Williams Hall (front of building)
9304 B. A. Little Drive
(corner of James L. Hunt Street & B.A. Little Dr.)
Southern University
Baton Rouge Campus
Site information phone No. 225-954-1464

DEADLINE TO SUBMIT INQUIRIES: **February 21, 2025 by 5:00 PM**
SUBMIT INQUIRIES TO: **Linda Antoine**
Email: linda_antoine@subr.edu

DEADLINE TO RESPOND TO INQUIRIES **February 26, 2025 by 5:00 PM**

Note: Responses to inquiries/addenda are pasted on LaPAC (LA Procurement Website)
LA State Procurement website:

https://wwwcfprd.doa.louisiana.gov/OSP/LaPAC/Agency/outMain.cfm
It is the responsibility of the vendor to check LAPAC for addenda.
We highly recommend registering with LA State Procurement and LAPAC

DEADLINE TO SUBMIT BID: **March 6, 2025 @ 10:30 AM**
SUBMIT BID TO:
Linda Antoine, Director
Southern University Purchasing Department-
P. O. Box 9534 or James L. Prestage Drive
J. S. Clark Adm. Bldg. Annex, 1st Floor
Baton Rouge, LA 70813
Telephone No. 225-771-2804 or 771-4587

ADVERTISEMENT
REQUEST FOR BID
BID #10332
JAMES L. HUNT STREET ROADWAY IMPROVEMENT
Architect Project Number: WTAA-24103
SOUTHERN UNIVERSITY AND A&M COLLEGE-BATON ROUGE CAMPUS
MARCH 6, 2025-10:30 AM

Sealed bids will be received by Southern University, Baton Rouge, Louisiana, in the Purchasing Office, 8100 James L. Prestage Drive, J. S. Clark Administration Building Annex, South Entrance, First Floor East. Bidders are solely responsible for ensuring timely delivery of their bids. The Southern University Purchasing Department is not responsible for any delays caused by bidders' chosen means of delivery. Failure to meet the bid deadline submittal date and time shall result in rejection of bid.

MAIL OR HAND-DELIVER BID TO PURCHASING DEPARTMENT NO LATER THAN 10:30 AM ON MARCH 6, 2025

Mandatory Pre-Bid Conference & Site Visit: February 18, 2025 @ 10:30 AM
Site Visit Location: A.O. Williams Hall (meet in front of building)
Building location: 9304 B.A. Little Drive (corner of James L. Hunt Street & B.A. Little Drive)
Baton Rouge, La 70813
Site Visit Telephone Contact Numbers 225-954-1464

Participants shall be in attendance by 10:30 a.m. and sign-in on sheet provided by the Purchasing Department.

Bidders shall visit the site and be familiarized with the local conditions under which the work is to be performed. No additional compensation will be granted because of unusual difficulties, which may be encountered in the execution of any portion of the work.

Inquiries will be accepted until February 21, 2025 by 5:00 p.m. Inquiries shall be submitted to Linda Antoine at linda_antoine@subr.edu

Responses to inquiries will be posted on LAPAC-LA State Procurement website by February 26, 2025 by 5:00 PM

ALL BID SPECIFICATIONS AND ADDENDA IF ANY, CAN BE OBTAINED BY ACCESSING THE LA STATE PROCUREMENT WEBSITE
https://wwwcfprd.doa.louisiana.gov/osp/lapac/pubMain.cfm
It is the responsibility of vendor to check LAPAC for addenda

Any person requiring special accommodations should notify the Purchasing Office of the type(s) of accommodation required not less than seven (7) days before the bid opening date.

All bids must be accompanied by bid security equal to **five (5%) percent of the sum of the base bid and all alternates, if applicable** and must be in the form of a

certified/official check, cashier's check or bid bond, made payable to Southern University and A & M College. Surety represents that it is listed on the current U.S. Department of the Treasury Financial Management Service list of approved bonding companies and that is listed thereon as approved for amount equal to or greater than the amount for which it obligates itself in this instrument. No bid bond indicating an obligation of less than five percent (5%) by any method is acceptable.

The successful bidder shall be required to furnish a **Performance and Payment Bond** written by a company licensed to do business in Louisiana, in an amount equal to 100% of the contract amount and who is currently on the U.S. Department of the Treasury Financial Management Service List.

Bidders shall include the following on envelope of choice: company's name, address, Louisiana contractor's license number, bid number, bid opening date and time.

Bids may be withdrawn by written, telegraphic fax notice or email and received at the address or email address designated in the Invitation to Bid prior to the time set for bid opening, as recorded by date stamp at the Purchasing Office. Bids received after closing time will be returned unopened. Evidence of authority to submit the bid shall be required in accordance with R.S. 38:2212(a)(1)(c) and/or R.S. 39:1594(c)(2)(d).

The Southern University System is a participant in the Louisiana for the Small Entrepreneurships Program (the Hudson Initiative) and the Louisiana Initiative for Veterans and Service-Connected Disabled Veterans-Owned Business Small Entrepreneurships. Bidders are encouraged to consider participation. A list of certified vendors and additional information can be obtained from website http://www.ledsmallbiz.com. Potential participants may also register at this website.

Any questions concerning bid documents, please contact Mary Jane Spruel, Assistant Director of Purchasing at (225) 771-2800 or email to maryjane_spruel@subr.edu

The University reserves the right to reject all bids and to waive any informalities incidental thereto. Bids will be accepted only from contractors who are licensed under Louisiana R.S. 39:2150-2173 for the classification of: 72000000 Building and Construction, and Maintenance Services; 7214000 Heavy Construction Services; 72141000 Highway and Road Construction Services.

SOUTHERN UNIVERSITY & A&M COLLEGE
AN EQUAL OPPORTUNITY EMPLOYER
Linda A. Antoine, Director of Purchasing
DATES ADVERTISED:
FEBRUARY 7, 12 & 14, 2025

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: **Southern University and A&M College**
Post Office Box 9534
James J. Prestage Dr-J.S. Clark Adm. Bldg. Annex
Baton Rouge, LA 70813

BID FOR: Bid Number 10332
ROADWAY IMPROVEMENT
JAMES L. HUNT STREET
Southern University and A&M College
Baton Rouge Campus

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: ***WTTA ENGINEERS 1/30/2025***

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) **N/A**_____.

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. ***(N/A)***

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 ($ _____)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

_____Dollars ($_____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

_____

EMAIL _____

PHONE _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

PRINT NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER: _____

DATE: _____

Completion Time: 90 days _____ consecutive calendar days after Notice to Proceed..

5% Bid Security: XX **Yes** (shall be included with bid)
(check here) _____ Bid Security included. Bid Security shall be total of 5% for base bid and alternates.
Successful bidder will be notified by letter to secure Performance and Payment Bond up to 100% of cost.
(check here) _____ Board Resolution included or Secretary of State Registration

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

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: **Southern University and A&M College**
Post Office Box 9534
James J. Prestage Dr-J. S. Clark Administration Bldg. Annex
Baton Rouge, LA 70813

BID FOR: **Bid Number 10332**

ROADWAY IMPROVEMENTS-JAMES L. HUNT STREET

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	☐ Base Bid or ☐ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

Wording for "DESCRIPTION" is to be provided by the Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

Bid Form #: SU 004

JOB SITE VISIT

NAME OF PROJECT: ROADWAY IMPROVEMENTS-JAMES L. HUNT STREET

SOUTHERN UNIVERSITY AND A & M COLLEGE

BATON ROUGE, LOUISIANA

MANDATORY SITE VISIT DATE: FEBRUARY 18, 2025 @ 10:30 AM

Bid # 10332

LATE ARRIVALS CANNOT PARTICIPATE IN THE BID PROCESS

It is the responsibility of the bidder to inspect job site, verify any measurements and/or supplies needed prior to submitting a bid price on this project. Each bidder shall 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 work under this contract. If vendor finds conditions that disagree with the physical layout as described in the bid, or any other features of the specifications that appear to be in error, same shall be noted on proposal. Failure to do so will be interpreted that bid is as specified. No consideration or allowance will be granted the Contractor for failure to visit the site or for any alleged misunderstanding of the materials to be furnished or the work to be done.

JOB SITE VISIT LOCATION:

A. O. Williams Hall (meet in front of building)
9304 B.A. Little Drive
(corner of B.A. Little Dr. & James L. Hunt Street)
Baton Rouge Campus-Baton Rouge, LA 70813
Site Telephone Nos. 225-954-1464 or 402-216-3061

The signed statement certifies the vendor's name listed below has visited the proposed site and is familiar with all conditions surrounding fulfillment of the specifications for this project.

*COMPANY*_____

*BY*_____

*DATE*_____

Note: *Questions not answered at Site Visit or any additional questions shall be submitted in writing to the Director of Purchasing, Linda A. Antoine at linda_antoine@subr.edu.*

Note: Responses to inquiries/Addenda are pasted on LaPAC (LA Procurement Website)
LA State Procurement website:
https://wwwcfprd.doa.louisiana.gov/OSP/LaPAC/Agency/outMain.cfm
It is the responsibility of the vendor to check LAPAC for addenda.

JOB SITE VERIFIED BY DESIGNATED SOUTHERN UNIVERSITY EMPLOYEE:

_____

SIGNATURE

Return this sheet with bid for information purpose

SOUTHERN UNIVERSITY AND A&M COLLEGE
BATON ROUGE CAMPUS
REQUEST FOR BID

PROJECT: ROADWAY IMPROVEMENT-JAMES L. HUNT STREET
BATON ROUGE CAMPUS
BID DUE DATE: MARCH 6, 2025
BID # 10332

Bids submitted are subject to provisions of but not limited to La.R.S.38 Purchasing Rules and Regulations; Executive Orders; and the General Terms and Conditions, listed in this Invitation for Bid. Southern University reserves the right to award items separately, grouped or on an all or none basis and to reject any or all bids and waive any informalities.

BIDS MAY BE SENT BY MAIL OR HAND-DELIVERED TO:

Bids should be mailed to:
Southern University
Purchasing Department
Post Office Box 9534
Baton Rouge, Louisiana 70813

As an alternative, bids may be hand delivered to:
Southern University
Purchasing Department
1st Floor East-James L. Prestage Drive
J. S. Clark Administration Building
Baton Rouge, Louisiana 70813

MANDATORY PRE-BID CONFERENCE & SITE VISIT: FEBRUARY 18, 2025 @ 10:30 AM

INQUIRIES: Inquiries will be accepted through FEBRUARY 21, 2025 @ 5:00 PM

No negotiations, decisions, or actions will be executed by any bidder as a result or any oral discussion with any University employee or State Consultant. Only those transactions which are in writing, sent to **Linda A. Antoine, Director of Purchasing, will be considered as valid.**

INSTRUCTIONS TO BIDDERS

1. **Bid Forms**
   All written bids, unless otherwise provided for, must be submitted on, and in accordance with forms provided and properly signed in ink. Bids submitted in the following manner will not be accepted:
   Bid containing no signature indicating intent to be bound
   (1) Bid filled out in pencil
   (2) Bid not submitted on University standard forms
   Bids must be received at the address specified in the Invitation for Bid prior to bid opening time in order to be considered. .

2. **Envelope (if mailed)**
   Bidders are requested to submit bid package in a sealed envelope of your choice that is clearly marked identifying the ***company's name, complete address, bid number, time and date of bid opening, and license number, if applicable.***
   Bidder is responsible for means of delivery of bid.
   Louisiana Contractors License Number shall be placed on the outside of the envelope.

3. **Standards of Quality**
   Any product or service bid shall conform to all applicable federal, state and local laws, regulations and the specifications contained in the IFB. Unless otherwise specified in the IFB, any manufacturer's name, trade name, brand name, or catalog numbers used in the specifications is for the purpose of describing the quality level, performance and characteristics required. Bidder must specify the brand and model number of the product offered in his/her bid. Bids not specifying brand and model numbers will be considered as offering the exact product(s) specified in the IFB.

4. **Descriptive Information**
   Bidders proposing an equivalent brand or model should submit information with bid (such as illustrations, descriptive literature, technical data) sufficient for the University to evaluate quality, suitability and compliance with the specifications in the IFB. Failure to submit descriptive information may cause bid to be rejected. Any change made to a manufacturer's published specification submitted for a product should be verifiable by the manufacturer. If item(s) bid do not fully comply with specifications (including brand and/or product number), bidder must state in what respect the item(s) deviate. Failure to note exceptions on the bid form will not relieve the successful bidder(s) from supplying the actual products requested.

Document will be included with the successful vendor's contact.

5. **Prices**
Unless otherwise specified by the Purchasing Department, bid prices must be complete, including transportation, prepaid by bidder to destination. In the event of extension errors, the unit price shall prevail.

6. **Payment Terms**
Payment is to be made within thirty (30) days after receipt of properly executed invoice, or delivery and acceptance, whichever is later. Delinquent payment penalties are governed by **L.R.S. 39:1695.**

7. **Deliveries**
Bids may be rejected if the delivery or completion time indicated is longer than that specified in the IFB.

8. **Vendor Invoices**
Invoices or AIA payment form shall reference the Southern University purchase/release order number, vendor's packing list/delivery ticket, ticket number, shipping/delivery date, etc. Invoices are to be itemized and billed in accordance with the order and should show the amount of any prompt payment discount and submitted on the vendor's own invoice form. Invoices submitted by the vendor's supplier will not be accepted. Terms are net 30.

9. **Tax Information/State of Louisiana**
Vendor is responsible for including all applicable taxes in the bid prices. Southern University is exempt from all Louisiana state and local sales and use taxes. By accepting an award, resident and non-resident firms acknowledge their responsibility for the payment of all taxes duly accessed by the State of Louisiana and its political subdivisions for which they are liable, including but not limited to: franchise taxes, privilege taxes, sales taxes, use taxes, ad valorem taxes, etc. In accordance with Act Number 1029 of the 1991 Regular Session, effective September 1, 1991 state agencies will no longer be required to pay state sales tax.

10. **New Products**
Unless specifically called for, all products for purchases must be new (never previously used) and the current model and/or packaging. The manufacturer's standard warranty will apply unless otherwise specified in the IFB.

11. **Contract Renewals, Multi-Year Contracts (if applicable)**
Upon agreement of Southern University and the contractor, an open-ended requirements contract may be extended for two (2) additional twelve (12) month periods at the same prices, terms and conditions. In such cases, the total contract term cannot exceed thirty six (36) months.

12. **Contract Cancellation**
Southern University has the right to cancel any contract, in accordance with Purchasing Rules and Regulations, for cause, including but not limited to, the following: (1) failure to deliver within time specified in the contract; (2) failure of the product or service to meet specifications, conform to sample quality or to be delivered in good condition;(3) misrepresentations by the contractor;(4) fraud, collusion, conspiracy or other unlawful means of obtaining any contract with the state; (5) conflict of contract provisions with constitutional or statutory provision of state or federal law; (6) any other breach of contract.

13. **AWARD AND EXECUTION OF CONTRACT:**
The owner shall incur no obligation to the contractor until the contract between the owner and contractor is duly executed. If the contractor is notified of the acceptance of the bid within thirty (30) days of the opening bid date, contractor agrees to execute and deliver to owner, Performance and Payment Bond and Certificate of Insurance, a copy of which is attached to the Contract Documents, within ten (10) working days after notice from the Owner that the instrument is ready for signature.

14. **Fiscal Funding Clause (Renewal Contracts Only)**
In accordance with LA R.S.39:1615 (c) and (e), any contract entered into by the State of Louisiana and Southern University shall include the following Fiscal Funding Clause:
C. Termination due to unavailability of funds in succeeding years. When funds are not appropriated to support continuation of performance in a subsequent year of a multiyear contract, the contract for such subsequent year shall be terminated. When a contract is terminated under these conditions, no additional funds shall be paid to the contractor as a result of such action. **E.** With respect to all multiyear contracts, there shall be no provisions for a penalty to the state for the cancellation or early payment of the contract. The continuation of this contract is contingent upon the appropriation of funds to fulfill the requirements of the contract by the legislature. All proposers should be aware that our legislative process is such that it is often impossible to give prior notice of the non-appropriation of funds.

15. **Default of Contactor**

Document will be included with the successful vendor's contact.

Failure to deliver within the time specified in the bid will constitute a default and may cause cancellation of the contract. Where the state had determined the contractor to be in default, the state reserves the right to purchase any or all products or services covered by the contract on the open market and to charge the contractor with cost in excess of the contract price. Until such assessed charges have been paid, no subsequent bid from the defaulting contractor will be considered.

16. **Order of Priority**
In the event there is a conflict between the Instructions to Bidders the General Terms and Conditions will govern.

17. **Applicable Law**
All contracts will be construed in accordance with and governed by the laws of State of Louisiana. Vendors shall be in compliance with applicable laws of the State of Louisiana and Federal Laws where applicable, to include licenses, fees and permits. Vendors are responsible for the cost of licenses, fees and permits.

18. **Certification of No Suspension or Debarment ($25,000 or more)**
By signing and submitting this bid, bidder certifies that its company, any subcontractors, or principals thereof, are not suspended or debarred under federal or state laws or regulations. A list of parties who have been suspended or debarred by federal agencies is maintained by the General Services Administration and can be viewed on the internet at www.sam.gov.
____**Federal Funded** _X_**Non-Federal Funded**

19. **E-VERIFY** (verification of employees)
Contractor acknowledges and agrees to comply with the provisions of La R.S. 38:2212.10 and federal law pertaining to E-Verify in the performance of services under this contract.

20. **Prohibited Contractual Arrangements**
Per Louisiana R.S. 42:1113.a, no public servant, or member of such public servant's immediate family, or legal entity in which he is a controlling interest shall bid on or enter into any contract, subcontract, or other transaction that is under the supervision or jurisdiction of the agency of such public servant. See statute for complete law, exclusions and provisions.

21. **Discriminatory Boycotts of Israel**
This section applies to procurements with a value of $100,000 or more and for vendors with five (5) or more employees
Prohibition of Discriminatory Boycotts of Israel
In accordance with R.S. 39:1602.1, for any contract for $100,000 or more and for any contractor with five or more employees, the Contractor certifies that neither it nor its subcontractors are engaged in a boycott of Israel, and that the Contractor and any subcontractors shall, for the duration of this contract, refrain from a boycott of Israel. The State reserves the right to terminate this contract if the Contractor, or any Subcontractor, engages in a boycott of Israel during the term of this contract.

22. **Prohibition of Companies That Discriminate Against Firearm and Ammunition Industries**
In accordance with La. R.S. 39:1602.2, the following applies to any competitive sealed bids, competitive sealed proposals, or contract(s) with a value of $100,000 or more involving a for-profit company with at least fifty full-time employees:
Unless otherwise exempted by law, by submitting a response to this solicitation or entering into this contract, the Bidder, Proposer or Contractor certifies the following:
The company does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association;
The company will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association

23. **Mutual Indemnification**
Each party hereto agrees to indemnify, defend and hold the other, its officers, directors, agents and employees harmless from and against any and all losses, liabilities and claims, including reasonable attorney's fees arising out of or resulting from the willful act, fault, omission, or negligence of the indemnifying party or of its employees, contractors, or agents in performing its obligations under this agreement, provided however, that neither party hereto shall be liable to the other for any consequential damages arising out of its willful act, fault, omission, or negligence.

24. **Fair Labor Standards Act**
Contractor shall be in compliance with the **Fair Labor Standards Act 29 USC 201-6;** Establishes minimum wage, overtime pay, equal pay, recordkeeping, and child labor standards for employees or in the production of goods for interstate commerce. **By signing**

Document will be included with the successful vendor's contact.

and submitting this bid, bidder certifies that its company, any subcontractors, or principals thereof is in accordance with said compliance. **United States Department of Labor website:** www.dol.gov/esa

25. **Davis-Bacon Act ($2,000 or more)**
Contractor shall be in compliance with the **Davis-Bacon Act, 40 USC 276A-7;** ensures that laborers and mechanics employed pursuant to federally funded construction contracts, subcontracts and construction under Federal grants, will be paid wages as determined by the U.S. Secretary of Labor. **By signing and submitting this bid, bidder certifies that its company, any subcontractors, or principals thereof** is in accordance with said compliance. **United States Department of Labor website: www.dol.gov/esa**

____Federal Funded ___x__Non-Federal Funded

26. **Small Business Entrepreneurship Programs**
The Southern University System is a participant in the Louisiana for the Small Entrepreneurships Program (the Hudson Initiative) and the Louisiana Initiative for Veterans and Service-Connected Disabled Veterans-Owned Business Small Entrepreneurships. Bidders are encouraged to consider participation. A list of certified vendors and additional information can be obtained from website http://www.ledsmallbiz.com. Potential participants may also register at this website. Businesses include minority and women.

27. **Public Works Projects (R.S. 38:2227)**
In accordance with the provisions of R.S. 38:2227; in awarding public works projects, any public entity is authorized to reject a proposal or bid, or not award the contract, to a business in which any individual with an ownership interest of ten percent (10%) or more, has been convicted, or has entered a plea of guilty or nolo contenere to any state felony or equivalent federal felony crime.

28. **Tobacco-Free Policy**
The use of tobacco products on any Southern University campus is prohibited by students, staff, faculty or visitors in all campus buildings, facilities, or property owned or leased by Southern University System and outside areas of the campus where non-smokers cannot avoid exposure to smoke; on campus grounds, facilities, or vehicles that are the property of the University; and at lectures, conferences, meetings, and social and cultural events held on school property or school grounds. The sale or free distribution of tobacco products, including merchandise on campus or at school events is prohibited.

29. **Equal Opportunity Employer**
Southern University and A&M College Systems of the State of Louisiana is an equal opportunity employer and looks to its contractors, sub-contractors, vendors, and suppliers to take affirmative action to effect this commitment in its operations. By submitting and signing this bid, the bidder certifies that he agrees to adhere to the mandates dictated by Title VI and VII of the Civil Rights Act of 1964, as amended; the Vietnam Era Veterans' Readjustment Assistance Act of 1974; Section 303 of the Rehabilitation Act of 1973; Section 202 of Executive Orderll24b,as amended; and the Americans with Disabilities Act of 1990. Bidder agrees that he will not discriminate in the rendering of services to and/or employment of individuals because of race, color, religion, sex, age, national origin, handicap, disability, veteran status, or any other non-merit factor. Bidder further agrees to keep informed of and comply with all Federal, State, and local laws, ordinances, and regulations which affect his employees or prospective employees. Any person who is a "Qualified Individual with a Disability" as defined by 42 USC 12131 of the American with Disabilities Act who has submitted a bid on this procurement and who desires to attend the bid opening, must notify this office in writing no later than seven (7) working days prior to the bid opening date of their need for special accommodations. If the requested accommodations cannot be reasonably provided, the individual will be so informed prior to the bid opening.

30. **Code of Ethics**
The contractor acknowledges that Chapter 15 of Title 42 of the Louisiana Revised Statutes (R.S. 42:1101 et. seq., Code of Governmental Ethics) applies to the Contracting Party in the performance of services called for in this contract. The contractor agrees to immediately notify the state if potential violations of the Code of Governmental Ethics arise at any time during the term of this contract.

31. **Vendor Forms/SU Signature Authority**
The terms and conditions of the SU solicitation and purchase order/contract shall solely govern the purchase agreement, and shall not be amended by any vendor contract, form, etc. The University's chief procurement officer, or designee, is delegated sole authority to execute any vendor contracts, forms, etc. Departments are prohibited from signing any vendor forms.

32. **Prosecution of Work**
The work is to be done when Southern University is in operation. The contractor shall, therefore, plan the repairs and installation in specifications so as not to interfere with normal operations of the facility and shall exert effort to expedite completion of the work once it has started. It is intended that the work shall be done during normal working hours, however, should work require overtime (Saturday, Sunday and/or night working hours), the cost must be borne by the contractor at no extra compensation from the Owner (Southern University).

33. **On-Campus Attendance Requirements (COVID-19)**

Document will be included with the successful vendor's contact.

The Center for Disease and Control (CDC) recommends social distancing and wearing of masks to prevent the spread of the Coronavirus (COVID19). Persons visiting Southern University are required to wear a mask/face covering and stay at least 6 feet between yourself and others, even when you wear a face covering.

34. **Termination of the Contract for Convenience**
The State/University may terminate the contract at any time by giving thirty (30) days written notice to the Contractor of such termination or negotiating with the Contractor an effective date. The Contractor shall be entitled to payment for deliverables in progress, to the extent work has been performed satisfactorily.

35. **Termination for Cause**
The State may terminate this Contract for cause based upon the failure of the Contractor to comply with the terms and/or conditions of the Contract; provided that the State shall give the Contractor written notice specifying the Contractor's failure. If within thirty (30) days after receipt of such notice, the Contractor shall not have either corrected such failure or thereafter proceeded diligently to complete such correction, then the State may, at its option, place the Contractor in default and the Contract shall terminate on the date specified in such notice. The Contractor may exercise any rights available to it under Louisiana law to terminate for cause upon the failure of the Owner to comply with the terms and conditions of this contract; provided that the Contractor shall give the State written notice specifying the State's failure and a reasonable opportunity for the Owner to cure the defect.

36. **Auditors**
It is hereby agreed that the Legislative Auditor of the State of Louisiana and/or the Office of the Governor, Division of Administration auditors shall have the option of auditing all accounts of contractor which relate to this contract.

37. **Awarded Products/Unauthorized Substitutions**
Only those awarded brands and numbers stated in the SU contract are approved for delivery, acceptance, and payment purposes. Any substitutions require prior approval of the Purchasing Office. Unauthorized product substitutions are subject to rejection at time of delivery, post-return at vendor's expense, and non-payment.

38. **Acceptance**
Upon written notice by the Owner, a Notice by Owner of Acceptance of Work will be executed and forwarded to the Contractor for recording with the Clerk of Court in the parish in which the work has been performed and shall furnish a clear Lien Certificate from the Clerk of Court (to the owner along with final invoice) forty-five (45) days after recordation of acceptance. Final payment of ten percent (10%) will be made at this time.

39. **Guarantee**
It is the intention of the specifications to secure a first-class permanent material and construction and to this end, Contractor will be held responsible for and must correct defects discovered in the work within one (1) year from acceptance. Should any materials or methods be called for, of such nature to render this guarantee impossible, written notice to this effect should be given Owner (Southern University) before signing contract and/or beginning of work; failure to do this will be construed as agreement to the strictest terms of the guarantee.

40. **Clean-Up**
The Contractor will be directed during the progress of work to remove and properly dispose of the resultant and debris. Upon completion, Contractor shall remove all equipment, unused materials and debris and will leave the premises in a clean and first-class condition.

41. **Examination of Site**
Each bidder will visit the site of the proposed project and will 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 work under this contract. No consideration or allowance will be granted the Contractor for failure to visit the site or for any alleged misunderstanding of the materials to be furnished or the work to be done.

42. ***Anti-Kickback Clause***
The Contractor hereby agrees to adhere to the mandate dictated by The Copeland "Anti-Kickback" ACT which provides that each Contractor or Subgrantee shall be prohibited from inducing, by any means, any person employed in the completion of work, to give up any part of the compensation to which he is otherwise entitled.

43. ***Clean Air Act***
The Contractor hereby agrees to adhere to the provisions which require compliance with all applicable standards, orders or requirements issued under Section 306 of the CLEAN AIR ACT which prohibits the use under non-exempt contracts, grants or loans of facilities included on the EPA list of Violating Facilities.

44. ***Clean Water Act***

Document will be included with the successful vendor's contact.

The Contractor hereby agrees to adhere to the provisions which require compliance with all applicable standards, orders or requirements issued under Section 508 of the Clean Water Act which prohibits the use under non-exempt federal contracts, grants or loans of facilities included on the EPA list of Violating Facilities.

45. **Energy Policy and Conservation Act**
The Contractor hereby recognizes the mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

46. ***Anti-Lobbying and Debarment Act***
The Contractor will be expected to comply with federal statutes in the Anti-Lobbying Act and The Debarment Act.

47. ***Signature Authority***

A CORPORATE RESOLUTION OR WRITTEN EVIDENCE OF THE AUTHORITY OF THE PERSON SIGNING THE BID FOR THE PUBLIC WORK AS PRESCRIBED BY LOUISIANA REVISED STATUTE 38:2212 (B)(5)
A copy of the applicable signature authority document/Board Resolution or LA Secretary of State Registration must be submitted with bid.

48. ***ADITIONAL REQUIREMENTS***

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE PLANS; THE PROJECT SPECIFICATIONS, AND HALL COMPLY WITH APPLICALBE LOCAL AND STATE BUILDING CODES AS WELL AS ANY AND ALL REGULATORY AGENCY REQUIREMENTS AND LAWS, INCLUDING BUT NOT LIMIOTED TO OSHA, ETC. GENERAL NOTES SHALL APPLY TO ALL DRAWINGS.
2. CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT, IF APPLICABLE, OF ALL CONFLICTS OR DISCRENPENSIES PRESENTED IN THESE PLANS PRIOR TO THE START OF WORK.
3. ALL WORK WHETHER SHOWN OR IMPLIED, UNLESS SPECIFICALLY QUESTIONED SHALL BE CONSIDERED UNDERSTOOD IN ALL RESPECTS BY THE GENERAL CONTRATOR AND WHO WILL BE RESPOSIBLE FOR ANY MISINTERPRETATIONS AND CONSEQUENCES THEREOF.
4. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. ENGINEER/ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ALL IDENTIFIED EXISTING UTILITIES NOT INDENTIFIED IN THE PLANS.
6. OWNER SHALL PROVIDE WATER FOR CLEANING OPERATIONS FROM ANY FIRE HYDRANT AT NO COST TO THE CONSULTANT.

PUBLIC AWARENESS NOTICE – 192.616

Southern University Baton Rouge owns and operates a master meter natural gas distribution system on the school campus. The gas system consists of an underground network of pipelines. The purpose of the gas system is to provide a reliable and safe economical source of energy for heating purposes. The pipeline system has the capacity to reliably deliver natural gas.

The hazards of natural gas are: it is odorless, colorless, tasteless, lighter than air and can ignite and/or explode with tremendous force when mixed with the right amount of air.

Prevention measures taken include:

- Adding odorant to the gas to give it that distinctive smell, similar to rotten eggs, to warn us of its presence.
- Testing the odorant level each calendar quarter,
- Performing annual gas leakage surveys, and
- Conducting periodic pipeline patrols.

The following are signs that may indicate a gas leak:

- A hissing or roaring sound (caused by escaping gas)
- A patch of dead or discolored vegetation in an otherwise green setting along a pipeline route
- Blowing dirt, grass or leaves near a pipeline,
- Continuous bubbling in wet, flooded areas,
- A "gas small" similar to rotten eggs.

Anyone who may smell this odor or notice any unusual conditions on or near gas mains, vents, service lines, meter sets, or especially inside of a building should call the maintenance office immediately. If you smell a strong gas odor inside a building, notify everyone in the building to leave. Do not operate any switches or use the phone. Go a safe distance away upwind of the gas smell and call the maintenance office. With any gas leak protect life first, then property, then notify the maintenance office.

State and federal laws require excavators to notify LA One-Call 2 days before digging. If any excavation is planned, you must notify LA One-Call which will notify the Southern University Baton Rouge Maintenance Department to locate the gas lines.

To obtain additional information or report a gas related issue call Southern University Baton Rouge Office of Facility Services. The maintenance office phone number is (225) 771-4741. The LA One-Call Center phone number is 811.

Document will be included with the successful vendor's contact.

INSURANCE REQUIREMENTS

Southern University and A&M College

ROADWAY IMPROVEMENT-JAMES L. HUNT STREET

BID # 10332

The Contractor shall purchase and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

A. MINIMUM SCOPE AND LIMITS OF INSURANCE

1. **Workers Compensation**
   Workers Compensation insurance shall be in compliance with the Workers Compensation law of the State of the Contractor's headquarters. Employers Liability is included with a minimum limit of $500,000 per accident/per disease/per employee. If work is to be performed over water and involves maritime exposure, applicable LHWCA, Jones Act, or other maritime law coverage shall be included and the Employers Liability limit increased to a minimum of **$1,000,000. A.M. Best's insurance company rating requirement may be waived for workers compensation coverage only.**

2. **Commercial General Liability**
   Commercial General Liability insurance, including Personal and Advertising Injury Liability, shall have a minimum limit per occurrence of **$1,000,000 and a minimum general aggregate of $2,000,000.** The Insurance Services Office (ISO) Commercial General Liability occurrence coverage form CG 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. Claims-made form is unacceptable.

3. **Automobile Liability**
   Automobile Liability Insurance shall have a minimum combined single limit per occurrence of $1,000,000. ISO form number CA 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. This insurance shall include third-party bodily injury and property damage liability for owned, hired and non-owned automobiles.

B. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions must be declared to and accepted by the Agency. The Contractor shall be responsible for all deductibles and self-insured retentions.

C. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverage

   a. The Agency, its officers, agents, employees and volunteers shall be named as an additional insured as regards negligence by the contractor. ISO Form CG 20 10 (current form approved for use in Louisiana), or equivalent, is to be used when applicable. The coverage shall contain no special limitations on the scope of protection afforded to the Agency.

   b. The Contractor's insurance shall be primary as respects the Agency, its officers, agents, employees and volunteers. Any insurance or self-insurance maintained by the Agency shall be excess and non-contributory of the Contractor's insurance.

   c. Any failure of the Contractor to comply with reporting provisions of the policy shall not affect coverage provided to the Agency, its officers, agents, employees and volunteers.

   d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the policy limits.

2. Workers Compensation and Employers Liability Coverage
   The insurer shall agree to waive all rights of subrogation against the Agency, its officers, agents, employees and volunteers for losses arising from work performed by the Contractor for the Agency.

3. All Coverage

   a. Coverage shall not be canceled, suspended, or voided by either party (the Contractor or the insurer) or reduced in coverage or in limits except after 30 days written notice has been given to the Agency. Ten-day written notice of cancellation is acceptable for non-payment of premium. Notifications shall comply with the standard cancellation provisions in the Contractor's policy.

   b. Neither the acceptance of the completed work nor the payment thereof shall release the Contractor from the obligations of the insurance requirements or indemnification agreement.

   c. The insurance companies issuing the policies shall have no recourse against the Agency for payment of premiums or

for assessments under any form of the policies.

d. Any failure of the Contractor to comply with reporting provisions of the policy shall not affect coverage provided to the Agency, its officers, agents, employees and volunteers.

D. ACCEPTABILITY OF INSURERS

All required insurance shall be provided by a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located. Insurance shall be placed with insurers with a A.M. Best's rating of **A-:VI or higher**. This rating requirement may be waived for workers compensation coverage only.

If at any time an insurer issuing any such policy does not meet the minimum A.M. Best rating, the Contractor shall obtain a policy with an insurer that meets the A.M. Best rating and shall submit another Certificate of Insurance as required in the contract.

E. VERIFICATION OF COVERAGE

Contractor shall furnish the Agency with Certificates of insurance reflecting proof of required coverage. The Certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates are to be received and approved by the Agency before work commences and upon any contract renewal thereafter.

In addition to the Certificates, Contractor shall submit the declarations page and the cancellation provision endorsement for each insurance policy. The Agency reserves the right to request complete certified copies of all required insurance policies at any time.

Upon failure of the Contractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of the Agency, may be suspended, discontinued or terminated. Failure of the Contractor to purchase and/or maintain any required insurance shall not relieve the Contractor from any liability or indemnification under the contract.

F. SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies OR shall be responsible for verifying and maintaining the Certificates provided by each subcontractor. Subcontractors shall be subject to all of the requirements stated herein. The Agency reserves the right to request copies of subcontractor's Certificates at any time.

G. WORKERS COMPENSATION INDEMNITY

In the event Contractor is not required to provide or elects not to provide workers compensation coverage, the parties hereby agree that Contractor, its owners, agents and employees will have no cause of action against, and will not assert a claim against, the State of Louisiana, its departments, agencies, agents and employees as an employer, whether pursuant to the Louisiana Workers Compensation Act or otherwise, under any circumstance. The parties also hereby agree that the State of Louisiana, its departments, agencies, agents and employees shall in no circumstance be, or considered as, the employer or statutory employer of Contractor, its owners, agents and employees. The parties further agree that Contractor is a wholly independent contractor and is exclusively responsible for its employees, owners, and agents. Contractor hereby agrees to protect, defend, indemnify and hold the State of Louisiana, its departments, agencies, agents and employees harmless from any such assertion or claim that may arise from the performance of this contract.

Maritime (Jones Act and LHWCA) needed when work is performed over navigable bodies of water

H. INDEMNIFICATION/HOLD HARMLESS AGREEMENT

Contractor agrees to protect, defend, indemnify, save, and hold harmless, the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants, employees, and volunteers, from and against any and all claims, damages, expenses, and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur, or in any way grow out of, any act or omission of Contractor, its agents, servants, and employees, or any and all costs, expenses and/or attorney fees incurred by Contractor as a result of any claims, demands, suits or causes of action, except those claims, demands, suits, or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its officers, agents, servants, employees and volunteers.

Contractor agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands, suits, or causes of action at its sole expense and agrees to bear all other costs and expenses related thereto, even if the claims, demands, suits, or causes of action are groundless, false or fraudulent.

NOTE: SUCCESFUL BIDDER WILL BE REQUIRED TO PROVIDE A CERTIFICATE OF INSURANCE WITH SOUTHERN UNVERSITY AS THE CERTIFICATE HOLDER
SOUTHERN UNIVERSITY AND A&M COLLEGE
PO BOX 9534-BATON ROUGE, LA 70813
225-771-4587

CONTRACT DOCUMENTS
AND TECHNICAL SPECIFICATIONS

FOR

JAMES L. HUNT STREET ROADWAY IMPROVEMENT SOUTHERN UNIVERSITY DEPARTMENT OF AGRICULTURE

Project No. WTAA-24103

East Baton Rouge Parish
James L. Hunt St.
Baton Rouge, LA 70813

January 2025

Prepared by

WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 North Street
Baton Rouge, LA 70802
(225) 383-0822

INSTRUCTIONS TO BIDDERS

A. PROJECT: James L. Hunt Street Roadway Improvement

Project No. WTAA-24103

B. FUNDING: This project is funded through Southern University Department of Agriculture. Specification sections within these specifications applicable to the noted funding sources will apply to this project.

C. PROPOSALS: Bidders are referred to Invitation to Bid for particular information and requirements regarding submittals of Bids.

D. DOCUMENTS: Invitation to Bid and Bidding documents may be obtained through the Office of WTAA Engineers, 2622 North Street, Baton Rouge, LA 70802, Phone (225) 383-0822.

E. EXAMINATION OF DOCUMENTS AND SITE: Bidders shall carefully examine the Bidding Documents and the construction site to obtain first-hand knowledge of the scope and the conditions of the Work. Each Contractor, Subcontractor, and Sub-subcontractor, by submitting a proposal to perform any portion of the Work, represents and warrants that he has examined the Drawings, Specifications project Manual and the site of the Work, and from his own investigation, has satisfied himself as to the scope, accessibility, nature and location of the work; the character of the equipment and other facilities needed for the performance of the Work; the character and extent of other work to be performed; the local conditions; labor availability, practices and jurisdictions and other circumstances that may affect the performance of the Work. No additional compensation will be allowed by the Owner for the failure of such Contractor, Subcontractor, or Sub-subcontractor to inform themselves as to conditions affecting the Work.

F. INTERPRETATION OF DOCUMENTS: If any person contemplating submitting a bid for the proposed Contract is in doubt as to the meaning of any part of the Drawings, Specifications (Project Manual), or other contract documents, he may submit to the Engineer, not later than seven (7) working days prior to the date set for opening bids, a written request for an interpretation or clarification.

G. SUBSTITUTIONS: Conditions governing the submission of substitutions for specific materials, products, equipment and processes are in the General Conditions. The Consultant must receive requests for substitutions seven (7) working days prior to the established bid date in accordance with Acts 832 of the 1985 Regular Session and 484 of the 1995 Regular Session of the State Legislature.

H. ADDENDA: Interpretations, clarifications, additions, deletions, and modifications to the documents during the Bidding period will be issued in the form of an addendum in accordance with Louisiana R.S. 38:2212(O). Any addendum or addenda will become a part of the Bidding Documents and the Construction Contract Documents, and receipt of them shall be acknowledged in the Bid Form.

I. CONTRACT TIME:

1. Once the Contractor is notified of the acceptance of his bid within the time specified in La. R.S. 2212 after the opening of bids, it agrees to execute a contract for the work as described in the contract documents. The Contractor also guarantees completion of this contract within the number of working days shown below and any approved extensions from the date of the, "Notice to Proceed".

Working Days Ninety (90)

J. DAMAGES: The Contractor agrees that the Owner may retain the sum indicated below from the amount of compensation to be paid him for each day after the above mentioned completion time, Sundays and Holidays included, that the contract remains incomplete. This amount is agreed upon as the proper measure of the Stipulated or Liquidated Damages, which the Owner will sustain per day, by failure of the Contractor to complete the contract at the stipulated time, and is not to be construed, in any sense, as a penalty. The Contractor shall be deemed to be in default by its failure to complete all of the work within the time specified in the contract.

Liquidated/Stipulated Damages per Diem One Thousand Dollars ($1,000.00) Per Diem

K. PREPARATION OF BIDS: Prices quoted shall include all items of cost, expense, taxes, fees and charges incurred, or arising out of, the performance of the work to be performed under the contract.

L. SUBMISSION OF POST-BID INFORMATION: The Bidder must provide all post-bid documents as required by the Invitation to Bid for this project in addition to any post-bid requirements.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: **WTAA ENGINEERS**
2622 North Street
Baton Rouge, LA 70802

(Owner to provide name and address of owner)

BID FOR: **James L. Hunt Street Roadway Improvements**
Southern University Department of Agriculture
Project No. WTAA-24103

(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: **WTAA Engineers** and dated: January 2025

(Owner to provide name of entity preparing bidding documents.)

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)_____

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 *(N/A)* for the lump sum of:
N/A Dollars ($ N/A)

Alternate No. 2 *(N/A)* for the lump sum of:

N/A Dollars ($ N/A)

Alternate No. 3 *(N/A)* for the lump sum of:

N/A Dollars ($ N/A)

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 a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: WTAA ENGINEERS
2622 North Street
Baton Rouge, LA 70802

BID FOR: James L. Hunt Street Roadway Improvements
Southern University Department of Agriculture
Project No. WTAA-24103

NAME OF BIDDER: _____

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		REMOVAL OF GUARDRAIL	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
202-02	268	LF		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		EXCAVATION AND EMBANKMENT	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
203-05	1	LUMP		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		GEOTEXTILE FABRIC	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
203-08	1554	SY		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		TEMPORARY SILT RETENTION SYSTEMS	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
204-06	4900	LF		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		CLASS II BASE COURSE (8.5" THICK)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
302-02	1554	SY		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		ASPHALT CONCRETE (4" THICK) (GRAVEL SECTION)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
502-01(1)	348.0	TON		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		ASPHALT CONCRETE (2" THICK) (MILL & OVERLAY SECTION)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
502-01(2)	360.1	TON		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		MILLING ASPHALT PAVEMENT	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
509-01	3201	SY		

DESCRIPTION:	_x_Base Bid or ___Alt. # ____		GUARD RAIL (SINGLE THRIE BEAM) (3'-1 1/2" POST SPACING)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
704-01	268	LF		

Wording for "DESCRIPTION" is to be provided by Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: WTAA ENGINEERS
2622 North Street
Baton Rouge, LA 70802

BID FOR: James L. Hunt Street Roadway Improvements
Southern University Department of Agriculture
Project No. WTAA-24103

NAME OF BIDDER: _____

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		TEMPORARY SIGNS AND BARRICADES	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
713-01	1	LUMP		

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		MOBILIZATION	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
727-01	1	LUMP		

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		SIGN (TYPE A)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
729-01	20	SF		

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		U-CHANNEL POST	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
729-21	3	EA		

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		PLASTIC PAVEMENT STRIPING (SOLID LINE) (4" WIDTH) (THERMOPLASTIC 90 MIL)	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
732-01	4058	LF		

DESCRIPTION:	_x_ Base Bid or ___Alt. # ____		CONSTRUCTION LAYOUT	
REF. NO.	QUANTITY	UNIT OF MEASURE	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
740-01	1	LUMP		

Wording for "DESCRIPTION" is to be provided by Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

SPECIFICATION TABLE OF CONTENTS

Division 01 – Technical Specifications

Section 201
Clearing and Grubbing

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Clear, grub, and remove vegetation and debris within the limits of the right-of-way and easement areas, except such items that are designated to remain or to be removed under other pay items.

Cut trees, logs, brush, stumps and debris; excavate and remove stumps, roots, submerged logs, snags, and other vegetative or objectionable material; dispose removed material in accordance with 202.02; and clean the area.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course.*

Erosion control shall be in accordance with Section 204.

201.01 MATERIALS. Vacant

201.02 GENERAL CONSTRUCTION REQUIREMENTS. Preserve the items to remain as designated by the engineer. Do not store equipment, materials, and supplies in proximity of items designated to remain. Remove trees without damaging items marked to remain. Repair damage to bark, trunks, limbs, or roots of vegetation marked to remain using horticultural and tree surgery practices published by the American Association of Nurserymen (AAN) under the supervision of a licensed landscape arborist at no cost to the department. Do not fell trees outside of the right-of-way. Damage outside the right-of-way caused by the contractor's operations shall be the contractor's responsibility.

201.03 CLEARING AND GRUBBING. Clear and grub to the limits of the right-of-way, or to the construction limits, whichever is greater, unless otherwise designated on the plans. When fencing or utility relocation is required, an area 10 foot wide, adjacent to and inside the right-of-way line, shall be cleared and grubbed. Mow when required by the engineer. Some loose limbs and roots approximately 2 inch x 2 foot and smaller may be allowed to remain; however, excessive amounts will not be allowed.

Explosives, when used, shall be in accordance with 107.11.

Fill stump holes and other holes left from clearing and grubbing by blading the area and backfilling with existing materials or soil complying with 203.06.1 and compact to a condition similar to surrounding soils.

Submit a plan for burning operations to the engineer for review and comment. Burning of materials shall not jeopardize anything designated to remain on the right-of-way, the surrounding forest cover, or other adjacent property. Burn in accordance with all laws and ordinances, including, but not limited to, the current regulations of the Louisiana Department of Environmental Quality and 107.13 and 107.14.

Remove materials and debris which cannot be burned and materials which are not burned from the right-of-way and dispose of in accordance with 202.02.

Merchantable timber in the area to be cleared, not removed from the right- of-way prior to the beginning date stipulated in the Notice to Proceed, becomes the property of the contractor.

Remove low hanging branches and unsound or unsightly branches on trees or shrubs designated to remain as directed. Trim branches of trees extending over the roadbed to a height of 20 foot above the pavement in accordance with accepted horticultural and tree surgery practices published by AAN.

201.04 MEASUREMENT AND PAYMENT. No measurement of area will be made for payment. Clearing and Grubbing is considered incidental to the work.

Section 202
Removing or Relocating Structures and Obstructions

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. This work consists of the removal or the relocation of structures, facilities or obstructions, hereinafter referred to as "structures" from the project right-of-way unless specified otherwise.

The removal of a structure from the project right-of-way is the razing, demolishing, and disposal of the structure after salvageable parts, components, and materials, as designated on the plans, have been recovered by the contractor.

The relocation of a structure from the project right-of-way is its movement, reassembly, restoration, reconstruction, or equivalent replacement at a new location outside of, and adjacent to, the project right-of-way including all service connections, appurtenances, and accessories as directed.

For the purposes of this section, remove structures and obstructions visible at the time of bid, including all related structures or as designated in the plans. Structures may include buildings, floor slabs, foundations, fuel tanks, septic tanks, fences, pipes, bridges, drainage structures, pavements, walks, curbs, abandoned pipelines and other similar facilities, or obstructions not designated or permitted to remain within the project right-of-way. This work also includes backfilling of resulting trenches, holes, and pits. If structures or obstructions are encountered which differ materially from those ordinarily encountered, the provisions of 105.18 shall apply.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course.*

Erosion control shall be in accordance with Section 204.

202.01 GENERAL CONSTRUCTION REQUIREMENTS. Remove and dispose of all portions of structures or obstructions on the right-of-way, except items for which other provisions have been made for removal or relocation. When specified, remove structures and appurtenances that extend beyond the right-of-way or that are entirely on private property. Remove specified salvageable material in sections which may be readily transported

without unnecessary damage. Stack salvageable material at specified storage areas. When no storage sites are specified, deliver salvaged materials to the nearest dotd maintenance unit. Dispose of materials not specified to be salvaged off the project right-of-way outside the view of the traveling public with written permission of the property owner on whose property the material is placed. Furnish copies of agreements (including rights of entry, etc.) With property owners to the engineer prior to beginning of work. The agreement must contain language holding the department harmless regarding any liabilities of the contractor or property owners. A certificate of release from the property owner will be required before final acceptance. Fill holes left by structure removal or the removal of materials associated with contaminated soils or sites by blading the area with surrounding soil or backfilling with soil complying with 203.06.1. Compact to a condition similar to the surrounding soils or as directed.

If any fuel storage tanks or other environmentally sensitive or contaminated sites are located during construction, stop construction activity in the immediate vicinity of the environmentally sensitive or contaminated site and notify the project engineer who in turn will notify the Department's Materials and Testing Section immediately for guidance. Testing and clean-up by the contractor shall be coordinated with the Materials and Testing Section.

The Department reserves the right to eliminate work items in accordance with 104.02.4.

202.02 REMOVING STRUCTURES. Unsalvageable materials in a structure designated for removal shall become the property of the contractor and shall be removed and disposed of by the contractor.

Demolish and remove appurtenances forming a part of a structure to be demolished, whether integral or not integral to the structure. Demolish and remove washhouses, garages, cisterns, and other buildings and appurtenances used in conjunction with a structure in the same manner as the structure. Remove existing yard fences, drives, walks, and shrubbery. The above are all considered part of the structure to be demolished and removed.

Plug and seal all abandoned water wells in accordance with 202.06.

Demolishing of a structure, any part of which is used as a service station, shall include the removal of gasoline pumps, tanks, pipes, signs and other appurtenances. Remove underground fuel tanks in accordance with 202.05.2. Existing underground fuel tanks shall not be reused or used for other purposes.

Remove and dispose of material in existing foundations, concrete or masonry floors, chimneys, and other appurtenances. Remove and dispose of cattle pens, cane derricks, cattle guards, or other such structures.

202.02.1 Pavement, Base Courses, Walks, and Curbs: Dispose of pavements, stabilized or treated base courses, walks, curbs, and gutters, designated for removal as shown on the plans and as directed.

When the existing shoulder underdrain at the pavement edge is to remain in place and in service but removal of the shoulder surfacing and base is required, do not damage the existing shoulder underdrains. Damaged shoulder underdrains shall be satisfactorily repaired at no direct pay.

202.02.2 Pipe: Remove and store pipe that is to be re-laid so that there will be no loss or undue damage before relaying. Replace sections lost from storage or unduly damaged at no direct pay. When specified, pipe not to be re-laid and considered usable shall be salvaged, cleaned of soils or other materials, stored and stacked.

202.02.3 Bridges and Drainage Structures: Bridges, including approach slabs, and drainage structures in use by traffic shall not be removed until satisfactory arrangements have been made to accommodate traffic.

Unless otherwise directed or shown on the plans, remove substructures to natural stream bottom and those parts outside the stream to one foot below natural ground surface. Remove existing structures within the limits of a new structure as necessary to accommodate construction of the new structure.

Dismantle steel or wood bridges to be salvaged without unnecessary damage. Dismantling shall include stripping all hardware. Match-mark structural members before dismantling.

Explosives, when used, shall be in accordance with 107.11. Complete blasting or other operations necessary for removal of an existing structure or obstruction, which may damage new construction, prior to placing the new work.

202.03 RELOCATING STRUCTURES. Place structures to be relocated in their new locations as directed and restore to their original condition. Place structures to be relocated on foundations of the same type and character as the original foundations.

Relocate appurtenances forming a part of a structure to be relocated, whether integral or not integral to the structure, in the same manner as the structure. Relocate or replace appurtenances associated with the structure as directed with appurtenances of the same size, type, and character as existed before the structure was relocated.

Disconnect sanitary sewers, water, gas, electric, television cable, and telephone service lines connected to structures being relocated and reconnect as quickly as possible. The contractor shall be responsible for all notices to public utility companies and for all fees charged by them. Relocate existing yard fences, drives, and walks; extend same as necessary. Remove and replant existing shrubbery at new locations as designated. All of the above shall be considered as appurtenances not integral to the structures to be removed and relocated.

Remove material in existing foundations, concrete or masonry floors, chimneys and other appurtenances, when not used in reconstruction of appurtenances, and dispose of in accordance with 202.02. Furnish new material required in performing any of these operations at no direct pay.

Relocate contents of structures with the structure to its new site. When not feasible to relocate structures with contents therein, remove the contents from the structure at its original location and properly store and replace in the relocated structure without damage or loss to contents.

Relocate cattle pens, cane derricks, cattle guards, or other such structures on or beyond the right-of-way line as directed. Use materials in structures suitable for reuse in their reconstruction. Furnish new materials similar in kind to that in place at no direct pay, including foundations.

Prior to removal of butane or propane gas tanks, obtain the written approval of the Louisiana Liquefied Petroleum Gas Commission. Do not use or reuse existing underground butane or propane gas tanks for other purposes. The Department will reimburse the contractor for the cost of the new tank when the contractor presents the original receipted bill.

Furnish the engineer a Certificate of Release from each property owner; in case of separate ownerships of structure and property, furnish a Certificate of Release from each owner. This certificate shall state that the relocated structures are in an acceptable condition and that said owner waives all claims for damages to the property and structures relocated. When a Certificate of Release cannot be secured from the property owner, submit to the engineer a notarized letter documenting the inability to obtain the release.

202.04 REMOVING ENVIRONMENTALLY SENSITIVE MATERIALS. When removal or remediation of any environmentally sensitive or contaminated sites is required during construction, coordinate construction operations through the materials and testing section. If failure to follow the guidelines of the materials and testing section subsequently

causes or increases harm or damage to the environment, then all resulting fines and clean-up costs shall be the responsibility of the contractor.

202.04.1 Asbestos: When information is available, the Department will indicate on the plans which structures contain friable or non-friable asbestos. When a structure is identified on the plans or discovered on the project to contain asbestos and will be demolished or renovated, contact the Materials and Testing Section to coordinate disposal prior to commencing asbestos removal. Use a certified asbestos abatement contractor for proper removal and disposal. All applicable requirements for proper handling of asbestos material shall then be followed by the contractor for the continued removal of the asbestos containing material. Notify the Department of Environmental Quality (DEQ), Air Quality Division through the use of the proper notification form, DEQ AAC2, at least 10 calendar days prior to initiation of demolition or renovation of structure(s). The contractor shall maintain and furnish to the engineer, all records pertaining to the disposal of the asbestos containing material, either as non-friable or friable asbestos, within 21 calendar days of the material being removed from the site for disposal.

Asbestos-containing materials in structures that are removed or relocated without disturbing asbestos will not be abated. Provide a Certificate of Release to the engineer.

202.04.1.1 Non-Friable Asbestos: When a structure contains non-friable asbestos, carefully remove the asbestos without excessive breakage or crushing before demolition or renovation of the structure. Dispose of the non-friable asbestos material at an approved industrial landfill.

202.04.1.2 Friable Asbestos: When a structure contains friable asbestos, request that DEQ provide a confirmation letter with an Asbestos Disposal Verification Form (ADVF). Complete the ADVF within 90 calendar days from the date of issue. Only contractors or subcontractors certified by DEQ as Asbestos Abatement Entities shall remove friable asbestos from structures. Remove the asbestos before structure demolition or renovation. Perform friable asbestos removal, handling, and disposal in accordance with the latest requirements for asbestos abatement of the DEQ Air Quality Division.

Maintain, and furnish to the engineer within 21 calendar days, Chain of Custody verification records for the friable asbestos from the work site to the disposal site. These records will become part of the permanent project records.

202.04.2 Underground Fuel Tanks: Before removal, underground fuel tanks will be registered with the DEQ by the DOTD Materials and Testing Section as abandoned underground storage tanks. The contractor shall notify the project engineer in writing at least 45 calendar days prior to removal of tanks. Upon receipt of the contractor's notification, the engineer will immediately notify the Materials and Testing Section. All site activities, including the collection of closure samples and tank removal, as defined in the latest DEQ Underground Storage Tank (UST) regulations, shall be performed by a DEQ approved contractor. Submit closure test results, all documentation, and all necessary forms to the Materials and Testing Section to be approved and forwarded to DEQ. The contractor and/or the certified UST subcontractor shall note that all contact and/or coordination with the DEQ is to be the responsibility of the Materials and Testing Section.

Take all necessary precautions to prevent the infiltration of water into tanks and tank excavations during the work.

During routine site closure, the removal, transportation, and disposal of tanks, and the handling of contaminated soil and contaminated fluid, shall be in accordance with all local, state, and federal laws and regulations. Limits of excavation and quantities of contaminated soil and contaminated fluid to be removed, transported, and disposed shall be as specified or as directed.

When underground storage tanks (UST) have been filled with concrete, sand, or other such material and are designated on the plans for removal, the contractor or certified UST subcontractor shall remove, transport and dispose of such tanks in accordance with the recommendations of the American Petroleum Institute (API) and the requirements of the Louisiana Department of Environmental Quality (DEQ) or other regulatory agency of jurisdiction. When such UST are discovered during construction, stop construction activity in the immediate vicinity of the UST and notify the project engineer in accordance with this subsection. The DOTD Materials and Testing Section will verify the closure status of such filled UST discovered during construction prior to any UST site activity by the contractor or certified UST subcontractor. The contractor or certified UST subcontractor shall collect and submit for laboratory analysis+x a representative sample of non-solidified fill material within the storage tank for landfill acceptance. The results of the laboratory analysis shall be used to determine the disposition of the UST fill material. Provide a copy of all laboratory analyses to the Department's Materials and Testing Section for verification prior to profiling materials for landfill acceptance.

202.04.3 Contaminated Soils: Soil in areas of underground fuel tanks or other areas contaminated with petroleum products or other identified

toxic materials at levels above the regulatory limits and is non-protective of groundwater shall be excavated as shown on the plans or as directed. Determination of groundwater protection shall be through the use of the Synthetic Precipitation Leachate Procedure (SPLP) or as directed by the Materials and Testing Section.

Remove the overburden above the contaminated soil to the dimensions shown on the plans or as directed. Also, excavate the contaminated soil at the locations shown on the plans or as directed. Contaminated soil determined to be protective of groundwater, through the use of the SPLP, shall be excavated by the contractor and placed in the roadbed when the soil is determined to be "suitable soil" by the engineer, and when the volume of soil is within quantities specified on the plans. No additional cover of the contaminated soil, other than the specified paved surfaces courses, will be required in the roadbed.

All remaining contaminated soil determined to be protective of groundwater, but not used in the roadbed, shall be placed in other embankment areas within the limits of the project.

Contaminated soil placed in other embankment areas shall be covered with 2 feet of compacted soil by the contractor in accordance with Section 203. Final grade shall be maintained in accordance with the plans. Load the contaminated soil determined not to be protective of groundwater into approved hauling vehicles and dispose of in a site approved by the DEQ. Furnish the engineer, within 21 calendar days, Chain of Custody verification records for the contaminated soil. The Materials and Testing Section will verify that all contaminated soil has been removed.

While the excavation is open, construct and maintain a soil berm around the excavation to prevent surface water runoff from entering the excavation. The removed overburden may be used to construct the berm and backfill the excavation.

Removal and disposal of contaminated soils will be in accordance with all local, state, and federal laws and regulations.

202.04.4 Contaminated Fluids: Remove and dispose of contaminated fluid, in underground fuel tanks, in areas of underground fuel tanks, or other areas as shown on the plans or as directed.

The Department will determine the quantity of contaminated fluid to be removed.

Pump the contaminated fluid into approved hauling vehicles. Remove contaminated fluid from underground fuel tanks before tank removal.

Dispose or recycle of contaminated fluid in a site approved by the Department of Environmental Quality. Furnish the engineer, within

21 calendar days, Chain of Custody verification records for the contaminated fluid.

The Department will verify the removal of the contaminated fluid.

Removal and disposal of contaminated fluids will be in accordance with all local, state, and federal laws and regulations.

202.04.5 Paint Containing Lead or Other Hazardous Materials on Metal Surfaces: Remove steel members of structures protected by paint containing lead or other hazardous materials as shown on the plans or as discovered in the field and prepare for transport in accordance with Section 107.

Prior to removal, transport, treatment, or disposal of any steel members, submit the following to the engineer:

1. Plan of removal or treatment of steel members.
2. Plan for transport of steel members and any hazardous materials.
3. Name and address of the licensed recycling center.

Deliver such steel members to a licensed recycling center capable of processing steel members coated with paint identified as hazardous by the Resource Conservation and Recovery Act (RCRA).

The DOTD or the Owner will be the Generator and obtain the generator number. The contractor will be responsible for obtaining an approved disposal site, arranging for transporting the material and/all testing required. The manifest for transportation will have the DOTD Generator number on it and should be signed by the contractor, DOTD Inspector, and the Disposal Operator with copies to each upon completion.

Unless otherwise directed or shown on the plans, the contractor will be allowed to retain any steel member once the lead paint has been removed and disposed of prior to steel leaving the jobsite in accordance with procedure above at no cost to the Department.

Transport all steel members or hazardous material in accordance with all federal, state, and local laws. Provide Certificates of Disposal, Chain of Custody forms, or other applicable documents within 21 calendar days following each shipment.

202.04.6 Treated Timber: Remove creosoted and other treated timber or lumber shown on the plans or discovered in the field; and prepare for transport by methods approved by the Department. Dispose of all materials that are not designated to be salvaged by the Department or salvaged by the contractor in an appropriate landfill. Provide Certificates of

Disposal, Chain of Custody forms, or other applicable documents within 21 calendar days following each shipment.

202.04.7 Universal Wastes: Universal wastes are hazardous wastes defined in LAC Title 33, Part V, Chapter 38, Section 3813 to include batteries, pesticides, thermostats, lamps and antifreeze. Universal wastes shall be removed in accordance with the plans and shall be stored and prepared for transport as specified in LAC Title 33, Part V, Chapter 38 and herein.

Inform all employees who handle universal wastes of the proper handling and emergency procedures appropriate to the type of waste.

202.04.8 Other Regulated Materials (ORM): Items for removal under this subsection are defined as any material not considered in the above subsections and may be disposed of as a solid waste in the appropriate solid waste landfill. Such materials may include asphalt shingles, noninfectious medical waste, etc. not covered in other items.

202.05 PLUGGING OR RELOCATING EXISTING WATER WELLS. Plug and seal all abandoned water wells at the locations shown on the plans, or as directed by the engineer, in accordance with the W*ater Well Rules, Regulations, and Standards, State of Louisiana.* This document is available at the department of transportation and development, water resources section. Water well abandonment must be accomplished by a DOTD licensed water well contractor. Relocated water wells shall conform to the Sanitary Code of the State of Louisiana as prepared and promulgated by the Louisiana State Board of Health.

202.06 MEASUREMENT. Removing structures and obstructions will be measured on a lump sum basis or by the unit as stipulated in the contract and shall include appurtenances, foundations, etc.

Hauling salvaged materials to storage sites will not be measured for payment.

When an item is included for removal of bridges, the removal of the approach slabs, superstructure, and substructure will be considered part of the work unless otherwise specified or shown on the plans.

Removing or relocating structures will be measured by the unit stipulated in the contract. Each principal structure with its associated appurtenances, whether integral or not integral to the structure being removed or relocated, will be considered as a separate unit including its associated appurtenances.

Plugging of existing abandoned water wells or relocating water wells will be measured per each well plugged and accepted or relocated.

Measurement for removal of contaminated soil and non-contaminated overburden will be by the cubic yard using the in-place quantities as determined by cross-sections.

Measurement for contaminated fluid will be by the gallon.

Removal, transportation, and related fees for disposal of steel members of structures protected by paint containing lead or other hazardous materials, or creosoted timbers or lumber, will be considered part of the work when shown on the plans and will not be measured for payment.

When a structure to be removed or relocated is shown on the plans to contain universal wastes, the removal, storage and transport of the universal waste to an approved disposal site or destination facility will not be measured for payment but will be included in the structure to be removed or relocated.

Measurement for removal of Other Regulated Materials (ORM) will be as designated on the plans.

202.07 PAYMENT. Payment for removal of structures or specific obstruction items stipulated for removal and disposal under unit price or lump sum pay items will be made at the contract price per unit or lump sum as specified. This will include demolishing, removing and disposing of such items as well as the excavation and backfill incidental to their removal when required. When the removal is in an area to be excavated and payment for excavation is made under other items, no deduction will be made from the excavation quantities. The price shall also include salvage of materials, their custody, preservation, storage on the right-of-way or as designated on the plans, and disposal.

Payment for the removal of bridges will include removal of the approach slabs, superstructure, and substructure.

Payment for the relocation of structures will be made at the contract unit price which will include all costs for moving, reassembly, restoration, reconstruction, or equivalent replacement of the structures.

Payment for plugging and sealing existing abandoned water wells or relocating existing water wells will be made at the contract unit price which will include all labor, material, tools, equipment, and incidentals necessary to complete the work.

If a structure is to be removed or relocated as a unit under Pay Items 202-01, 202-02, or 202-03 and;

1. The contractor enters into an agreement with a property owner for disposition of the structure other than as shown on the plans; or if it is subsequently determined that said structure can remain in place, in whole or in part, with or without minor adjustments, and;

2. The contractor enters into an agreement with the property owner incorporating such revised determination and any accompanying adjustments regarding said structure, including any damages for leaving the structure in place, then;

3. The contractor shall furnish such agreement to the engineer for approval. If approval is given by the engineer, the contractor shall furnish the Department with a Certificate of Release from the property owner for the unit.

In case of multiple ownership interest in the structure and/or property, a Certificate of Release from each owner shall be furnished. This certificate shall state that said owner waives all claims for damages to the property and structure to be removed, relocated, left in place, or otherwise handled to the owner's satisfaction.

Except as provided hereinafter, the contractor will be paid for removing, relocating, or other handling of the structure at the contract unit price as listed under Pay Items 202-01, 202-02, or 202-03. However, a deduction will be made in such amount if:

1. A determination to allow the structure to remain in place results in a decrease in cost to the contractor;

2. An allowance is made to the owner for damages to the property or structure caused by the contractor, or its subcontractor, agent, or assign; or

3. Any other adjustment of the contract amount for removal, relocation, or other handling of said unit under Pay Items 202-01, 202-02, or 202-03, is deemed justified.

When a structure has been identified on the plans as containing friable or non-friable asbestos, the price for asbestos removal and disposal will be included in the bid price for removal, relocation, or demolition of the structure. When a structure is found to contain friable or non-friable asbestos and it has not been identified on the plans as containing asbestos, payment for the removal and disposal of the asbestos will be made in accordance with 109.04, including the cost of all testing.

Payment for removal, transportation, and disposal of contaminated soils and fluids will be in accordance with rates specified in applicable appendices (currently Appendices A and B) of the *Louisiana Motor Fuels Underground*

Storage Tank Trust Fund Cost Control guidance document as maintained and updated by the Louisiana Department of Environmental Quality (DEQ). The DEQ cost control guidance document can be obtained at DEQ website. All payments under this item will be in accordance with industry standards, which include all equipment, labor, and materials necessary to complete the work, including backfilling any excavation. Payment for work not covered in the cost control guidance document, or any disputed payments, will be negotiated and resolved prior to performance of work. The Department will reimburse the contractor monthly for the actual incurred cost for such services. The contractor shall furnish documentation with the request for reimbursement.

Payment for removing steel members of a structure identified on the plans as being protected by paint containing lead or other hazardous materials, or creosoted timbers or lumber, and transporting them to the recycling center or landfill, will be included in the bid price for removal or relocation of the structure. When a structure is determined to have steel members protected by paint containing lead or other hazardous materials, or creosoted timber or lumber, and it has not been identified on the plans as such, payment for removal and transport of the members to a licensed recycling center or landfill will be made in accordance with 109.04. Unless otherwise directed or shown on the plans, the contractor will be allowed to retain any steel member once the lead paint has been removed and disposed of prior to steel leaving the jobsite and a Chain of Custody form or other applicable documentation is submitted to the engineer within 21 calendar days.

When the plans show that a structure to be removed or relocated contains a universal waste, payment for the removal of the universal waste will be included in the contract unit price for the removal or relocation of the structure, which will also include all equipment, labor, and materials required for the removal, storage, and transport of the universal waste in accordance with LAC Title 33, Part V, Chapter 38. When a structure to be removed or relocated is found to contain a universal waste and it is not identified as such on the plans, payment for the removal, storage, and transport of such universal waste in accordance with LAC Title 33, Part V, Chapter 38 will be made in accordance with 109.04.

Payment for removal of other regulated materials (ORM) will be as designated on the plans.

Payment will be made under:

Item No.	Pay Item	Pay Unit
202-01	Removal of Structures and Obstructions	Lump Sum
202-02	Removal of _____	As Required
202-03	Relocation of _____	As Required
202-04	Excavation, Disposal and Backfilling of Non-Contaminated Overburden	Cubic Yard
202-05	Excavation, Disposal and Backfilling of Contaminated Soil	Cubic Yard
202-06	Removal and Disposal of Contaminated Fluid	Gallon
202-07	Plugging Existing Water Wells	Each

Section 203
Excavation and Embankment

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. This work consists of excavation, disposal, placement, and compaction of materials for which provisions have not been made under other sections of these specifications. This work shall include excavation and embankment construction 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. When specified, supply, install, and monitor settlement plates. When contaminated soils or underground tanks are encountered, handling shall be in accordance with Section 202. Disposal of material shall be in accordance with 202.02.

The plans may include data regarding the boring and classification of existing materials. The Department does not guarantee that individual samples are representative of the entire project, and bidders are required to study, make interpretations and additional investigations, as necessary, at no direct pay. The bidder shall determine the suitability of the on-site soils to meet specifications of Section 203.

The contractor shall comply with 107.09 for work in, over or adjacent to navigable waters and wetlands, and shall comply with 107.27 when cultural artifacts, historical sites, or archaeological sites are encountered.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course.*

Excavated material may be used in accordance with 203.06.

Temporary erosion control shall be in accordance with Section 204.

203.01 GENERAL EXCAVATION. General excavation consists of the excavation of materials, as required by the plans, except drainage excavation and structural excavation. General excavation also includes unsuitable material in accordance with 203.04.

203.02 HYDRAULIC EXCAVATION.

203.02.1 Drainage Excavation: Drainage excavation includes the excavation for drainage beyond the limits of the roadway section. Drainage

excavation also includes inlet and outlet ditches to structures or roadways; changes in or deepening of channels of streams, berm ditches, ditches parallel or adjacent to the roadway beyond the limits of the roadway section; and material excavated from areas under bridges.

203.02.2 Cleaning Existing Ditches: This item consists of excavating and disposing of sediment and vegetative materials from existing ditches in order to reestablish flow lines on the existing alignment in accordance with plan details and the following. Establishment of ditch grades, if necessary for this item, will be the responsibility of the project engineer.

Unless otherwise directed, dispose of material excavated from existing ditches in accordance with 202.02.

203.03 UNSUITABLE MATERIAL. Unsuitable materials are soils containing significant amounts of debris or organic matter including stumps, roots, logs, and humus, or other materials which will decay or produce subsidence, including highly saturated soils, which the engineer determines are not satisfactory for use in the embankment or other construction purposes. Remove unsuitable materials and dispose of as general excavation. Remove unsuitable materials determined to be environmentally sensitive and dispose of in accordance with 202.05.

203.04 BORROW. Borrow is defined as soils required for construction of embankments or other portions of the work in excess of soils obtained from excavation. Obtain borrow from an approved source and use in accordance with 203.06. Make arrangements for obtaining borrow at no direct pay.

Securing of an exclusive option by a bidder or contractor on borrow areas or materials for the work will be considered a violation of Louisiana law and will be a basis for rejection of bids or such other action the Department deems advisable.

Notify the engineer in writing a minimum of 30 calendar days in advance of contractors borrow operations so that samples may be taken and soil tests completed prior to beginning borrow operations. Include in notification: boring requests, quality control test results, property owner agreements, and other information as required by the Materials Sampling Manual and the *Application of Quality Assurance Specifications for Embankment and Base Course* to the District Lab.

Unless otherwise authorized in writing, locate borrow pits, gravel pits, and quarry sites at least 300 feet from the right-of-way.

When sources of borrow are located adjacent to a stream or river listed on the National System of Wild and Scenic Rivers or the Louisiana Natural

and Scenic Rivers System, locate borrow pits and any stockpiled materials at least 300 feet from the natural stream or river bank.

Clear the borrow pit and access to allow access for DOTD boring equipment. Survey the borrow area with a base line staked. Furnish both the engineer and laboratory with a location plat and borrow pit plat. Do not begin borrow operations until materials are approved for use.

Sampling of soils from open excavations in lieu of borings will be allowed provided the open excavations display and allow sampling of each soil strata and the excavation is at no cost to the Department.

203.05 SOIL USAGE. The 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 by approved methods to adjust percent silt or sand will be permitted. Do not blend soils that do not meet Liquid Limit or PI requirements in order to modify the Liquid Limit or PI. Soils may be treated with lime to reduce PI in accordance with 203.06.5.

Soil properties will be determined by the test methods shown in Table 203-1, "Soil Properties."

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

203.05.1 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.

203.05.2 Nonplastic Embankment: Nonplastic embankment shall be as specified in 203.09.

203.05.3 Headers: Headers are that portion of the embankment within 500 feet of a bridge end. Construct headers for their full height with usable soils meeting the requirements of 203.06.1, and 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. Compact headers to 98 percent of maximum dry density in accordance with 203.07.

203.05.4 Embankments other than Headers: Construct embankments with usable soils meeting the requirements of 203.06.1. 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 203.06.1 are met. If lime treatment is used, it will be at no direct pay. Lime treatment shall be Type E Treatment conforming to Section 304.

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, and
2. The contractor agrees to take responsibility for any additional maintenance required.

203.05.5 Plastic Soil for Slopes:

203.05.5.1 Use Topsoil in Accordance with Section 715 Embankment Material: The outside layer of embankment (fill sections) will consist of a plastic soil blanket in accordance with 203.10.

203.05.5.2 Cut Slopes, PI Less than 10: When soils having a PI less than 10 exist on cut slopes, undercut 12 inches and place a plastic soil blanket conforming to 203.10.

203.05.5.3 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, undercut and place a plastic soil blanket complying with 203.10. 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 203.10, at the option of the engineer and concurrence of the contractor. In such case, payment will be in accordance with existing items or 109.04, as applicable, not to exceed the cost of undercut and replacement.

203.05.6 Usable Soils for Slope Adjustments and Shoulder Widening: When the thickness of embankment material used for slope adjustment or unpaved shoulder is less than 12 inches, a plastic soil complying with 203.10 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.

203.06 GENERAL REQUIREMENTS.

203.06.1 General: Excavation and embankment work consists of constructing roadway embankments, including preparation of surfaces on which they are to be placed; constructing drainage excavation; constructing backslopes; constructing dikes, when required; placing and compacting approved material in areas where unusable material has been undercut and removed; placing and compacting embankment material in holes, pits, and other depressions.

Do not place or spread embankment materials on portland cement concrete or asphalt concrete pavements. Do not damage pavement surfaces, edges and joints during embankment operations.

203.06.2 Surface Layer Preparation: Complete all necessary clearing and grubbing in an area, prior to beginning excavation, grading, or embankment operations in that area. Prior to any embankment operations in an area, cut ditches as required to facilitate drainage in that area unless otherwise noted on the plans.

When preparing surface layers on which the embankment or base is to be placed, 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:

1. Draining and drying of the surface until the material is within the limits of optimum moisture before compaction is attempted.
2. Using lighter weight construction equipment for manipulating, disking, drying, and compacting the material.
3. Placing successive loads of approved material in a uniformly distributed layer of a thickness necessary to support equipment while placing subsequent layers.
4. Rerouting heavy construction equipment around the area until the embankment can support the equipment without damage to foundation soils.

Remove unstable materials by undercutting, unless otherwise directed, and backfill to required section with usable soils as directed.

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

When a new roadway is to be constructed on an existing roadbed, remove existing surface courses. When the surface of the existing roadbed is within 2 foot of finished sub-grade, scarify the existing roadbed full width to a depth of not less than 9 inches and re-compact to at least 95.0 percent of maximum dry density.

203.06.3 Excavation: Excavated material shall become the property of the contractor. Soils from excavation areas may be used in embankments or other finished sections when approved. Dispose of surplus or unusable excavated material in accordance with 202.02 or as provided in this subsection.

When obliteration of old roadways is required, include grading operations necessary to satisfactorily incorporate the old roadway into the new roadway and surroundings to the satisfaction of the engineer and to allow drainage.

203.06.4 Settlement Plate Installation and Monitoring: Furnish and install settlement plate as shown on the plans.

Install settlement plate prior to placement of any fill. Place settlement plate on top of the geotextile fabric if shown on the plans, otherwise, place the settlement plate on natural ground. Maintain a vertical and undamaged riser pipe during embankment placement and compaction. Replace any settlement plate damaged during construction at no cost to the Department.

Establish the elevation of the settlement plate. Take initial settlement plate elevation readings immediately after installation. Unless specified on the plans, monitor settlement plate as follows: immediately after the final lift placement, twice weekly for the first month, and weekly for five months thereafter. Repeat this sequence if any additional fill placement or surcharge is required. Record the embankment elevation and surcharge height for each settlement plate reading. Submit settlement plate readings to the Project Engineer. The Project Engineer will verify the initial and final elevations for acceptance.

Remove riser pipe and casing three feet below base course upon acceptance.

203.06.5 Embankment: Embankment material shall be in accordance with 203.06. Place in uniform layers not exceeding 12 inches of un-compacted thickness. Place each layer for the full width of embankment, blend as necessary to obtain a uniform material, bring to a uniform moisture content, and compact to a minimum of 95.0 percent of maximum dry density before the next layer is placed. Determine maximum dry density 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 shall be met. 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. If not, reprocess and re-compact the lifts until these requirements are met.

Topsoil shall be placed and compacted in accordance with 715.03.

Ensure that final embankment slope lines are uniform in appearance. Measure as necessary to assure that the elevations at the top, bottom, and intermediate breaks in the slope are such that minimum acceptable slopes are achieved. Visually inspect the slopes and ensure the slopes are straight without valleys or humps. If an apparent discrepancy is discovered upon visual inspection, take measurements a minimum of every 10 feet measured along the slope between theoretical break points in the embankment. Allowable tolerances for slope grade will not be less than by 0.03 foot/foot nor greater than 0.15 foot/foot. The slopes shall be reworked until these criteria are met. The top of embankment shall not vary from the established grade by more than ±0.1 foot.

Conduct operations to prevent lamination between lifts. Correct all laminations between lifts prior to placing additional lifts. Assure that surfaces of excavated areas and embankments are smooth and uniform. Do not disturb material outside the construction limits.

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, place a plastic soil blanket complying with 203.10.

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, cut the slope of the ground on which the embankment is to be placed into steps, as directed, before fill is placed.

When an embankment is to be constructed to a height of less than 5 feet, remove heavy sod and objectionable vegetation from the area on which the embankment is to be placed. Scarify the area to a depth of approximately 9 inches. Re-compact this area to at least 95.0 percent of maximum dry density 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 disk the area on which embankment is to be placed to the satisfaction of the engineer and re- compact before construction of embankment.

When embankment material is to be deposited only on one side of abutments, wing walls, piers, or culvert head walls, do not compact the area immediately adjacent to the structure to the extent that it will cause excessive pressure against the structure. When the embankment is to be deposited on both sides of a concrete wall or similar structure, conduct operations so that the embankment is always at approximately the same elevation on both sides of the structure. Backfill structures in accordance with Section 802.

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, place the embankment by end dump or other approved methods to an elevation where normal construction methods can begin. Construct embankments placed above this elevation 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. In addition, do not allow this material to be trapped and incorporated in the embankment except as part of plastic soil for slopes.

203.07 CUT AREA PREPARATION. Scarify and compact the top 12 inches of the cut area to such density that the compaction requirements of the type base course being constructed shall be met. Construction, compaction, and testing requirements shall comply with 203.07.

When unstable soils are encountered, the engineer will determine the limits to be undercut. 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 203.07. When a stable foundation cannot be reached, "bridge-in" the embankment materials and construct the remaining embankment to existing grade in accordance with 203.07.

203.08 NONPLASTIC EMBANKMENT.

203.08.1 Materials: Non-plastic embankment material shall comply with 1003.09 or the following, unless otherwise specified on the plans.

203.08.2 General Requirements: Do not entrap unsuitable material defined in 203.04 in the embankment. Remove any such material at no direct pay.

Leave surcharge materials 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. Remove excess surcharge materials after the surcharge period. Verification cross-sections of the final embankment will be taken after removal of the surcharge. Material required due to additional subsidence after cross-sections are taken will be paid under the appropriate item.

After all embankment increments have been surcharged, satisfactorily dispose of excess surcharge material in accordance with 202.02 at no direct pay.

Except for stone embankments, furnish and place a plastic soil blanket complying with 203.10.

203.08.3 Nonplastic Embankment Construction: Construct nonplastic embankments by mechanical methods.

Unless otherwise shown on the plans, place material in lifts not exceeding 15 inches of uncompacted thickness after establishing a working table as directed. Compact each lift and test in accordance with 203.07.

203.08.4 Blended Calcium Sulfate Embankment Construction: Add water or use other suitable means to prevent dust resulting from the transport and placement of dry material. Place blended embankment material in lifts not exceeding 12 inches in thickness (loose) after establishing a working table as directed. Compact each lift to at least 95 percent of maximum dry density prior to placement of subsequent lifts. Determine the maximum density in accordance with DOTD TR 418 modified to include a drying temperature not to exceed 140°F. Perform field density testing in accordance with 203.07. Determine moisture content for density corrections by oven drying the material at 140°F for a minimum of 24 hours. Provide a forced draft type oven capable of maintaining this temperature. Also, furnish and place a plastic soil blanket complying with 203.10.

Do not place blended calcium sulfate within 10 feet of metal drainage structures. The contractor will be allowed to substitute natural stone, flowable fill under Section 710, or other material in 1003.08 as approved by the Department.

203.10 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 Sections 714 or 717. Construct the soil blanket to a minimum thickness of 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, remove lumps, stones, roots and other foreign matter from the area. Spread and roll soil blanket material in a manner that leaves a uniform surface. Ensure that 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.

Place plastic soil blanket in a timely manner to prevent erosion.

203.11 GEOTEXTILE FABRICS.

203.11.1 General: Furnish and place geotextile fabric in accordance with these specifications and in conformance with the details shown on the plans.

203.11.2 Materials: The geotextile fabric shall comply with Section 1019.

203.11.3 Construction Requirements: Keep rolls of geotextile fabric covered and protected from ultraviolet degradation at all times until use. Cover geotextile fabric that has been installed with embankment material within seven calendar days. When ultraviolet damage occurs, remove and replace the geotextile fabric. Place the geotextile fabric at the locations shown on the plans or as directed. Overlap or sew adjacent rolls of geotextile fabric. When rolls are overlapped, overlap a minimum of 18 inches or as specified in the plans, including the ends of the rolls. Place the top layer of the geotextile fabric parallel with adjacent rolls and in the direction of embankment placement. When rolls are sewn, join adjacent rolls by sewing with polyester or kevlar thread. When field sewing, employ the J-seam or "Butterfly" seam with the two pieces of geotextile fabric mated together, turned inwards so as to sew through four layers of fabric. Sew with two rows of Type 401, two-thread chain stitch. Factory seams other than specified shall be submitted to the Materials and Testing Section for approval. Where the ground is covered with water or soil is saturated, sewing of the geotextile fabric will be required.

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

Remove damaged geotextile fabric and replace with new geotextile fabric or cover with a second layer of geotextile fabric extending 2 feet in each direction from the damaged area.

203.12 QUALITY CONTROL. Locate, select, and place material conforming to specification requirements. Control 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. Perform tests for in-place moisture content in accordance with DOTD TR 403, at a frequency that will ensure that the material is within the tolerances of optimum moisture. Perform tests for in-place density 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. 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. Correct obviously deficient areas prior to acceptance testing.

203.13 ACCEPTANCE. The Department will perform inspection, sampling, and testing for acceptance. Correct any area that is deficient whether identified by inspection or testing.

The embankment (with surcharge, if required) will be approved in increments of 1000 feet, except terminal increments which may be less than 1000 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.

203.14 MEASUREMENT.

203.14.1 General: Unless otherwise specified, borrow material in accordance with 203.05, topsoil, and plastic soil for slopes in accordance with 203.06.6 will be considered incidental to the embankment and will not be measured separately, but will be measured as embankment. Removal and stockpiling of existing topsoil will be measured by the in-situ square yard.

Measurement of undercut will be from subgrade or original ground, whichever is lower.

No measurement will be made for excavation for culverts or culvert headwalls.

When the grade line of a pipe or box culvert is raised or lowered more than 2 feet from the grade line shown on the plans or is relocated to a site requiring an equivalent change in excavation, payment will be increased or decreased accordingly at the rate of three times the contract unit price for General Excavation (or Embankment if General Excavation is not a contract pay item). The volume to be used in the increase or decrease will be a rectangular solid the length of the pipe or box culvert, the outside width of the pipe or box culvert plus 3 feet, and the average change in invert elevation minus 2 feet.

203.14.2 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 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. New original cross-sections will be taken after clearing, and prior to grubbing.

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 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:

203.14.2.1 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. Quantity revisions will not be considered without advanced notice to both parties and unless the original cross-sections have been taken.

No payment will be made to the contractor to re-compute new plan quantities.

203.14.2.2 Field Cross-Sections: When payment lines are not shown on the plans and cannot be established, in lieu of final theoretical pay lines, field cross-sections will be used to determine pay quantities for excavation and embankment.

After clearing operations, the contractor shall take original cross-sections for the entire length of the project. Take all original cross-sections in the presence of the Department. Take cross-sections at sufficient intervals to accurately determine earthwork quantities, not to exceed 100 linear feet. Take the cross-sections in accordance with DOTD procedures, and furnish results to the Department immediately 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 shall 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 does 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.

203.14.3 Hydraulic Excavation: After completion of drainage excavation operations at each individual location, measurement will be made in accordance with 203.14.2.1 or 203.14.2.2. Elevations for underwater excavation will be determined in accordance with DOTD TR 426.

Cleaning existing ditches will be measured by the linear foot along the center line of each ditch.

203.14.4 Settlement Plate Installation and Monitoring: Settlement plate installation and monitoring will be measured per each, which includes furnishing, installing, monitoring and removing; and includes all labor, materials, equipment, tools, and incidentals necessary to complete the work.

203.14.5 Excavation and Embankment:

203.14.5.1 Linear Measurement: When excavation or embankment is to be measured on a linear basis, measure the length along the centerline or the baseline used in the plans and include performing the excavation, embankment and grading work necessary for construction of the

project. It is the contractor's responsibility to determine quantities of earthwork necessary to complete this item.

203.14.5.2 Lump Sum Measurement: When excavation and embankment is to be measured by the lump sum, this item includes performing the 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.

203.14.6 Borrow (Vehicular Measurement): The material will be measured by the cubic yard in approved hauling vehicles at the point of delivery in accordance with 109.01.

203.14.7 Geotextile Fabric: Geotextile fabric will be measured by the square yard of covered area in place.

203.15 PAYMENT. Payment for the accepted quantities will be made at the contract unit prices, which includes furnishing the equipment, labor and materials necessary to complete the items.

Payment for roadway obliteration will be made under appropriate roadway removal and excavation items. Removal of existing asphalt pavement asphalt will be paid for under Section 202. Blading and shaping to drain will be considered incidental and will not be measured for pay. Excavation, other than blading and shaping, generally over 1 foot in depth over a substantial area, will be paid as general excavation for the full depth of cut.

Payment for undercut will be as general excavation, and payment for required backfill will be made as embankment.

Plastic soil blanket and topsoil will be included in the pay volume for the embankment. Payment for the removal and stockpiling of existing topsoil will be by the in-situ square yard.

No direct payment will be made for acquisition of borrow materials outside the right-of-way; acquisition of right-of-way and constructing haul roads; stockpiling and re-handling of materials; precautionary measures to protect private property and utilities; or furnishing necessary water and watering equipment.

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.

Payment for cleaning existing ditches will be made at the contract unit price per linear foot, which includes removal of obstructions, furnishing and placing required backfill material, and disposing of removed material.

Payment for settlement plate installation and monitoring will be made at the contract unit price per each. If additional surcharge material is required it will be paid for as embankment. Compensation for extension of the monitoring period may be allowed in accordance with 109.04.

Payment will be made under:

Item No.	Pay Item	Pay Unit
203-01	General Excavation	Cubic Yard
203-02	Drainage Excavation	Cubic Yard
203-03	Embankment	Cubic Yard
203-04	Nonplastic Embankment	Cubic Yard
203-05	Excavation and Embankment	Lump Sum
203-06	Excavation and Embankment	Linear Foot
203-07	Borrow (Vehicular Measurement)	Cubic Yard
203-08	Geotextile Fabric	Square Yard
203-09	Removal and Stockpiling of Existing Topsoil	Square Yard
203-10	Cleaning Existing Ditches	Linear Foot
203-11	Settlement Plate Installation and Monitoring	Each

Section 204
Temporary Erosion Control

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. This work consists of constructing and maintaining temporary erosion control features shown on the plans or as directed. Coordinate installation of temporary erosion control features with construction of permanent erosion control features to the extent necessary to ensure economical, effective and continuous control of erosion and water pollution throughout the life of the contract.

Develop and comply with a Storm Water Pollution Prevention Plan (SWPPP) approved by the Department in accordance with the Department's Notice of Intent (NOI), and retain it at the site of the project for review during inspections. The SWPPP shall include the erosion control features as shown on the plans, or as directed, in addition to other required components of the SWPPP specified by the U. S. Environmental Protection Agency (EPA) and the Louisiana Department of Environmental Quality (LDEQ). The plan shall indicate the use of contract items and the coordination of this work with the scheduling of clearing and earthwork.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course.*

204.01 CONTROL OF ERODIBLE SOIL.

204.01.1 General: Prevent the transmission of soil particles into streams, canals, lakes, reservoirs, or other waterways.

Except as necessary for construction, do not deposit excavated material into streams or impoundments or in a position close enough to be washed into waterways by high water or runoff.

Do not disturb lands or waters outside the limits of construction, except as authorized.

204.01.2 Adjacent to Waterways: Keep stream banks in their natural state. Do not unnecessarily strip protective vegetation in the vicinity of stream banks. Conduct operations without damage to banks. Do not excavate banks except as shown on the plans or as otherwise approved in writing. Work roads requiring bank cuts shall be approved by the project engineer prior to making such cuts. Restore the banks to the satisfaction of the project engineer.

204.01.3 Adjacent to Property: The location of, and method of operation in, borrow pits, material pits, and disposal areas obtained by the contractor for waste material from the project (other than commercially operated sources) shall be the contractor's responsibility.

204.02 MATERIALS. Materials not covered by project specifications shall meet commercial grade standards and shall be approved before being incorporated into the project. Acceptance of temporary erosion control materials will be in accordance with the materials sampling manual.

204.02.1 Mulches: Mulch shall comply with 1004.04.

204.02.2 Seed: Seed shall comply with 1004.03. Grass shall be an approved quick-growing species suitable to the area, providing a temporary cover which will not compete with permanent grasses.

204.02.3 Slope Drains: Slope drains may be constructed of pipe, fiber mats, rubble, portland cement concrete, asphalt concrete, plastic sheets, or other acceptable material.

204.02.4 Fertilizer: Fertilizer shall comply with 1004.01.

204.02.5 Silt Retention Systems:

204.02.5.1 Silt Fences: Silt fencing shall be wire-supported or self-supported systems. Other silt fencing systems may be used when approved. Silt fencing shall comply with 1018.15. Geotextile fabric shall comply with Section 1019.

204.02.5.2 Other Retention Systems: Other silt retention systems may be used if approved by the Materials Engineer Administrator.

204.02.6 Lime: Agricultural lime shall comply with 1004.02.

204.02.7 Temporary Construction Entrance: Temporary construction entrances shall consist of stone or recycled portland cement concrete complying with gradation as required in 711.02, 2 pound class placed on geotextile fabric complying with Section 1019, Class D.

204.02.8 Hay Bales: Hay or straw bales shall be rectangular bales, acceptable to the project engineer. The average length of bales shall be 34 inches minimum.

204.03 EXPOSURE OF ERODIBLE EARTH. The engineer may direct the contractor to provide immediate permanent or temporary erosion or pollution control measures to prevent contamination of streams, lakes, tidal waters, reservoirs, canals or other impoundments or prevent detrimental effects on property outside the right-of-way and damage to the project. Limitations of areas in which excavation and embankment operations are underway shall be commensurate with the contractor's capability and progress in keeping finish grading, temporary erosion control, and

permanent erosion control measures in accordance with the accepted schedule.

204.04 INCORPORATION OF EROSION CONTROL FEATURES. Incorporate permanent erosion control features into the project at the earliest practical time. Use of temporary erosion control features will be authorized to correct unforeseen conditions that develop during construction; to control erosion prior to the time it is practical to construct permanent control features; or to provide immediate temporary control of erosion that develops during normal construction operations but is not associated with permanent erosion control features.

Use temporary erosion control features as directed in areas where stage construction or other conditions not under control of the contractor preclude completion of a section of roadway in a continuous manner, or where subsequent construction operations will cause damage to permanent erosion control features.

204.05 CONSTRUCTION REQUIREMENTS. Temporary erosion control features consist of, but are not limited to, temporary seeding, temporary mulching, sandbagging, slope drains, sediment basins, sediment check dams, erosion checks, artificial coverings, berms, and temporary construction entrances. The engineer may direct use of temporary erosion control features or methods other than those included in the original contract. Remove eroded sediment deposits outside the right-of-way immediately and repair the surface at no direct pay. 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 at no expense to the department. The engineer may direct the contractor to discontinue operations until eroded sediment deposits have been cleared and the area restored.

When erosion control devices have been properly maintained and exceeded their useful life, they may be replaced with approval and paid for under appropriate pay items as directed.

204.05.1 Temporary Seeding: Seed in accordance with Section 717 or 739, except that ground preparation will be limited to blading the area. Apply lime or fertilizer in accordance with Section 718; however, lime or fertilizer may be omitted or the application rate reduced as directed.

204.05.2 Temporary Mulching: Furnish and apply mulch in accordance with Section 716. Mulch may be omitted or the application rate

reduced as directed. When permanent seeding operations begin, disc temporary mulch materials during ground preparation.

204.05.3 Sandbagging: Place sandbags as shown on the plans or as directed.

204.05.4 Baled Straw of Hay: Place baled straw or hay as directed to form checks or dams to control erosion and siltation. Properly stake or secure bales as shown on the plans, or as directed. Bury the bales as necessary to prevent scour under the bales. Drive a minimum of 2 stakes through each bale into the ground to hold in place.

204.05.5 Slope Drains: Construct slope drains in accordance with plan details or as directed, to prevent scour. Stabilize or protect the discharge area with temporary riprap. Cost of discharge area protection will be included under the slope drain item.

204.05.6 Sediment Basins: Construct sediment basins in accordance with plan details or as directed.

204.05.7 Sediment Check Drains: Construct check dams at locations shown on the plans or as directed. Construct check dams before clearing and grubbing or grading in the area is begun unless otherwise directed.

204.05.8 Silt Retention Systems: Furnish and construct silt retention systems at designated locations or other locations, as directed by the engineer. Posts for silt fencing shall be installed to a depth necessary to maintain the integrity of the system.

204.05.9 Berms: Construct earth berms as directed to divert the flow of water from erodible surfaces.

204.05.10 Temporary Construction Entrance: Construct temporary construction entrance(s) in the plans or as directed. Place a geotextile fabric underliner at the locations designated for temporary construction entrances before aggregate material is placed. Place and compact aggregate material to the required thickness as directed. This work also includes additional measures required to remove mud from truck tires, such as wash racks, etc.

204.05.11 Unforeseen Conditions: When unforeseen conditions are encountered, the engineer may direct the contractor to construct such temporary devices as required to control erosion during construction. Details may be developed jointly by the engineer and the contractor.

204.05.12 Maintenance of Erosion Control Features: Inspect temporary erosion control features at least once every 14 calendar days and within 24 hours after a rainfall event of 0.5 inch or greater. Documentation of these inspections must be maintained in the field office and provided to

the Department for review. Repair and maintain temporary erosion control features within seven calendar days after being instructed to do so by the engineer. Maintain the features as described below or replace as directed at no direct pay.

Repair damaged hay bales, “end runs” and undercutting beneath bales.

Remove sediment deposits when the deposits reach one-half the height of check dams. Ensure that the center of the check dam is lower than the edges. Correct erosion around the edges immediately.

Remove sediment deposits before they reach one-half the height of the silt retention systems, or as directed. If the fabric on the silt fence decomposes or becomes ineffective, promptly replace the fabric.

Maintain the construction entrance to allow for removal of mud from tires. Remove the sediment from the wash rack runoff once the wash rack is no longer performing as intended.

204.05.13 Removal of Temporary Erosion Control Features: Remove temporary erosion control features existing at the time of construction of permanent erosion control features or incorporate into the soil in such manner that no detrimental effect will result. The engineer may direct that temporary features be left in place. Remove sediment in sediment basins, silt fences, check dams, and other catchment areas. Reconstruct areas as necessary with acceptable soils in accordance with Section 203 at no direct pay.

204.06 PROTECTION DURING SUSPENSION OF OPERATIONS.

Prior to the suspension of operations, shape the top of the earthwork in such manner as to permit runoff of rainwater and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains in the earth berm to carry runoff. When such preventive measures fail, immediately take other action as necessary to prevent erosion and siltation. The engineer may direct the contractor to perform other erosion control work during suspensions of contract time.

204.07 MEASUREMENT. When separate items for temporary erosion control devices are included in the contract, and the work is directed by the engineer, the quantities to be measured for temporary mulching and temporary seeding will be in accordance with Sections 716 and 717, respectively. Measure sandbagging by volume in cubic yards (cu m) with the measurement of sand being made in a batch box or other satisfactory means. Measure the number of hay bales placed; the length in feet of temporary slope drains measured along the ground surface; and silt fencing

measured along ground surface; the number of sediment basins and sediment check dams; and the number of construction entrances.

When temporary erosion control work is directed and is not covered by contract items, perform the work as extra work in accordance with 109.04.

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 due the contractor for the work. Partial payments will be withheld until satisfactory temporary erosion control is established.

204.08 PAYMENT. Payment for temporary erosion control items that are included as contract items will be made at the contract unit prices. Payment for temporary mulching, and seeding will be made under Sections 716 or 717. Temporary erosion control work not covered by contract items that is ordered will be paid for in accordance with 109.04.

Temporary Sandbagging and Baled Hay will be paid for directly when used other than in construction of Temporary Slope Drains, Temporary Sediment Basins and Temporary Sediment Check Dams. When sandbags or baled hay are used in construction of slope drains, sediment basins and sediment check dams, payment will be made under these items.

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 will be made under:

Item No.	Pay Item	Pay Unit
204-01	Temporary Sandbagging	Cubic Yard
204-02	Temporary Hay Bales	Each
204-03	Temporary Slope Drains	Linear Foot
204-04	Temporary Sediment Basins	Each
204-05	Temporary Sediment Check Dams	Each
204-06	Temporary Silt Retention Systems	Linear Foot
204-07	Temporary Stone Construction Entrance	Each

Section 302
Class II Base Course

302.01 DESCRIPTION. Furnish and place Class II roadway and shoulder base course on a prepared surface in accordance with these specifications, in conformity with the lines, grades, thickness, and typical sections shown on the plans or established. Control the selection, placement, mixing and compaction of materials so that the completed base course is uniform and conforms to plan dimensions and other acceptance requirements.

Quality assurance requirements shall be as specified in the latest edition of the Department's publication titled *Application of Quality Assurance Specifications for Embankment and Base Course.*

When not specified, any of the following types may be used:

1. Soil Cement
2. Crushed Stone
3. Asphalt Concrete Base Course on Embankment Layer
4. Recycled Portland Cement Concrete
5. Blended Calcium Sulfate

Unless approved otherwise in writing, use the same base course material throughout the project in accordance with these specifications.

In areas that are inaccessible for mixing and compacting, in turnouts, crossovers, and in other isolated or irregular areas, portland cement concrete complying with Section 901 or asphalt concrete base course complying with Section 502 may be used in lieu of the specified Class II base course material with approval. If using asphalt or portland cement concrete, the top half of the base course thickness shall be asphalt or portland cement concrete. If used, portland cement concrete shall be a minimum thickness of 6 inches. The remaining thickness shall be the same type and construction as the top layer of embankment, treated layer, or subgrade. Do not place raw, untreated material between a treated layer and the concrete. Place, consolidate, finish, and cure concrete as directed in accordance with Section 706.

Submit a dust control plan to address weather, sight clearance, operational procedures, traffic control, and any other project specific concerns. Failure to maintain sight clearance will result in the engineer stopping contractor operations.

The Department will identify dust sensitive areas in the plans. In these specific areas, the dust control plan must also include environmental requirements. In order to meet air quality standards, the contractor may be required to use central plant mixing of cement treated mixtures in dust

sensitive areas at no direct pay. The contractor may use other types of Class II base course in dust sensitive areas at no direct pay.

302.02 MATERIALS. Materials shall comply with the following sections or subsections and requirements.

Geotextile Fabric	203.11 & 1019
Asphalt Concrete	502
Portland Cement Concrete	901
Portland Cement	1001.01
Blended Hydraulic Cement	1001.02
Asphalt Materials	1002
Stone	1003.01 & 1003.03.1
Recycled Portland Cement Concrete	1003.01 & 1003.03.2
Blended Calcium Sulfate	1003.01 & 1003.03.3
Water	1018.01

302.02.1 Soils for Soil Cement: Soils for soil cement base course shall consist of materials that will stabilize with cement in accordance with DOTD TR 432. Such materials are those soils classified as A-1-a, A-1-b, A-2-4, A-2-6, A-4, and A-6 in accordance with DOTD TR 423. Do not use soil with a Liquid Limit greater than 35, a Plasticity Index (PI) greater than 15, or an organic content greater than 2 percent.

Determine Liquid Limit and Plasticity Index in accordance with DOTD TR 428. Determine organic content in accordance with DOTD TR 413. Do not use soil with over 79 percent sand or 60 percent silt when tested in accordance with DOTD TR 407. Soils may be blended to adjust the percentages of sand or silt to meet specification requirements; however, in-place blending is not allowed. Do not blend or treat soils that do not meet Liquid Limit or PI requirements to reduce Liquid Limit or PI. Do not use topsoil. Obtain the material to be stabilized from outside right-of-way limits except as provided in 106.02.3. The engineer will take samples from the roadway or stockpile in accordance with the Material Sampling Manual. The District Laboratory Engineer will approve materials prior to blending and the final product.

Acceptance of soils with organic contents between 2 to 5 percent may be allowed based on determination of increased cement percentages in accordance with DOTD TR 432 Method B or C, whichever is applicable, using the design compressive strength criteria listed for stabilization.

Maximum cement rate allowed will be 14 percent by volume. Perform the laboratory testing specified above at no expense to the Department. The laboratory used must be approved by the Materials Engineer Administrator.

Take samples in the presence of the engineer in accordance with the Material Sampling Manual. Obtain sufficient material to provide the District laboratory with approximately 200 pounds of the base material to be treated for verification testing. The engineer will take immediate possession of the verification samples. Also provide approximately 10 pounds of the selected cementitious material to the District laboratory. Provide materials for verification testing at no cost to the Department.

Submit all design data used to determine the recommended cement rate to the District Laboratory Engineer for approval. Prior to approval of the design, the District Laboratory will perform verification testing. Verification testing by the District Laboratory will consist of molding, curing and testing a minimum of three specimens in accordance with TR 432, at the percentage of cementitious material and at the optimum moisture determined by the contractor's laboratory. The recommended cement rate will be considered verified if test results indicate that the minimum strength criteria have been met and that the optimum moisture are within 2 percent of that submitted by the contractor. Normal testing time for verification testing may require up to 21 calendar days. Do not begin construction operations until the design is approved.

302.02.2 Portland Cement: Use Type I or II portland cement. The quantity of cement used shall be supported by proof of delivery.

302.02.3 Blended Hydraulic Cement: The cement shall be Type IP. The quantity of cement used shall be supported by proof of delivery.

302.02.4 Asphalt Concrete Base Course: The material requirements for asphalt concrete base course shall be as described in Section 502. The top half of the base thickness shall be asphalt concrete and the remaining thickness shall be the same type and construction as the top layer of embankment, treated layer, or subgrade. Do not place raw, untreated material between a treated layer and the asphalt concrete.

302.02.5 Blended Calcium Sulfate: Take gradation samples in accordance with 1003.03.3 from the dedicated stockpiles at the point of material origin.

302.03 EQUIPMENT. Obtain approval of equipment prior to use. When using in-place mixing, the equipment shall conform to 303.03. When using

central mixing, the equipment shall conform to 301.03.1. Compaction equipment shall conform to 301.03.1.5.

302.04 GENERAL CONSTRUCTION REQUIREMENTS. Place base course material on a subgrade prepared in accordance with Sections 203, 304, 305, 306 as specified. Construct asphalt concrete base course in accordance with Section 502. Do not use blended calcium sulfate in areas needed to facilitate traffic control. Do not place blended calcium sulfate within 10 feet of metal drainage structures. The contractor will be allowed to substitute any untreated Class II base course material listed in 302.01.

Finished lift thickness shall be 9 inches maximum. The Department may allow single lift construction for depths exceeding 9 inches and up to 12 inches based on a rolling pattern that obtains the required density.

Use a Class D geotextile separator fabric if an aggregate base course is to be placed on untreated or lime-treated soils.

302.05 MIXING.

302.05.1 Soil Cement: Combine soil with cement and water by in-place mixing or in a central plant and shape on the subgrade. When in-place mixing is done, spread and mix the cement prior to adding any more water.

A minimum of 70 percent of the pulverized soil, as determined by DOTD TR 431, shall pass the No. 4 sieve after mixing. Determine the optimum moisture of the mixture in accordance with DOTD TR 415 or TR 418. The percentage of moisture in the mixture, by dry weight, shall not vary from the optimum moisture by more than ±2.0 percent at the time of compaction when tested in accordance with DOTD TR 403.

302.05.1.1 In-Place Mixing: Samples to determine optimum moisture and maximum dry density will be taken by the project engineer. Determine maximum dry density in accordance with DOTD TR 415 or TR 418 and in-place density in accordance with DOTD TR 401. After placement of soil and prior to mixing with cement, shape the soil to required section and compact to at least 93.0 percent of maximum dry density at the required grade.

From materials sampled in-place on the project, the engineer will determine the percentage of cement in accordance with DOTD TR 432 prior to mixing. Depending on the type of cement and soil to be used, normal testing time to determine required cement content may require 21 calendar days. Add water as needed to bring the moisture content of the mixture within the tolerance and uniformly mix with the materials. During the

mixing process, add water only through the spray bar of the in-place mixer which is adjusted to provide uniform coverage across the completed width of the roadway for the full depth of the base. Do not allow wet streaks or spots.

The method of cement distribution shall be such that the amount of cement used can be readily determined. Determine the spread rate of cement in accordance with DOTD TR 436.

When the moisture content is not within ±2.0 percent of optimum, discontinue operations and do not resume until the moisture content is controlled within this tolerance. Do not place and pulverize more than one transport until moisture content is within ±2.0 percent of optimum.

302.05.1.2 Central Plant Mixing: Mixing in a central mix plant shall conform to Section 301. When using central plant mixing, a reduction of 1.0 percent in the volume of cement required will be permitted.

302.05.2 Crushed Stone and Recycled Portland Cement Concrete: Do not allow crushed stone or recycled portland cement concrete base courses to segregate during construction. Take gradation samples in accordance with 1003.03 from the dedicated stockpiles at the point of material origin.

302.05.3 Blended Calcium Sulfate: Do not use for crossovers, drives, or in areas needed to facilitate traffic control. In lieu of blended calcium sulfate, substitute any untreated Class II base course material listed in 302.01. Do not place blended calcium sulfate within 10 feet of metal drainage structures. Use approved backfill material in Section 701.

302.06 TRANSPORTING AND PLACING ON SUBGRADE. Use only transportation and spreading methods that do not damage the subgrade. Place and spread sufficient base course material to obtain required width and compacted thickness within the tolerances set forth in 302.12. Do not allow subgrade material to contaminate the base course. Any contamination will require retesting and correction of deficiencies. Do not place, spread, or mix base course material on portland cement concrete or asphalt concrete pavements. Do not allow base course construction operations to damage adjacent pavement surfaces, edges and joints. Add water or use other suitable means to prevent dust during the transporting and placing of materials.

302.07 COMPACTING AND FINISHING.

302.07.1 General: The finished base course shall have a smooth, uniform, closely knit surface, free from ridges, waves, laminations or loose material. Thoroughly roll the surface and finish to grade. The cross-slope shall not vary by more than ±0.003 foot/foot. Density requirement shall be in accordance with 302.12. Do not damage the subgrade layer during compaction operations.

302.07.2 Soil Cement: When using central plant mixing, compact the material and finish in accordance with 301.10, except that the automatic grade machine will not be required. When using in-place mixing, compact the material and finish in accordance with 303.06.

Begin mixing operations within one hour of placement. Complete compaction and finishing operations within three hours after initial mixing of cement with base course materials. Upon expiration of the three-hour period after initial mixing, only intermediate finishing (tight blading) of the base course surface will be allowed. Dispose of excess bladed material. Do not drift bladed material along the base. Use stabilized material in the base course except for that small amount necessary for tight blading. Excessive blading, exceeding 10 percent of the base thickness, to achieve plan depth will not be allowed. Complete operations, including tight blading, within 24 hours of mixing. The finished base course shall have a smooth, uniform, closely-knit surface, free from ridges, waves, laminations, or loose materials. Do not spread cement within 2 hours of sunset, unless otherwise approved by the project engineer.

302.07.3 Crushed Stone and Recycled Portland Cement Concrete: Compact these materials using an approved sheepsfoot-type roller and finish-roll with an approved pneumatic tire roller or a smooth steel wheel roller. Keep the surface uniformly moist during compaction and final finishing.

302.07.4 Asphalt Concrete: Compact and finish asphalt concrete in accordance with Section 502. The soil layer shall be compacted and finished in accordance with the top layer of embankment or subgrade.

302.07.5 Blended Calcium Sulfate: During placement of blended calcium sulfate, the percentage of moisture in the mixture, by dry weight, shall not vary from the optimum moisture by more than ±2.0 percent. After application of water, allow the moisture to reach equilibrium in the base before applying rolling techniques. Roll blended calcium sulfate to the edge of the embankment or subgrade. Compact each layer to at least 95 percent of maximum dry density. Determine optimum moisture and maximum

density in accordance with DOTD TR 418 Method G modified to include a maximum drying temperature of 140°F.

Proof roll by using a load of 25 tons in a 12 to 14 cubic yard tandem dump truck with ten wheels or approved loaded truck determined by the project engineer. Proof rolling shall be a minimum of 5 passes in each direction at the same locations and at a maximum vehicle speed of 3 mph.

Test all blended calcium sulfate base by proof rolling immediately prior to placement of surfacing material, including asphalt binder. Correct any irregularities or soft spots prior to placement of the surfacing material. Any rain event on the project site between the proof rolling and placement of the surfacing will require an additional proof rolling as noted above.

302.08 QUALITY CONTROL OF ROADWAY OPERATIONS. Control the selection, placement, compaction, cement spread, mixing, moisture content, density, thickness, width, surface finish, cross-slope, and grade to produce a completed base course that is uniform and conforms to plan dimensions and other acceptance requirements as provided herein. Control operations to prevent contamination, segregation, soft spots, wet spots, laminations, and other deficiencies. Perform tests necessary to adequately control the work.

302.09 PROTECTION AND CURING.

302.09.1 Soil Cement: Upon completion of intermediate finishing, immediately protect the base course against drying by applying an asphalt curing membrane in accordance with Section 506. Place asphalt curing membrane on the same day as treatment. Maintain complete coverage of the curing membrane from the initial application until the placement of the next course. When allowing traffic, including construction equipment, on the base course, place at least the first lift of surfacing within 30 calendar days unless otherwise directed.

302.09.2 Crushed Stone, Recycled Portland Cement Concrete, Soil Layer Under Asphalt Concrete, and Blended Calcium Sulfate: Cover the base course with asphalt prime coat in accordance with Section 505 as soon as practical to avoid water infiltration due to rainfall. Maintain complete coverage of asphalt prime coat from the initial application until the placement of the next course.

302.10 MAINTENANCE OF BASE COURSE. Protect the base course from damage from public traffic or the contractor's operations and

satisfactorily maintain the base course, including the asphalt curing membrane or prime coat. Repair damaged base course at no direct pay. When requiring patching of the base course, in addition to removing damaged or unsound base course, remove a sufficient width and depth of sound base course to ensure satisfactory placement of patching material. The engineer's approval of the type of patching material will be required before use. Patching or other base course repair shall restore a uniform surface, shall conform to the requirements of the material being used, and shall be completed before paving operations begin. Patch any failures detected during paving.

Do not allow public traffic or construction traffic on the completed base course during the 72-hour curing period. If conditions permit, route both public traffic and construction traffic off the completed base course onto shoulders or other suitable areas during the 72-hour curing period. Traffic may be permitted on the base course during the curing period if conditions warrant and approved by the engineer. When permitting traffic to use the completed base course subsequent to the 72-hour curing period and prior to construction of the surface course, further protect the base by additional applications of asphalt curing membrane or prime coat in accordance with 301.12 at no direct pay.

Prior to surface course construction, correct deficiencies and weak spots, clean the base course surface, repair any damages caused by traffic, and keep the surface true to grade and cross section at no direct pay. Apply and maintain additional asphalt curing membrane or prime coat as directed at no direct pay.

When surfacing with asphalt concrete, place the first lift of surfacing within 30 calendar days.

302.11 WEATHER LIMITATIONS. Do not construct base course when the subgrade or stockpiles are frozen, when raining, when the ambient air temperature is below 35°F, in the case of cement treated bases, or the temperature forecasted by the U.S. Weather Service is to be 25°f or less within the 24-hour period following placement.

302.12 ACCEPTANCE REQUIREMENTS. Soils and aggregates will be sampled for acceptance by the Department in accordance with the Materials Sampling Manual.

For central plant mixing, determine the cement content in accordance with 301.16. For in-place mixing, determine the cement content in

accordance with 302.05. Test the moisture content of the soil cement or cement treated mixtures for conformance to optimum moisture content in accordance with DOTD TR 403.

Test the pulverization of the soil cement or cement treated mixtures in accordance with DOTD TR 431. At least 70 percent shall pass the No. 4 sieve.

Check base course, except asphalt concrete, for acceptance in increments of 1000 linear feet per roadway or 2000 linear feet per shoulder constructed separately. Asphalt concrete acceptance will be in accordance with Section 502.

302.12.1 Density Requirements: Upon completion of compaction operations, determine base course in-place density, except asphalt concrete, in accordance with DOTD TR 401. Determine density requirements for asphalt concrete base course in accordance with Section 502.

The density requirements for Class II base course materials other than asphalt concrete shall be a minimum of 95.0 percent maximum dry density in accordance with DOTD TR 418.

302.12.1.1 Soil Cement and Treated Layer Under Asphalt Concrete: When the density test value for the section falls below 95.0 percent, a payment adjustment will be applied in accordance with Table 302-1 as follows.

Table 302-1
Density Acceptance and Payment Schedule

Density Test Value (percent)	Percent of Contract Unit Price
95.0 & Above	100
94.0 to 94.9	90
93.0 to 93.9	75
Below 93.0	50 or Remove [1]

[1] At the option of the Chief Engineer.

302.12.1.2 Crushed Stone, Recycled Portland Cement Concrete, Blended Calcium Sulfate, and Soil Layer under Asphalt Concrete Base Course: When any test value is less than the required density, continue compaction until obtaining the specified density.

The acceptance requirements for blended calcium sulfate base course shall be the same as stone base course with the following modifications. Upon completion of compaction operations, determine the density in accordance with DOTD TR 401 except that all moisture content

determinations for density calculations shall be conducted by oven drying the material for 24 hours at 140°F. A forced draft type oven capable of maintaining the temperature shall be provided by the contractor for field moisture content determination for density control.

302.12.2 Thickness Requirements: Determine the thickness of the completed base course in accordance with DOTD TR 602.

Do not allow the completed base course to vary from plan thickness in excess of the tolerances in Table 302-2 below. Correct base course thickness deficiencies in excess of these tolerances at no direct pay.

Table 302-2
Base Course Thickness Tolerance

(All Bases Except Asphalt Concrete) Under-Thickness, Inches	(Stabilized & Treated Bases) Over-Thickness, Inches
3/4	1 1/2

When using crushed stone base or recycled concrete base over soil cement base, the individual base layer tolerances shall be in accordance with Table 302-2, and the total base course under-thickness shall not exceed 1 inch.

Any failing area will be isolated for purposes of correction.

Determine asphalt concrete base thickness in accordance with Section 502.

When using central plant mixing, over-thickness may be waived at no direct pay.

302.12.2.1 Soil Cement, and Treated Layer Under Asphalt Concrete: When not permitting grade adjustments, correct under-thickness deficiencies in excess of tolerance by removing and replacing the full depth of base course in deficient areas with one of the following materials:

1. The same type of base course.
2. Asphalt concrete complying with Section 502.
3. Concrete complying with Section 901.

When permitting grade adjustments, correct thickness deficiencies either by furnishing and placing a supplemental layer of asphalt concrete complying with Section 502 for the full width of base course or by removing and replacing deficient base course. When approved, corrections may be

made by re-stabilizing the existing material in accordance with this section, and the cement content may be reduced from design contents with approval of the District Laboratory Engineer.

Thickness of the supplemental layer of asphalt concrete shall be in accordance with Table 302-3 as follows.

Table 302-3
Supplemental Asphalt Concrete Layer Thickness

Under-Thickness, Inch	In-Place Mixing Over-Thickness, Inches	Minimum Thickness of Supplemental Asphalt Concrete, Inch [1]
1 to 1 1/4	1 3/4 to 2	1 1/4
1 1/2 to 1 3/4	2 1/4 to 2 1/2	1 1/2
2 to 2 1/2	2 3/4 to 3	2
Over 2 1/2	Over 3	Remove and Replace [2]

[1] May be included in the subsequent lift.
[2] At the option of the Department after investigation.

When using reconstruction as the method of correction, the above tolerances shall apply.

302.12.2.2 Crushed Stone, Blended Calcium Sulfate, and Recycled Portland Cement Concrete: When allowing grade adjustments, correct under-thickness in excess of 3/4 inch to plan thickness by furnishing, placing, reworking, shaping, and compacting additional base course material as required. When not allowing grade adjustments, remove the material and replace at no direct pay.

302.12.2.3 Asphalt Concrete Base Course: When not allowing grade adjustments, correct under-thickness in excess of the tolerances given in 502.12 to plan thickness by removing and replacing the full depth of base course. When allowing grade adjustments, correct under-thickness in excess of the tolerances given in 502.12 to plan thickness by placing and compacting an 1 1/4-inch thick minimum supplemental layer of asphalt concrete complying with Section 502 at no direct pay.

302.12.3 Width Requirements: Determine the width of the completed base course in accordance with DOTD TR 602. Do not allow roadway base course width to vary from plan width in excess of +6 inches. Do not allow shoulder base course width to vary from plan width in excess of +3 inches. No under-widths are allowed for shoulder or roadway bases. When the base course for both roadway and shoulders are constructed at the same time, the 6-inch tolerance will be applied. Correct base course width

deficiencies in excess of the above tolerances as follows at no expense to the Department:

302.12.3.1 Soil Cement and Asphalt Concrete Base Course:

302.12.3.1.1 Over-Width: Over-widths of asphalt concrete and treated base courses mixed in a central plant may be waived at no additional cost to the Department. When not allowing grade adjustments, remove the full depth and width of base course in areas having over-widths in excess of the foregoing tolerances and replace to the plan width with one of the following materials:

1. The same type of base course.
2. Asphalt concrete complying with Section 502.
3. Concrete complying with Section 901.

In lieu of removing and replacing the over-width areas of base course, at the Department's option, any base course less than 12 inches over-width will be allowed to remain in place at an adjusted payment of 90 percent of the contract unit price for the complete section. Remove over-width in excess of 12 inches and replace as indicated above. When approved, corrections may be made by restabilizing the existing material in accordance with this subsection, and the cement content may be reduced from design contents with approval of the District Laboratory Engineer.

When permitting grade adjustments, correct base course width deficiencies by removing and replacing as specified above, or by furnishing and placing a $1^{1}/_{4}$-inch thick supplemental layer of asphalt concrete complying with Section 502 on the 1000-foot section for the full width of the base course.

302.12.3.1.2 Under-Width: Correct under-widths of base course in excess of the foregoing tolerances to plan width and thickness by furnishing and placing additional materials; however, the width of widening materials shall be not less than 12 inches. When approved, corrections may be made by restabilizing the existing material in accordance with this section, and the cement content may be reduced from design contents with approval of the District Laboratory Engineer. Materials for widening deficient base course may be asphalt concrete complying with Section 502 or concrete complying with Section 901.

302.12.3.2 Crushed Stone, Blended Calcium Sulfate, and Recycled Portland Cement Concrete: Over-widths will be waived at no additional cost to the Department. Correct under-widths in excess of the

foregoing tolerances to plan widths by furnishing, placing, reworking, shaping, and compacting additional base course material as required.

302.12.4 Grade and Cross-Slope: The finished grade shall be within ±1/2 inch of the established grade. Do not allow the cross-slope to vary by more than ±0.003 foot/foot.

302.12.5 Correction Deficiencies: Correct deficiencies in surface finish, cross-slope, grade, contamination, segregation, soft spots, wet spots, laminations, and other deficiencies at no direct pay. Correct deficiencies by removing and replacing or as directed.

302.13 MEASUREMENT. The quantities of Class II base course for payment will be the design volumes or areas specified in the plans and adjustments thereto. Design quantities are based on the horizontal dimensions and compacted thickness of the completed base course shown on the plans. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if plan errors are proven, or if design changes are necessary.

Geotextile fabric used beneath the base course will not be measured for payment.

302.14 PAYMENT. Payment for Class II base course will be made at the contract unit price, adjusted as specified in 302.12 and the following provisions, which includes furnishing and placing required base course materials, portland cement, blended hydraulic cement, water, asphalt curing membrane, and prime coat.

Any payment adjustment in asphalt concrete shall be in accordance with Section 502 and shall apply to the cubic yard total quantity of base course when payment is by cubic yard. For other materials, when making payment adjustments for more than one deficiency, they shall be cumulative.

Payment for geotextile fabric will be included in the contract unit price for base course.

Payment will be made under:

Item No.	Pay Item	Pay Unit
302-01	Class II Base Course	Cubic Yard
302-02	Class II Base Course _____in Thick	Square Yard

Section 502
Asphalt Concrete Mixtures

502.01 DESCRIPTION.

General: The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions.

Furnish and construct asphalt concrete mixtures in accordance with Table 502-6 and in conformance with the lines, grades, thicknesses, and typical sections in the plans. Comply with Section 503, Equipment and Processes and the Application of Quality Assurance Specifications for Asphalt Concrete Mixtures (QA Manual). Use a DOTD-certified laboratory accredited by AMRL, CMEC, or other accreditation agency approved by DOTD.

502.01.1 Lift Description and Mixture Types: The wearing course is defined as the final lift placed. The binder course is defined as the lift placed prior to the final lift as defined in the plans.

When a Section 501 thin lift mix is used in conjunction with construction of 502 mixtures, it is a finish course.

Mainline mixtures include wearing, binder and base courses for travel lane, ramps greater than 300 feet, interstate acceleration/deceleration lanes, turn lanes, and the two center lanes for airports.

Minor mixes include mixture used for bike paths, crossovers, curbs, detour roads, driveways, guardrail widening, islands, joint repair, leveling, medians, parking lots, shoulders, turnouts, ramps less than or equal to 300 feet, patching, widening, miscellaneous handwork, and any other mixture that is not mainline.

502.02 MATERIALS. Comply with applicable Part X subsections listed herein. Sample in accordance with the Materials Sampling Manual and ensure testing in accordance with the procedures listed in Part X and Table 502-1. Keep accurate records, including proof of deliveries of all materials used in asphalt concrete mixtures. Furnish copies of these records to the engineer upon request.

Aggregates	1003.01 & 1003.06
Anti-Strip Additives	1002.02
Asphalt	1002
Crumb Rubber	1002.02.2.
Hydrated Lime	1018.02
Mineral Fiber	1002.02.5

Mineral Filler	1003.06.6
Mix Release Agent	1018.10
Reclaimed Asphalt Pavement (RAP)	1003.01 & 1003.06.5
Warm Mix Additives	1002.02.4

Table 502-1
Test Procedures for Asphalt Concrete

Description	Test Method
Specific Gravity and Density of Compressed Asphalt Mixtures	DOTD TR 304
Theoretical Maximum Specific Gravity, G_{mm}	DOTD TR 327
Asphalt Cement Content, P_b	DOTD TR 323
Mechanical Analysis of Extracted Aggregate	DOTD TR 309
Moisture Content of Loose HMA	DOTD TR 319
Degree of Particle Coating (plant requirement)	DOTD TR 328
Bulk Specific Gravity and Absorption	AASHTO T 84, T 85
Coarse Aggregate Angularity, % Crushed (Double Faced)	DOTD TR 306
Fine Aggregate Angularity	DOTD TR 121
Flat and Elongated Particles	ASTM D 4791
Sand Equivalent	DOTD TR 120
Mixture Conditioning (Aging) of HMA Mixtures	AASHTO R 30
Superpave Volumetric Mix Design	AASHTO M 323
Preparing Gyratory Samples	AASHTO T 312
Asphalt Cement Draindown	ASTM D 6390
Longitudinal Profile Using Automated Profilers	DOTD TR 644
Thickness and Width of Base and Subbase	DOTD TR 602
Loaded Wheel Tester (LWT)	AASHTO T 324
Semicircular Bend Test (SCB)	TR 330

502.02.1 Asphalt Cement: Comply with Table 502-2.

If the asphalt cement does not comply with the requirements of Section 1002, cease mix production until proper asphalt material is supplied.

Table 502-2
Asphalt Cement Usage

Location	Mix Level	Asphalt Grade Required	Substitutions Allowed		
			Lower Grade[1]		Higher Grade
Mainline Wearing & Binder[2,3]	1	PG 70-22m	PG 67-22 (Binder only) with traffic volume < 3500 ADT		PG 82-22rm, and PG 76-22m
Mainline Wearing & Binder [2,3,4]	2 and SMA	PG 76-22m	PG 70-22m with Hydrated Lime	PG 70-22m (Binder Only)	PG 82-22rm
Base	1	PG 67-22	PG 58-28[5]		PG 82-22rm, PG 76-22m, PG 70-22m
Minor Mixes including Leveling[2,3]	ALL	PG 67-22			PG 82-22rm, PG 76-22m, PG 70-22m

[1]Lower grade substitutions are only allowed if LWT rut depths < 6mm for the design level.
[2]For single lift overlay match grade of overlay.
[3] Semicircular bend test (SCB), minimum, Jc=0.5 KJ/m2 required for all substitutions.
[4]Semicircular bend test (SCB), minimum, Jc=0.6 KJ/m2 required for all substitutions.
[5]When 21-30% RAP is used, PG 58-28 is required.

502.02.2 Additives.

502.02.2.1 Anti-Strip (AS): Add anti-strip additive at the minimum rate of 0.6 percent by weight of asphalt cement and thoroughly mix in-line with the virgin asphalt cement at the plant. Increase the anti-strip additive or change to different additive as needed to meet Loaded Wheel Test, LWT, requirements. Discontinue production until satisfactory adjustments are made when the amount of anti-strip additive is not in accordance with the approved JMF.

502.02.2.2 Hydrated Lime: When used, specify rate of hydrated lime additive on the Job Mix Formula. Add hydrated lime additive at a minimum of 1.5 percent and thoroughly mix with aggregates in conformance with 503.05.5 as required to meet LWT requirements.

502.02.2.3 Waste Tire Rubber Additive: When used, crumb rubber may be pre-blended or, with approval by the Materials Laboratory,

may be blended at the plant. The maximum rubber replacement is 10 percent by weight of asphalt.

When blending crumb rubber at the contractor's plant, add crumb rubber to a PG 67-22 material on the Approved Materials List. Add 30 mesh (or finer) crumb rubber as required to meet grade PG 82-22rm. Comply with 1002.02.2

502.02.2.4 Latex Additive: When added at the contractor's plant, blend a minimum of 1.0 percent residual latex by weight of asphalt cement to a PG 67-22 material on the Approved Material List, and in accordance with Section 503. Meet PG 70-22m requirement using pre-qualified asphalt material and latex.

502.02.2.5 Warm Mix Asphalt Additives: When used, add only approved warm mix chemical additives. Foaming is allowed.

502.02.3 Aggregates: Use aggregates from approved sources. Blend aggregates to meet Sections 502 and 1003.

502.02.3.1 Friction Ratings: Friction ratings for aggregates are determined in accordance with 1003.01.2.4. Table 502-3 describes the friction ratings and corresponding usage allowed for the current average daily traffic (ADT) shown on the plans. Friction rating requirements apply to the mainline wearing course only, unless a finish course is applied. If a finish course is applied, then the friction rating requirements do not apply to wearing course.

All binder and base mixes and minor mixes do not have aggregate friction rating requirements.

Table 502-3
Aggregate Friction Rating

Friction Rating	Allowable Usage
I	All mixtures
II	All mixtures
III	All mixtures, except mainline wearing courses with plan Average Daily Traffic (ADT) greater than 7000[1]
IV	All mixtures, except mainline wearing courses[2]

[1] When plan current average daily traffic (ADT) is greater than 7000, blending of Friction Rating III aggregates and Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 30 percent by weight (mass) of the total aggregates shall have a Friction Rating of I, or at least 50 percent by weight (mass) of the total aggregate shall have a Friction Rating of II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

[2] When the average daily traffic (ADT) is less than 2500, blending of Friction Rating IV aggregates with Friction Rating I and/or II aggregates will be allowed for travel lane wearing courses at the following percentages. At least 50 percent by weight (mass) of the total aggregate in the mixture shall have a Friction Rating of I or II. The frictional aggregates used to obtain the required percentages shall not have more than 10 percent passing the No. 8 (2.36 mm) sieve.

502.02.3.2 Reclaimed Asphalt Pavement (RAP): Keep reclaimed asphalt pavement separate from other materials at the plant in such a manner that will allow for Department inspection and acceptance. Keep stockpiles uniform and free of soil, debris, foreign matter and other contaminants. Allowable RAP percentages are defined in Table 502-6. Screen or crush RAP to pass a maximum of 2 inch sieve prior to use. Additional RAP is allowed in all mixes except for Airports and SMA when RAP stockpile is pre-screened on a 1 inch scalping screen.

502.02.3.3 Mineral Filler: When used, comply with the requirements of 1003.06.6.

502.02.3.4 Natural Sand: When used, meet the requirements of Table 502-6 and 1003.06.3.

502.02.3.5 Fibers: When required to prevent draindown, use cellulose or mineral fiber, meeting the requirements of 1002.02.5 When used, add fibers at a rate sufficient to prevent draindown.

502.03 DESIGN OF ASPHALT MIXTURES AND JOB MIX FORMULA (JMF) APPROVAL. Design all asphalt mixtures for optimum asphalt content in compliance with the mix design in accordance with AASHTO M323, AASHTO M325 for SMA, and the requirements of Table 502-6 and Table 1003-14.

At minimum, all design submittals must include the recommended materials proportions, extracted gradation, recommended mix and compaction temperatures, and supporting design data. Submit the recommended JMF electronically through Site Manager Materials (SMM) or other data system as designated by the Department for District Laboratory Engineer acceptance with all supporting design data. No mixture shall be produced until the proposed JMF has been accepted.

Indicate the optimum mixing and compaction temperatures as suggested by the asphalt binder supplier on the JMF. Mix temperatures are recommended by the asphalt supplier as determined by rotational viscosity or other means. Warm Mix Asphalt technology may be used to reduce this temperature and must be noted on the JMF. Warm mix asphalt may be substituted with a minimum production temperature of 275°F.

Once a plant is producing an acceptable JMF, keep JMF production within the specified tolerances. Changes will be reviewed and accepted by the District Laboratory Engineer as necessary.

The engineer may require a new mix design when roadway acceptance requirements are not being met or plant quality data indicates non-compliance.

502.03.1 Mixtures Design Substitutions: Use only Warm Mix Asphalt (WMA) additives that are listed on the Approved Material List.

The 3/4-inch Nominal Maximum Size (NMS) wearing course may be substituted for binder course but not substituted for base course. The 1-inch NMS binder course may be substituted for base course.

The 1/2-inch NMS wearing course may be substituted for incidental paving, Level A. Shoulders may be any mixture type shown in Table 502-4 regardless of design level except that shoulder wearing must be a 1/2-inch or 3/4-inch NMS mixture.

Apply all specification requirements for the substituted mixture with the following exceptions: When wearing course is substituted for binder course, Table 502-3 does not apply. When wearing or binder are substituted for binder or base, the allowable RAP percentage shall meet the intended use specified in Table 502-6.

When a 501 finish course and a 502 wearing course are required on a project, allowable RAP percentage for wearing may meet binder course requirement.

502.04 JOB MIX FORMULA VALIDATION AND APPROVAL.

The Department and contractor will jointly test plant mix to validate each JMF for mainline mixture and accept each JMF whenever a plant begins initial operations for the Department in a specific plant location, or whenever a plant experiences a change in materials or change in source of materials, or when there are significant changes in equipment, such as the introduction of a new crusher, drum mixer, burner, foaming device, etc. Evaluate each JMF at least once every two years. Meet LWT requirements and all applicable requirements of Table 502-6.

For Minor Mixes, validation is not required for mixture designs, but the mixture must meet specification requirements. In order to validate minor mixes, the plant G_{mm} must be determined.

The average of the first five (5) plant G_{mm}s will become the new JMF target.

For all mixes, validation is not required when the asphalt grade has changed or asphalt source has changed, but must meet LWT requirements and all applicable requirements of Table 502-6.

502.04.1 Validation Plant Lot: The validation plant lot ("VP-lot"), is a maximum of 2000 tons of plant produced mix. Divide into 5 equal parts for validation sampling and testing.

502.04.2 Validation: Report the mean, standard deviation, Quality Index and percent within limits (PWL) of the test results in accordance with the QA manual. The JMF is considered conditionally validated if the

following parameters are 71 percent within limits of the JMF and meet the specifications.

1. Theoretical Maximum Specific Gravity (G_{mm}),
2. Percent G_{mm} at $N_{initial,}$
3. Percent passing the No. 8 and No. 200 sieves,
4. Percent Air Voids at $N_{design,}$ and
5. VFA.

The average of all other validation tests shall meet the specifications limits in Table 502-6. The production can continue during conditional validation. The JMF is considered validated with passing LWT results. If the LWT fails twice, cease production and re-design. Upon validation of the JMF, the average of the validated results will become the JMF targets.

502.04.3 Payment for Plant Validation: Payment will be in accordance with 502.15.

The validation mixture is not paid separately, but is considered part of the roadway lot.

502.05 QUALITY CONTROL AND PLANT ACCEPTANCE. All quality control information, plant records, etc. will be considered part of the Department's acceptance decision. Exercise quality control over all materials and their assembly, design, processing, production, hauling, laydown and associated equipment to ensure compliance with Table 502-4 and all other specifications herein. At the end of each production day, notify the District Lab Engineer (DLE) and the DOTD Asphalt District Inspector (ADI) of the next scheduled mix production run and placement.

For plant quality control, a plant lot, or "P-Lot' is defined as 1000 tons of continuously produced mixture from one JMF. Obtain a sample of plant mixture and test the mixture once every 1000 tons using a random sampling approach. Minimum quality control testing for each P-Lot is as follows:

<u>Loose Mix</u>

1. Theoretical Maximum Specific Gravity, G_{mm}
2. % Asphalt Cement Content
3. Gradation
4. % Crushed
5. Temperature, and
6. % Moisture content

Compacted Specimen, N_{design}

1. % G_{mm} at $N_{initial}$
2. % Air Voids, V
3. % VMA
4. % VFA, and
5. % G_{mm} at N_{max} (1 per 5 P-Lots)

Age all loose mix tested for G_{mm} or volumetrics for one hour in accordance with AASHTO R30 prior to testing. Age warm mix for two hours.

Determine the rolling five test results average and standard deviation for aggregate gradation, asphalt content, air voids, and G_{mm}. Take corrective action or cease production when the latest rolling five test results show:

1. Air voids or G_{mm} fall below 71 PWL (based on the lastest rolling five test results); or
2. Average VFA is outside of specification limits; or
3. Gradation for the No. 8 and No. 200 sieve is outside of specification limits; or
4. Asphalt content is ±0.2% the JMF target.

Enter all plant quality control data into the Department's approved data management system. The full range of gradation mix tolerances will be allowed even if they fall outside the control points. The District Laboratory Engineer may require re-validation of the mix when the average of the Quality Control data indicates non-compliance with the specified limits or tolerances.

Measure the moisture content of the cold feed aggregates daily in accordance with DOTD TR 403. The moisture content of the final mixture, measured daily, shall not exceed 0.3 percent by weight (mass) when tested in accordance with DOTD TR 319.

502.06 PLANT INSPECTION AND AUDITS. All Department inspection procedures, including sampling and testing, and the contractor's quality control data form the basis for acceptance of the asphalt. The Department's Certified Asphalt Plant Inspector will randomly visit and inspect asphalt plants, sample and test material, and review documentation to ensure conformance to specification requirements. In particular, the inspector will take a minimum of the following samples which may be tested for verification:

Loose Mix

1. Theoretical Maximum Specific Gravity, $G_{mm,}$
2. % Asphalt Cement Content,
3. Gradation, and
4. % Crushed

Compacted Specimen, N_{design} (Using contractor's equipment)

1. % G_{mm} at $N_{initial,}$
2. % Air Voids, Va,
3. % VMA, and
4. % VFA.

Compacted Specimen, 7.0 ± 0.5% AV (Using contractor's equipment)

1. Loaded Wheel Testing (LWT) as needed.

The inspector will review contractor data and documentation. The inspector will check the plant equipment, lab equipment and plant operations. The inspector will sample asphalt cement working tank and or transport during random plant visits and will obtain random asphalt cement transport samples as requested by the Materials Lab.

Lack of conformance after 5 P-lots to specification requirements may result in increased sampling, reduced pay, removal and replacement of the asphalt mixture, decertification of the technician, and/or decertification of the plant. Correct deficiencies or cease operations.

502.07 ROADWAY OPERATIONS.

502.07.1 Weather Limitations: Apply asphalt concrete mixtures on a dry surface when the ambient temperature is above 50°F for wearing courses and 40°F for base and binder courses. Material in transit, or a maximum of 100 tons in a surge bin or silo used as a surge bin, at the time plant operation is discontinued may be placed. All mixture placed is expected to perform satisfactorily and meet specification requirements. Inclement weather will be sufficient reason to terminate or not begin production.

When base course mixtures are placed in plan thicknesses of 2 3/4 inches or greater, disregard temperature limitations provided all other specification requirements are met. When a wearing course is substituted for a binder course mixture, apply the temperature limitation for binder course.

502.07.2 Surface Preparation: Maintain the surface being covered. Acceptance is required for each surface prior to placement of subsequent surface.

Roadway slope shall be established at the base course level unless otherwise authorized by the engineer. The absolute minimum lift thickness placed shall be 1/4 inch greater than the nominal maximum aggregate size as shown on Table 502-6. Failure to meet minimum thickness is subject to removal.

502.07.2.1 Cleaning: Sweep the surface to be covered clean of dust, dirt, caked clay, caked material, vegetation, and loose material by revolving brooms or other mechanical sweepers supplemented with hand equipment as directed. Remove excess joint filler from the surface by an approved method when mixtures are to be placed on portland cement concrete pavement or previously overlaid portland cement concrete. Remove any existing raised pavement markers prior to asphalt concrete overlay operations. Payment for removal of pavement markings will be in accordance with the applicable item.

Wash the surface with water in addition to brooming when brooming alone does not adequately clean the surface.

When tack coat is exposed to traffic for more than one (1) calendar day, becomes contaminated, or degrades due to inclement weather, reapply the tack coat at the initial recommended rate at no direct pay.

502.07.2.2 Applying Tack Coat:

502.07.2.2.1 Existing Pavement Surfaces: Before constructing each course, apply an approved asphalt tack coat in accordance with Section 504. Protect the tack coat and spot patch as required.

502.07.2.2.2 Raw Aggregate Base Course and Raw Embankment Surfaces: Apply an approved asphalt prime coat to unprimed surfaces, or protect in-place prime coat and spot apply prime coat as required, in accordance with Section 505.

502.07.2.2.3 Cement and Lime Stabilized or Treated Embankment and Base Course Surfaces: Apply an approved asphalt curing membrane when none is in place, or protect the in-place curing membrane and spot apply, as required, with asphalt material in accordance with Section 506.

502.07.2.2.4 Other Surfaces: Cover contact surfaces of curbs, gutters, manholes, edges of longitudinal and transverse joints, and other structures with a uniform coating of an approved asphalt tack coat complying with Section 504 before placing asphalt mixtures.

502.07.3 Joint Construction:

502.07.3.1 Longitudinal Joints: When constructing longitudinal joints, set the screed to allow approximately 2 inches onto the adjacent pass. Use approved 10-foot static straight edge to maintain no greater than 1/8-inch deviation in grade. Make necessary correction in joint before continuing operations. Offset longitudinal joints in one layer over those in the layer below by a minimum of 3 inches; however, keep the top layer joint 6 inches to 9 inches from the centerline of two lane highways. Offset 6 inches to 9 inches from lane lines when the roadway is more than two lanes. Construct the narrow strip first.

502.07.3.2 Transverse Joints: Construct transverse joints by milling or hand forming paper butt joints. Use an approved 10-foot static straightedge to identify the location to be cut back to maintain no greater than a 1/8-inch deviation in grade. Lightly tack the cut face of the previously placed mat before fresh material is placed. Rest the screed on shims that are approximately 25 percent of lift thickness placed on the compacted mat. Provide an adequate crew to form transverse joints. Additionally, meet the transverse joint surface tolerance requirements of Table 502-5. Make necessary corrections to the joint before continuing placement operations.

Offset transverse joints in succeeding lifts by at least 3 feet.

502.08 HAULING, PAVING AND FINISHING. Transport mixtures from the plant and deliver to the paver at a temperature no cooler than 25°F below the lower limit of the approved job mix formula, maintaining a temperature of the WMA mix not cooler than 245°F going through the paver. Send no loads so late in the day that completion of spreading and compaction of the mixture cannot be completed during daylight, unless artificial lighting has been approved and is on site.

Load haul trucks to minimize segregation.

Place each course of asphalt mixture in accordance with the specified lift thickness shown in Table 502-6.

With the engineer's approval, motor patrols may be used to level isolated depressions in the initial layer, provided this construction does not result in unsatisfactory subsequent lifts.

502.08.1 Coordination of Production: Coordinate and manage plant production, transportation of mix and placement operations to achieve a high quality pavement. Provide sufficient hauling vehicles to ensure continuous plant and roadway operations. The engineer will order a halt to operations when sufficient hauling vehicles are not available.

On final wearing course construction under traffic with pavement layers of 2 inches compacted thickness or less, the contractor will be permitted to

pave one travel lane for a full day and the adjacent travel lane the next work day. When the adjacent travel lane is not paved the next work day and the longitudinal joint is exposed to traffic for more than 3 calendar days, and it has been determined that the roadway edge is not true to line and grade as previously constructed, cut back the entire length of exposed longitudinal joint to lift thickness to a vertical edge and heavily tack unless a notch wedge device is used. When pavement layers are greater than 2 inches compacted thickness, place approximately 1/2 of each day's production in one lane and the remainder in the adjacent lane unless an approved notched wedge device is used.

Protect pavement from traffic until it has sufficiently hardened to the extent the surface is not damaged.

502.08.2 Paving Operations: When placing the final two lifts of asphalt concrete on the roadway travel lanes, use a material transfer vehicle (MTV) as described in 503.14. During continuous paving, maintain temperature of the mixture constant. At no time shall there be more than 50°F difference in temperature as measured in 300 linear feet of paving or 25°F across the full paved width. All mixtures shall flow through the paver hopper. Lift into the hopper any mixture dropped in front of the paver or reject such material and cast it aside. Deliver material to the paver at a uniform rate and in an amount within the capacity of paving and compacting equipment. Adjust the paver speed and number of trucks to maintain one truck waiting in addition to the one at the paver in order to maintain continuous paving operations. Maintain a uniform height of material in front of the screed.

Keep the paver steady and in constant alignment during mix transfer. Maintain a level of mix higher than the paver hopper feed slats at all times. Use pavers and operators capable of placing mixtures to required line, grade and surface tolerance without resorting to hand finishing.

Construct longitudinal joints and edges along established lines. Utilize some form of longitudinal control for the paver to follow, preferably a string line. Position and operate the paver to closely follow the established line. Correct irregularities in alignment by trimming or filling directly behind the paver. Check the texture for uniformity after each load of material has been placed. Check the adjustment of screed, feed screws, hopper feed, etc., frequently and adjust as required to assure uniform spreading of the mix to proper line and grade and adequate compaction. When segregation of materials or other deficiencies occur, suspend paving operations until the cause is determined and corrected.

Correct surface irregularities directly behind the paver. Hand placement will be allowed in accordance with 502.08.3 for surface repair, taking care never to cast material over the fresh surface.

Discontinue paving operations when any screed control device malfunctions during binder or wearing course placement operations. When malfunctions occur, limit material through the paver to that which is in transit. Assume responsibility of meeting all specifications and yield requirements, and bear the cost of any overrun during malfunctions. Do not resume paving operations until the malfunction is fixed.

When paving operations are interrupted, remove and replace at no direct pay, mixture that has cooled below the point that it cannot be finished, or compacted to meet specifications. When additional mix is required to increase superelevation in curves, the use of automatic slope control is optional. However, ensure slope by measuring with a slope board. Allow the engineer use of the slope board upon request.

Use the traveling reference plane method of construction for airport runways unless designated otherwise on the plans. Unless the erected string line is required or directed, use the 27-foot (minimum) traveling reference plane method of construction for roadway travel lanes. The requirements of 502.08.2.1, 502.08.2.2, and 502.08.2.3 shall apply for mechanical pavers.

502.08.2.1 Traveling Reference Plane: Obtain approval of the traveling reference plane method before use. After the initial paving strip of each lift is finished and compacted, place adjacent paving strips to the grade of the initial paving strip using the traveling reference plane or shoe device to control grade and a slope control device to control cross slope.

On multilane pavements, the initial paving strip and the sequence of lane construction will be subject to approval.

When both outside edges of the paving strip being placed are flush with previously placed material, do not use the slope control device. A grade sensor is required for each side of the paver.

In superelevated curves, the cross slope shall be changed from that specified for tangents to that specified for superelevation in gradual increments while the paver is in motion so a smooth transition in grade is obtained. This change in cross slope shall be accomplished within the transition distance specified.

This is the minimum acceptable method and the contractor must meet or exceed current surface tolerance specifications.

502.08.2.2 Erected Stringline: Use the erected stringline method in isolated areas as directed by the engineer. This method may be used on the first lift of asphalt when the underlying new or reconstructed

bases do not have grade control requirements. Equip pavers for roadway travel lanes with automatic screed and slope control devices when used with an erected stringline.

An erected stringline shall consist of a piano wire or approved equal stretched between stakes set at no greater than 25-foot intervals. Tension the stringline between supports so that there is less than 1/8 inch variance between supports when the sensor is in place. If required, place the initial paving strip of the first lift constructed using an erected stringline referenced to established grade. When permitted, mixtures required to level isolated depressions may be placed without automatic screed control. Subsequent lifts may be constructed by use of the traveling reference plane, provided surface and grade tolerances are met on the previous lift.

Only one grade sensor and the slope control device are necessary for roadways with a normal crown on tangent alignment. Superelevated curves will require the use of two grade sensors and two erected stringlines to obtain proper grade and slope; however, when the automatic screed control device is equipped with a dial or other device which can be conveniently used to change the cross slope in small increments, superelevated curves may be constructed using this device and one erected stringline.

After the initial paving strip of the first lift is finished and compacted, lay adjacent paving strips using an approved traveling reference plane.

502.08.2.3 Without Automatic Screed Control: When permitted, pavers without automatic screed control may be used for pavement patching, pavement widening, paved drives and turnouts.

502.08.3 Hand Placement: When the use of mechanical finishing equipment is not practical, the mix may be placed and finished by hand to the satisfaction of the engineer. During paving operations, material shall be thoroughly loosened and uniformly distributed. Material that has formed into lumps and does not break down readily will be rejected. Check the surface before rolling and correct irregularities.

502.09 ROLLING AND COMPACTION.

502.09.1 General: After placement, uniformly compact mixture by rolling while still hot, to a density that complies with Table 502-5. If continuous roller operation is discontinued, move rollers to cooler areas of the mat where they will not leave surface indentations. The use of steel wheel rollers in the vibratory mode, which result in excessive crushing of aggregate, will not be permitted.

Utilize experienced operators when rolling the mixture using consistent rolling sequences and uniform methods to achieve specified density and

smoothness. Uniformly overlap preceding passes of individual roller passes to ensure complete coverage of the paving area. Do not tear or crack the mat by varying the roller speed, amplitude, vibration frequency or other roller operation. Operate non-vibrating steel wheel rollers with drive wheels toward the paver. Correct any operation causing displacement, tearing or cracking of the mat.

Prohibit use of equipment, which leaves tracks or indented areas that cannot be corrected in normal operations or fails to produce a satisfactory surface. Stop use of equipment resulting in accumulation of material and subsequent shedding of accumulated material into the mixture or onto the mat.

Keep rollers of steel wheel rollers properly moistened without excess water to prevent adhesion of mixture to rollers.

Maintain adequate heat for pneumatic tire rollers to prevent mix from adhering to tires. Operate the pneumatic tire roller at a contact pressure which will result in a uniform, tightly knit surface. Keep the pneumatic tire roller approximately 6 inches from unsupported edges of the paving strip; however, when an adjacent paving strip is down, overlap the adjacent paving strip approximately 6 inches.

Vibratory rollers may be used provided they do not impair the stability of the pavement structure or underlying layers. Vibratory rollers shall not be used on the first lift of asphalt concrete placed over the asphalt treated drainage blanket. When mix is placed on newly constructed cement or lime stabilized or treated layers, do not use vibratory rollers until base is approved by the engineer and not for at least 5 days after such stabilization or treatment.

It is the responsibility of the contractor to determine the number, size, and type of rollers to sufficiently compact the mixture to the specified density and surface smoothness. Ensure that the rolling equipment is capable of maintaining the pace of the paver and conforms to 503.16.

The surface of mixtures after compaction shall be smooth and true to cross slope and grade within the tolerances specified. Remove mixtures that become loose, broken, contaminated or otherwise defective and replace with fresh hot mixture compacted to conform to the surrounding mixture.

Excessive rippling of the mat surface will not be accepted. Ripples are small bumps in the pavement surface which usually appear in groups in a frequent and regular manner. No more than 12 ripples or peaks will be allowed in any 100-foot section. Rippling indicates a problem with the paving operation or mix that requires immediate corrective action by the

contractor; otherwise cease operations. Correct unacceptable areas at no direct pay.

After rolling, ensure that newly finished pavements have a uniform, tightly knit surface free of cracks, tears, roller marks or other deficiencies. Correct deficiencies at no direct pay and adjust operations to correct the problem. This may require the contractor to adjust the mix or furnish additional or different equipment.

502.09.2 Hand Compaction: Along forms, curbs, headers, walls and at other places inaccessible to rollers, compact the mixture uniformly to the satisfaction of the engineer with approved hand tampers or mechanical tampers, conforming to 503.17.

502.10 ROADWAY LOT SIZES. A roadway lot is determined as mix placed consecutively on the project from a specific JMF.

502.10.1 Mainline Mix Lot Sizes:

The mainline sublot size is 7500 linear lane feet; the mainline lot is five sublots or 37,500 linear lane feet. Any project with less than 37,500 linear lane feet for any mix type is also defined as a lot. The final mainline lot size may be extended one sublot with the approval of the engineer.

502.10.2 Minor Mix:

Minor mix lots will be defined as 1000 tons delivered to the project by mix type. The following types should be kept in separate lots.

502.10.2.2 Minor Lots with Density Requirement: Minor mix lots with density requirements are 1000 tons. These include bike paths, crossovers, detour roads, parking lots, patching, widening, uniform leveling thicker than 1.5 inches, tapers, and shoulders paved independently which are less than 8 feet wide.

502.10.2.3 Minor Lots without Density Requirement: Minor mix lots such as curbs, driveways, guardrail widening, islands, joint repair, spot leveling, medians, turnouts and $\leq$ 4 feet shoulder paved with the mainline do not have density requirements. Make compaction effort to the satisfaction of the engineer. Lots are 1000 tons.

For projects, or separate locations within a project, requiring less than 250 tons, the JMF, materials, and plant and paving operations shall be satisfactory to the engineer. Sampling and testing requirements may be modified by the engineer and the payment adjustment for deviations waived.

502.11 ROADWAY ACCEPTANCE. Acceptance testing for pavement density and dimensional tolerances will be conducted on that portion of the

lot placed on each contract. Acceptance testing for surface tolerance will be conducted upon completion of mainline paving.

Do not place asphalt concrete mixture exhibiting deficiencies such as segregation, contamination, lumps, non-uniform coating, excessive temperature variations, or other deficiencies apparent on visual inspection.

Correct and/or replace at no direct pay any asphalt concrete mix exhibiting deficiencies, such as segregation, contamination, alignment deviations, variations in surface texture and appearance or other deficiencies, apparent on visual inspection. Poor construction practices such as handwork, improper truck exchanges, improper joint construction, or other deficiencies, apparent on visual inspection, will be corrected at no direct pay.

502.11.1 Density: Obtain pavement samples from each sublot within 24 hours after placement. When this falls on a day the contractor is not working, sampling will be done within 3 calendar days. Sample at locations determined by the PE using random number tables shown in DOTD S605.

When the sampling location determined by random sampling falls within areas that are to be replaced or within 18 inches of the unsupported pavement edge, another random sampling location will be used.

Take cores, approximately 6 inches in diameter, with an approved core drill. Furnish samples cut from the completed work. Replace removed pavement with hot or cold mixture and refinished during the work day coring is performed at no additional pay. Sample in the presence of the engineer's representative. Do not use cores less than 1 3/8 inches thick for payment determination. For transport by parties other than DOTD representatives, ensure that the cores are individually wrapped, sealed, signed, and dated by the DOTD inspector or representative using an approved method. Any evidence of tampering with the core will result in the cores being rejected and additional pavement samples being required.

The engineer or his representative will transport cores in approved transport containers. When allowed, the contractor or third party will transport in an approved, locked transport container.

Divide the 7500-linear-lane-foot sublot into three segments of 2500 linear feet each. Obtain one acceptance core from each segment for a total of three cores. Take a verification core randomly from the 7500-linear-foot sublot. Take a resolution core randomly from the 7500-linear-foot sublot. There are five 7500-foot sublots for each 37,500 linear foot lot. For each lot, there are a total of 15 acceptance cores, 5 verification cores and 5 resolution cores.

For project lots between 2500 and 5000 linear feet, take two acceptance cores per sublot. Projects having less than 2500 linear feet will require 3

cores. Sampling for projects with less than 250 tons may be modified by the Project Engineer.

502.11.1.1 Testing of Roadway Cores (Method 1): The District Laboratory will calculate the density of each acceptance roadway core using the G_{mb} of the core and the representative maximum specific gravity, G_{mm}, in accordance with 502.05.

The density requirement for each lot is shown in Table 502-5. Cores will be retained for a period of 10 days after density is reported.

502.11.1.2 Testing of Roadway Cores (Method 2) Contractor's Testing of Roadway Cores in Acceptance Decision: With proven plant production consistency, and when recommended by the District Laboratory Engineer and approved by the Materials Engineer, contractor may request to be allowed to sample and test roadway cores for acceptance at no cost to the Department in lieu of District Laboratory acceptance testing. Density calculations for each acceptance roadway and verification core will utilize the G_{mb} of the core and the representative maximum specific gravity, G_{mm} as determined in accordance with 502.05. Refer to 502.11.1 for core responsibility. The District Laboratory roadway lot verification will be based on a means comparison between the District Laboratory verification average and the contractor acceptance average for each lot. If the means comparison produces a difference, use the resolution cores for pay determination. The Department will send the resolution cores to a certified Independent Assurance (IA) laboratory to determine pay in accordance with 502.11.1.5.

For Method 2: The plant production consistency will be determined as follows: The Department will continuously monitor plant data and roadway data by JMF, by plant, by contractor. Plant data will be monitored in accordance with 502.06. Roadway data will be monitored using statistical methods comparing means and variances (F and t) tests. Continued use of Method 2 is allowed unless the plant or roadway data fail to verify with data set of a minimum of 45 contractor acceptance tests and 15 DOTD verification tests results, and it is determined by the DLE and Independent Assurance team that the contractor's production data meets requirements.

If the F and t test fail an investigation shall be conducted by the IA team. If the contractor data after F and t analysis is performed and is found to be error, DOTD acceptance testing of roadway cores will resume and independent accredited laboratory could be required for plant testing at no cost to the Department until such time as the problem is identified and resolved.

502.11.1.3 "Minor with Density" Requirements: For Method 1: When density is specified in Table 502-5, the roadway inspector will identify core locations to be cut by the contractor. The District Laboratory will test three cores for density every 1000 tons per mix type placed per roadway sampling procedure mentioned above and pay in accordance with Table 502-7. The District Laboratory will calculate the density of each roadway core using the G_{mb} of the core and the representative maximum specific gravity, G_{mm}, in accordance with 502.05. For Method 2: The contractor will perform acceptance test per above method. Table 502-7 is used to compute pay.

502.11.1.4 Minor Mix without Density: This minor mix shall have a neat, uniform appearance and be compacted by methods to the satisfaction of the engineer. Collect one loose mix specimen, from roadway, per project, for G_{mm} verification.

502.11.1.5 Verification: One core will be selected every 7500 linear lane feet and will be evaluated by either Method 1 or Method 2 in accordance with 502.11.1.1.

502.11.1.6 Resolution: One core from each 7500 linear lane feet of placed mix will be chosen at random and will be double sealed, signed by both contractor and Department's certified inspectors in accordance with the Quality Assurance Manual as required or for documentation. The resolution core will be tested at a certified IA laboratory as described in the QA manual.

502.12 SURFACE TOLERANCE EQUIPMENT, QUALITY CONTROL, ACCEPTANCE, MEASUREMENT AND PAYMENT ADJUSTMENT. Measure the top two lifts of the mainline travel lanes with an approved inertial profiler. Maintain record of intermediate measures of smoothness quality as described herein. Final acceptance will be based on the last measurement taken on the final wearing course of the travel lanes. Measurement of the center two lanes will be required for airports. Constantly monitor equipment, materials, and processes to ensure that surface tolerance requirements are met.

502.12.1 Equipment: For longitudinal surface tolerance quality control testing and acceptance testing on mainline wearing and binder courses, furnish and use a DOTD certified inertial profiler. Certified profilers will have a DOTD decal indicating the date of certification and profiler system parameter settings. Measure longitudinal surface profile in inches per mile in accordance with DOTD TR 644 and report as the International Roughness Index (IRI).

Verify the profiler system parameter settings before each run. Demonstrate the daily set up procedure and pre-operation tests in accordance with the manufacturer's procedures and DOTD TR 644. Ensure that a copy of the manufacturer's setup, pre-operation, and general operating procedures for measuring surface tolerance are available at all times during measurement.

For transverse quality control testing and for longitudinal quality control testing for wearing course on bike paths, detour roads, parking lots, and shoulders; furnish and use an approved 10-foot metal static straight-edge and electronic or static level.

Profiler system parameter settings shall be verified before and during each run by the DOTD inspector. For transverse, cross slope and grade testing, furnish a 10-foot metal static straightedge and electronic or static level for Department use.

502.12.2 Longitudinal Smoothness Quality Control: Within 7 calendar days of placement, for mainline wearing and binder courses, run the certified profiler. View the raw data with ProVAL to determine IRI and to view Profilograph Simulation for each wheelpath. Make corrections to operation and/or mixture to ensure that the overall ride and individual bump requirements are met. Correct all individual bumps which are more than 1/4 inch as identified on Profilograph Simulation or when tested with a 10-foot metal static straightedge. Ensure that the following quality requirements are met:

1. Produce IRI which meets the requirements for 100 percent pay in accordance with Table 502-8. Continued surface tolerance penalties are not allowed.

2. Correct all individual bumps which are more than 1/4 inch when tested with a 10-foot metal static straightedge. Utilize the Profilograph Simulation on ProVAL to help identify these bumps.

3. Correct ripples to the satisfaction of the engineer. Report Profilograph Simulation for areas with 12 or more small, regular bumps in a 100-foot section or for any areas in question.

Minor mixes shall comply with Table 502-5. For minor mixes, use the 10-foot metal static straightedge to check for conformance to specifications.

502.12.3 Transverse Smoothness, Cross Slope, and Grade: The Department will test the surface of the binder and wearing courses at selected locations for conformance to the surface tolerance requirements of this subsection and Table 502-5. Make corrections as directed in accordance with 502.12.4.

502.12.3.1 Transverse Smoothness: Areas with surface deviations in excess of specification limits shall be isolated and corrected in accordance with 502.12.4. Control the transverse surface finish.

502.12.3.2 Cross Slope: When the plans require the section to be constructed to a specified cross slope, take measurements at selected locations using a stringline, a slope board, an electronic or static level mounted on a 10-foot metal static straightedge, or other comparable device. Control the cross slope for each lane to comply with the tolerances shown in Table 502-5. Make corrections in accordance with 502.12.4.

502.12.3.3 Grade: When the plans require the pavement to be constructed to a specified profile grade, test for conformance at selected locations, using a stringline or other comparable device. Control grade variations so that the tolerances shown in Table 502-5 are not exceeded. Grade tolerances shall apply to only one longitudinal line, such as the centerline or outside edge of pavement. Make corrections in accordance with 502.12.4.

502.12.4 Correction of Deficient Areas: Correct areas as required in 502.12.2 and those not meeting Table 502-5, and Table 502-8. Correct wearing and binder courses by grinding. In lieu of grinding, the Project Engineer may penalize the contractor $800 per area of small individual bumps, and/or per "Ripple" as defined in 502.12.2.

502.12.4.1 Deficiencies in Mainline Wearing Course: Correct deficiencies in the final wearing course by removing and replacing mixture, or by diamond grinding or other approved device across the lane and applying a light tack coat, or by furnishing and placing a supplemental layer of wearing course mixture at least 1 1/2 inches compacted thickness for the full width of the roadway meeting specification requirements at no direct pay. If the supplemental layer does not meet specification requirements to the satisfaction of the engineer, remove and replace or correct it by other methods approved by the engineer.

For areas that will not be improved by grinding such as minor dips, extreme vertical curves, areas with < 1/4 inch bump as measured with a 10 feet metal static straight edge, the engineer may waive the requirement to grind.

502.12.4.2 Deficiencies in Mainline Binder Courses: Correct deficiencies in binder course: longitudinal, transverse, cross slope, and grade to meet specification requirements at no direct pay. Make corrections before subsequent courses are constructed.

502.12.4.3 Deficiencies in Minor Mixes: Correct deficiencies in minor mixes by diamond grinding or approved method at the project engineer's direction.

502.12.5 Surface Tolerance Acceptance: Measure the top two lifts of the mainline travel lanes with an approved inertial profiler. Final acceptance will be based on the last measurement taken on the final wearing course of the travel lanes. Measurement of the center two lanes will be required for airports.

502.12.5.1 Longitudinal Surface Tolerance Acceptance: Measure surface tolerance at the completion of the project and after all corrections have been made or at an approved portion of the project in accordance with 502.12.2. Measure the mainline wearing course continuously from start to finish in the direction of travel. The measurement shall be performed by the contractor in the presence of a Department representative. The measurement may also be made by the Materials and Testing Section, or by a private company approved by the Department. Report one IRI measurement in inches per mile for the entire project. A stand- alone pay adjustment factor will be determined in accordance with 502.15.

Place a start and stop mark at the beginning and end of each travel lane so that measurements can be rerun by the Department if needed. Interim measurements of a portion may be allowed, with approval of the engineer, as follows:

1. For partial acceptance in accordance with 105.17.1.
2. Due to phasing or sequence of construction, this measurement may result in 100 percent pay or less. However, payment exceeding 100 percent for this section of roadway will only be allowed if the smoothness re-measured at the completion of the project meets the requirements of Table 502-8.
3. For an unavoidable lengthy delay, apply the same payment criteria as No. 2 above.

The mainline longitudinal surface tolerance IRI specification requirements are shown in Table 502-8. Perform profiler testing and submit data to the engineer before starting paving operations. To ensure that the contractor has corrected deficiencies, the Department will spot check for 1/4 inch bumps in accordance with 502.12.2. Although grinding may be waived by the engineer, the measured roughness will still contribute to the total IRI for the project.

A DOTD inspector will be present for the final test run and will immediately receive a copy of the raw data, the ".erd file" and any files with information about the project, the operator, the equipment, the settings, daily

pre-operation results, and a copy of the IRI results via USB flash drive provided by the contractor. In addition to the data transferred by USB storage device, provide to the engineer a paper copy of the IRI report. Acceptance for the project will be in accordance with Tables 502-8, based on the data. The Department may elect to perform and utilize independent ride quality test results for acceptance at any time.

502.12.5.2 Exclusions: The final IRI measurement shall be taken in entirety, without exclusions. The Department will then review the profile report obtained for each lane of the mainline wearing course. In special cases or extenuating circumstances, the engineer may isolate or exclude sections of the profile. These include the following:

1. Bridge ends, and sections that are within 150 feet of bridge ends.
2. Outside wheelpath of curb and gutter sections that require adjustment in order to maintain adequate drainage.
3. Manholes, catch basins, valve and junction boxes.
4. Street intersections or rail road crossings of a different grade.
5. Structures located in the roadway which cause abrupt deviations in the profile.
6. Transitions to and from ramps and turn lanes and sections within 200ft of the limits of the project if the limits begin or end at an intersection.
7. Sections where the project engineer determines that attaining smoothness is beyond the contractor's reasonable control.

Exclusions will not be used to simply isolate sections of road that are in poor condition when the project is let. The roughness in excluded areas will not be included in the total IRI used for payment purposes, but shall meet the requirements of 502.12.2. The quantity of asphalt represented by the length excluded will not receive a pay adjustment for surface tolerance.

502.12.6 Surface Tolerance Measurement: Measure and report the average IRI of each wheel path of each mainline lane in inches per mile and reach mainline lane prorated for the entire project.

The theoretical quantity is computed by using the total length of lanes, the plan thickness, and the plan width, excluding shoulders and minor mixes. Adjust the tons as necessary affected represented for each mainline travel lane.

502.12.7 Payment Adjustment for Surface Tolerance: Apply a percent payment adjustment for the quantity of tons represented in each land of the mainline wearing course. This pay adjustment is in addition to pay adjustments for density as described in 502.15.2. For mainline wearing course, a separate pay adjustment for surface tolerance measured on the mainline wearing course based on Table 502-8 shall apply. Apply the adjustment to the theoretical lane quantity and contract unit price.

502.13 DIMENSIONAL REQUIREMENTS. Ensure that mixtures conform to the following dimensional requirements only. No other acceptance tests will be required for these mixtures. Over-thickness and over-width will be accepted at no direct pay.

502.13.1 Thickness: For mixture specified for payment on cubic yard or square yard basis, thickness of mixtures will be determined by the Department in accordance with DOTD TR 602. Under-thickness shall not exceed 1/4 inch.

Correct area under-thickness in excess of 1/4 inch to plan thickness at no direct pay. Furnishing and placing additional mixture in accordance with 502.12.4.1. Correct excesses of 1/2 inch for category D, Table 502-8. When grade adjustments do not permit placing additional mixture, remove the deficient under-thickness area and replace at no additional pay.

For mixtures specified for payment on a per ton basis, thickness of mixtures will be determined by the plans, Table 502-6, and that agreed to with the Project Engineer. Under thickness shall not exceed 1/2 inch. Removal and replacement of deficient under-thickness area(s) or other approved remediation agreed to by the Project Engineer will be at no direct pay.

502.13.2 Width: The width of completed courses will be determined in accordance with DOTD TR 602. Correct under-widths by furnishing and placing additional mixture to a minimum width of 1 foot and plan thickness at no direct pay.

502.14 MEASUREMENT. Measure asphalt concrete by the ton of 2,000 pounds from printed weights as provided in Section 503. Provide stamped printer tickets with each truckload of material delivered denoting JMF

number and plant tonnage. Material lost, wasted, rejected or applied contrary to specifications will not be measured for payment.

Estimated quantities of asphalt concrete shown on the plans are based on 110 lb/sq yd/inch thickness. The measured quantity of asphalt mixtures will be multiplied by the following adjustment factors to obtain the pay quantity.

Theoretical Maximum Specific Gravity, (G_{mm}) (DOTD TR 327)	Adjustment Factor
2.340 - 2.360	1.02
2.361 - 2.399	1.01
2.400 - 2.540	1.00
2.541 - 2.570	0.99
2.571 - 2.590	0.98

The adjustment factor for mixtures with theoretical maximum specific gravities less than 2.340 or more than 2.590 will be determined by the following formulas:

Theoretical maximum specific gravity less than 2.340:

$$F = \frac{2.400}{S}$$

Theoretical maximum specific gravity more than 2.590:

$$F = \frac{2.540}{S}$$

where,

F = quantity adjustment factor

S = theoretical maximum specific gravity of mixture from approved job mix formula

502.14.1 Volume or Area Measurement: The quantities for payment will be the design quantities specified in the plans and adjustments thereto. Design quantities will be adjusted when the engineer makes changes to adjust the field conditions or when design changes are necessary. Design quantities are based on the horizontal dimensions and compacted thickness of the completed course shown on the plans.

502.15 PAYMENT.

502.15.1 Payment General. Payment for all mixes will be at the contract unit price of asphalt mixture accepted on the roadway. Payment for asphalt concrete will include furnishing all required materials, 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. When the mix does not meet requirements, payment adjustments shall be assessed. Production of mix that is not eligible for 100 percent payment will not be allowed on a continuous basis. When test results demonstrate that payment adjustments are necessary, satisfactory mixture and compaction adjustments shall be made, or production shall be discontinued. All calculations for percent payment adjustments will be rounded to the nearest one (1) percent. Payment for removal of pavement markings will be in accordance with the applicable item. Payment adjustments will be determined in accordance with 502.14 and the QA Manual.

502.15.2 Mainline Mixtures. For all mainline mixtures, adjustments in contract unit price for roadway density as required by Table 502-5 and will be based on PWL using Tables 502-9 and 502-10 for all acceptance cores in the lot. This payment adjustment will be applied to the theoretical mainline lane quantity and contract unit price.

In addition, for mainline wearing course, a separate pay adjustment for surface tolerance based on Table 502-8 shall apply for all travel lanes based on the theoretical mainline lane quantity and contract unit price.

The theoretical quantity is computed by using the plan width, the plan thickness, and the total length of travel lanes, without exclusion areas.

502.15.3 Minor Mixtures.

502.15.3.1 Minor Shoulder Lots, > 4 Feet Wide. Adjustments in contract price for shoulder density will be based on the average density for all cores in the lot and Table 502-5.

502.15.3.2 Minor Lots with Density. Adjustments in contract price will be based on the core density for each lot in accordance with Table 502-7.

502.15.4 Payment for Tack. Tack coat as required in 502.07.2.2 "Applying Tack Coat" will be considered incidental to the 502 item. If the engineer adjusts the application rate of tack coat from that specified by the contract document, payment for the asphalt mixture will be increased or decreased based on the difference in the applied quantity of asphalt emulsion shown on paid invoices (total of charges). The contractor shall provide copies of paid invoices for this determination. Apply 95 percent payment to

the 502 item when the tack coat rates do not meet the application rate as allow by the engineer.

502.15.5 Payment Adjustment for Asphalt Cement. A minimum payment adjustments of 10 percent of the 502 item will apply to mixtures that do not meet specification but are within one grade of the specification. Asphalt that exceeds one lower grade difference in specification will be subject to 50 percent payment reduction or removal at the discretion of the Chief Engineer.

502.15.6 Payment Adjustment for Surface Tolerance.

Payment adjustment will be in accordance with 502.12.7

Apply a percent payment adjustment for quantity of tons represented in each lane of the mainline wearing course. This pay adjustment is in addition to the pay adjustments for density as described in 502.15.2. For mainline wearing course, a separate pay adjustment for surface tolerance measured on the mainline wearing course based on Table 502-8 shall apply. Apply the adjustment to the theoretical lane quantity and contract unit price.

502.15.7 Payment for Erected Stringline. When the use of an erected stringline is not specified, but directed by the engineer, an additional payment of $3500 per contract plus $0.25 per linear foot will be made for mixtures placed by the erected stringline method. When the use of an erected stringline is specified, no additional payment will be made.

Payment will be made under:

Item No.	Pay Item	Pay Unit
502-01	Asphalt Concrete	Ton

Table 502-4
Plant Produced Asphalt Mixture Requirements and Tolerances

	REQUIREMENTS FOR EXTRACTED ASPHALT CEMENT AND AGGREGATE GRADATION					
U.S. (Metric) Sieve % Passing	½ inch SMA	½ inch Nominal	¾ inch Nominal	1 inch Nominal	1.5 inch Nominal	Mix Tolerance[1]
2 inch	—	—	—	—	100	±4
1 1/2 inch	—	—	—	100	90-100	±4
1 inch	—	—	100	90-100	89 Max.	±4
3/4 inch	100	100	90-100	89 Max	—	±4
1/2 inch	90-100	90-100	89 Max	—	—	±4
3/8 inch	75 Max.	89 Max.	—	—	—	±4
No. 4	24-34	—	—	—	—	±4
No. 8	16-28	29-58	26-49	23-45	19-41	±3
No. 16	—	—	—	—	—	±2
No. 30	12-25	—	—	—	—	±2
No. 50	11-22	—	—	—	—	±2
No 100	—	—	—	—	—	±2
No. 200	7-13	4.0-10.0	3.0-8.0	2.0-7.0	1.0-6.0	±0.7
Extracted Asphalt, %	6.0 min.	—	—	—	—	±0.2
Mix Temperature		—	—	—	—	±25°F

[1]Upon validation of the JMF, the validation averages will be used for JMF target values.

Table 502-5

Asphalt Pavement Requirements

Density, Min. % of Theoretical Maximum Specific Gravity, AASHTO T 209 Method C	
Mainline, SMA	93.5
Mainline	92.0
Minor with density ref, 502.10.2.2 “Roadway lot,” patching, and widening > 2.5-feet	90.0

Surface Tolerance Variation	Longitudinal[1] inches	Transverse[2,3] inches	Cross Slope[2,3] inches [%]	Grade[3,4] inches
Mainline Wearing Courses, Category A, B	N/A[5]	1/8	3/8 [0.3]	1/2
Mainline Wearing Courses, Category C	N/A[5]	1/4	1/2 [0.4]	1/2
Mainline Wearing Courses, Category D	1/2	1/2	3/4 [0.6]	3/4
Mainline Binder Courses	1/4	1/2	3/4 [0.6]	3/4
Minor Mixes[6]	3/8	3/8	3/4 [0.6]	3/4
Bike Paths, Detour Roads and Parking Lots	1/2			
Shoulder, Ramps < 300’	1/2			

[1] See 502.12.2.
[2] Based on 10 feet, using 10-foot static straightedge and static or electronic level.
[3] See 502.12.3.
[4] Applicable only when profile grade is specified.
[5] Mainline wearing and binder are measured with inertial profiler, see 502.12.
[6] Except bike paths, detour roads, parking lots, and shoulders.

Table 502-6[1]
Asphalt Concrete General Criteria

Nominal Max., Size Agg.	0.5 inch (12.5 mm)			0.75 inch (19 mm)			1.0 inch (25 mm)				1.5 inch (37.5 mm)	SMA
Type of Mix	Incidental Paving[2,9]	Wearing Course		Wearing Course	Binder Course		Binder Course		Base Course[9]	ATB[8,9]	Base Course[9]	Wearing
Level[3]	A	1	2	2	1	2	1	2	1	1	1	2
Coarse Agg. Angularity, % Crushed, (Double Faced) + No. 4	55	75	95	95	75	95	75	95	75	75	75	98
Fine Agg. Angularity, Min. % - No. 8	40	40	45	45	40	45	40	45	40	40	40	45
Flat and Elongated Particles, % Max. (5:1)	10											
Sand Equivalent, Min. % (Fine Agg.) - No. 4	40	40	45	45	40	45	40	45	40	40	40	NA
Natural Sand - Max. %	NA	15		15			15			25	25	0
Asphalt Binder		Table 502-2, (3% minimum for Asphalt Treated base (ATB), 6% min for SMA)										
Friction Rating[3]		Table 502-3										
RAP, Max. % of Mix[4]	20	15	15	15	20	20	20	20	30	30	30	0
	Compacted Mix Volumetrics [4]											
VMA, Min. %[5]	13.5	13.5	13.5	12.5	12.5	12.5	11.5.	11.5	11.5	n/a	10.5	16.0
Air Voids, %[6]		(2.5-4.5); (no limit for ATB)										
VFA, %[6]		(69-80); no limit for ATB										
$N_{initial}$ 90% max.[7] (Gyrations)	7	7	7	7	7	7	7	7	7	n/a	7	7
N_{design} 96.5±1 % (Gyrations)	55	55	65	65	55	65	55	65	55	30	55	65
N_{max} 98 % max. (Gyrations)	90	90	105	105	90	105	90	105	90	n/a	90	65
LWT, max. rut-design, mm @ # passes, @ 50^{0}C	10 @ 10,000	10 @ 20,000	6 @ 20,000	6 @ 20,000	10 @ 20,000	6 @ 20,000	10 @ 20,000	6 @ 20,000	12 @ 20,000	10 @10,000	12 @ 20,000	6 @ 20,000
Dust/Effective Asphalt Ratio, %		0.6 – 1.6										
SCB, min, Jc, KJ/m2 @ 25^{0}C	All mix design level 1 must meet minimum 0.5 Jc , All mix design level 2 must meet minimum 0.6 Jc.											
Design Lift Thickness, inch[10]	2.0-	1.5–2.0		1.5–2.0	2.0–3.0		2.5–4.0		2.5+	3.0+	4.0+	1.5-2.0

[1]See also Table 1003-1 Asphalt Aggregate Properties.

[2]May be used for airports, bike paths, crossovers, curbs, driveways, guardrail widening, islands, joint repair, leveling, parking lots, shoulders, turnouts, and other incidental items approved by the engineer. (May be used as a standard roadway mix for local governments.)

[3]Mixtures shall meet the friction rating requirements in Table 502-3 for travel lane wearing courses with ADT > 7000,
[4]Maximum 20% RAP will be allowed in all shoulder wearing course mixtures. RAP will not be allowed for airports. Five (5) % additional RAP will be allowed in all mixes except for airports and SMA when RAP stockpile is pre-screened on a 1-inch scalping screen.
[5]Air voids, VMA, VFA, % G_{mm} @ $N_{initial}$, and % G_{mm} @ N_{design} are determined on samples compacted to N_{design}; The parameter of percent G_{mm} @ N_{max} is determined on a sample compacted to N_{max}.
[6]Air voids mix design target is a 3.5%, Mix design minimum VFA is 72.0%; Mix design minimum VFA for PG82-22rm is 75.0% and 71% for 25 mm NMS mixtures
[7]For Level 1 mixtures, $N_{initial}$ shall be 91.0% max. For Level A mixes, $N_{initial}$ shall be 92.0% max.
[8]Asphalt Treated Base (ATB) may be used for patching of base material, for shoulder <3500 ADT and maintenance widening; when used achieve average density of 90% of G_{mm} as measured per minor mix table.
[9]Semicircular Bend Test (SCB) is not required for Level A, Base Course, or ATB mixtures.
[10]Absolute minimum of lift thickness across width equal to 1/2 inch lower than minimum lift thickness.

Table 502-7
Payment Adjustment Schedule for Minor Mixture[1]

Parameter[2]	Percent of Contract Unit Price/Lot		
	100	90	50 or Remove[3]
Average Roadway Density, % G_{mm}	≥ 90.0	89.9 to 88.1	≤ 88.0

[1]See 502.11.1.3.
[2]Of the total number of cores per lot. Determine surface tolerance in accordance with Table 502-9, if required.
[3]At the option of the Chief Engineer.

Table 502-8
Payment Adjustment Schedules for Longitudinal Surface Tolerance, Maximum International Roughness Index, Inches per Mile

Percent of Contract Unit Price[1]		102%	100%	95%	80%	50% or Remove[2]
Category A [5] All Interstates, Three or more lift construction		<45	<65	65-85	86-149	150
Category B [5] Two Lift Overlays over cold plane surface and two lift overlay over improved base.		<55	<75	75-95	96 <149	150
Category C Two lift overlay over existing surface, Single-Lift Overlays with surface prep. Single Lift Overlays Over Cold Planed Surfaces or improved base		<55	<85	85-110	111- 149	150
Category D Single-Lift Overlays Over Unimproved Surfaces[3,4]		N/A	20% Improvement, or less than or equal to 65 for all other pavements	0% - 19% Improvement when initial is greater than 95	IRI Greater than Existing when initial is greater than 110	

[1] Based on total theoretical quantity.
[2] At the option of the Chief Engineer.
[3] A project with an unimproved surface has no surface preparation item.
[4] Contractor shall take IRI measurements before and after construction and shall show a minimum of 20% improvement.
[5] Remove and replace any individual 0.05-mile segment having greater than an average of 150 in/mile. Removal and replacement will be at the direction of the Chief Engineer. This note does not apply to excluded areas.

Table 502-9
Quality Index Values for Estimating Percent Within Limits (PWL)

PWL	n = 3	n = 4	n = 5 - 6	n = 7 - 9	n = 10 - 12	n = 13 – 15
99	1.16	1.47	1.68	1.89	2.04	2.14
98	1.15	1.44	1.61	1.77	1.86	1.93
97	1.15	1.41	1.55	1.67	1.74	1.80
96	1.15	1.38	1.49	1.59	1.64	1.69
95	1.14	1.35	1.45	1.52	1.56	1.59
94	1.13	1.32	1.40	1.46	1.49	1.51
93	1.12	1.29	1.36	1.40	1.43	1.44
92	1.11	1.26	1.31	1.35	1.37	1.38
91	1.10	1.23	1.27	1.30	1.32	1.32
90	1.09	1.20	1.23	1.25	1.26	1.27
89	1.08	1.17	1.20	1.21	1.21	1.22
88	1.07	1.14	1.16	1.17	1.17	1.17
87	1.06	1.11	1.12	1.12	1.13	1.13
86	1.05	1.08	1.08	1.08	1.08	1.08
85	1.03	1.05	1.05	1.05	1.04	1.04
84	1.02	1.02	1.02	1.01	1.00	1.00
83	1.00	0.99	0.98	0.97	0.96	0.96
82	0.98	0.96	0.95	0.94	0.93	0.92
81	0.96	0.93	0.92	0.90	0.89	0.89
80	0.94	0.90	0.88	0.87	0.85	0.85
79	0.92	0.87	0.85	0.83	0.82	0.82
78	0.89	0.84	0.82	0.80	0.79	0.78
77	0.87	0.81	0.79	0.77	0.76	0.75
76	0.84	0.78	0.76	0.74	0.72	0.72
75	0.82	0.75	0.73	0.71	0.69	0.69
74	0.79	0.72	0.70	0.67	0.66	0.66
73	0.77	0.69	0.67	0.64	0.63	0.62
72	0.74	0.66	0.64	0.61	0.60	0.59
71	0.71	0.63	0.60	0.58	0.57	0.56
70	0.68	0.60	0.58	0.55	0.54	0.54
69	0.65	0.57	0.55	0.53	0.51	0.51
68	0.62	0.54	0.52	0.50	0.48	0.48
67	0.59	0.51	0.49	0.47	0.46	0.45
66	0.56	0.48	0.46	0.44	0.43	0.42
65	0.53	0.45	0.43	0.41	0.40	0.40
64	0.49	0.42	0.40	0.38	0.37	0.37
63	0.46	0.39	0.37	0.35	0.35	0.34
62	0.43	0.36	0.34	0.33	0.32	0.31
61	0.39	0.33	0.31	0.30	0.30	0.29
60	0.36	0.30	0.28	0.27	0.26	0.26
59	0.32	0.27	0.25	0.24	0.24	0.23
58	0.29	0.24	0.23	0.21	0.21	0.21
57	0.25	0.21	0.20	0.19	0.18	0.18
56	0.22	0.18	0.17	0.16	0.16	0.15
55	0.18	0.15	0.14	0.13	0.13	0.13
54	0.14	0.12	0.11	0.11	0.10	0.10
53	0.11	0.09	0.08	0.08	0.08	0.08
52	0.07	0.06	0.06	0.05	0.05	0.05
51	0.03	0.03	0.03	0.03	0.03	0.03
50	0.00	0.00	0.00	0.00	0.00	0.00

Note 1: For negative values of Q_u or Q_L. PWL_U or PWL_L is equal to 100 minus the tabular PWL_U or PWL_L.
Note 2: If the value of Q_U or Q_L does not correspond exactly to a value in the table, use the next higher value.

Table 502-10
Payment Adjustment for Mainline Pavement Density (PWL)

	Percent Payment - %									
Estimated PWL	**n = 3**	**n=4**	**n = 5**	**n = 6**	**n = 7**	**n = 8 to 9**	**n = 10 to 12**	**N = 13**	**n =14 to 17**	**n = 18 and greater**
100 to 81	100	100	100	100	100	100	100	100	100	100
80	100	100	100	100	100	100	100	100	100	99
79	100	100	100	100	100	100	100	100	99	98
78	100	100	100	100	100	100	100	99	99	98
77	100	100	100	100	100	100	99	98	98	97
76	100	100	100	100	100	99	99	98	97	96
75	100	100	100	100	100	99	98	97	97	95
74	100	100	100	100	100	98	98	96	96	94
73	100	100	100	100	99	98	97	96	95	93
72	100	100	100	99	99	97	97	95	94	92
71	100	100	100	99	98	97	96	94	93	92
70	100	100	99	98	98	96	96	94	93	91
69	100	100	98	98	97	95	95	93	92	90
68	100	100	98	97	96	94	94	92	91	89
67	100	100	97	96	96	94	94	91	90	88
66	100	99	97	96	95	93	93	90	89	87
65	100	99	96	95	94	92	92	90	88	86
64	99	98	96	94	94	92	91	89	88	85
63	99	98	95	94	93	91	90	88	87	84
62	99	97	95	93	92	90	89	87	86	83
61	98	96	94	92	91	89	89	86	85	82
60	98	95	94	92	91	89	88	85	84	81
59	97	95	93	91	90	88	87	84	83	80
58	97	94	92	90	89	87	86	83	82	79
57	96	93	91	89	88	86	85	82	81	78
56	95	92	90	89	87	85	84	81	80	77
55	95	92	90	88	86	84	83	79	79	76
54	94	91	89	87	85	83	82	78	77	75
53	93	90	88	86	85	82	80	77	76	74
52	92	89	87	85	84	81	79	76	75	72
51	91	88	85	84	83	80	78	74	74	71
50	90	88	84	83	82	79	77	74	73	70
49	90	87	83	82	81	77	76	72	71	69
48	89	86	82	81	80	76	74	71	70	67

47	88	85	81	80	79	75	73	70	68	66
46	87	84	80	79	77	74	72	68	67	64
45	86	83	79	78	76	73	71	67	66	63
44	85	82	78	77	75	71	69	65	64	62
43	85	81	77	76	74	70	68	64	63	60
42	84	80	76	75	73	69	67	63	62	59
41	83	79	75	73	71	68	65	62	60	58
40	82	77	74	72	70	66	64	61	59	57
39	81	76	72	71	69	65	63	59	57	55
38	80	75	71	70	67	63	61	58	56	54
37	79	74	70	68	66	62	60	56	55	52
36	78	73	68	67	65	61	58	55	53	51
35	77	72	67	66	63	60	57	53	52	50
34	76	71	66	65	62	58	55	52	50	
33	75	70	65	63	61	57	54	50		
32	74	69	63	61	60	55	52			
31	73	67	62	60	59	54	51			
30	72	66	61	58	57	52	50			
29	71	65	59	57	56	51				
28	70	64	58	55	54	50				
27	69	62	57	54	53					

Section 503
Asphalt Concrete Equipment and Processes

503.01 DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. This section specifies requirements for the certification of asphalt concrete plants and paving equipment. It includes methods and equipment for handling and storing materials, producing asphalt concrete, and transporting and placing asphalt concrete at the job site. The Department's publication entitled "Application of Quality Assurance Specifications for Asphalt Concrete Mixtures" is hereby made a part of this specification by reference.

503.02 PLANT EQUIPMENT.

503.02.1 General: Provide equipment and processes to proportion aggregates, additives and asphalt cement in accordance with the approved Job Mix Formula (JMF). When the automatic adjustments or other critical control and shutoff devices are not functioning, do not operate the plant. Operate the plant with clean, easily accessible, and accurate thermometers, scales and meters. Immediately repair, replace, or recalibrate equipment when faulty operation is detected.

Provide a system with positive weight control of cold aggregates fed by a belt scale or other device interlocked with the asphalt measuring system to maintain required proportions of combined aggregates and asphalt cement. Heat, dry and mix aggregates with asphalt cement to produce a homogeneous mixture in which all aggregate particles are uniformly coated. Use approved methods to discard the first and last output of the plant after each interruption. Place discarded material in a separate dedicated area.

Digitally display the total quantities and the rates of production of every material used on a DOTD project.

503.02.2 Certification and Calibrations: The Department will certify plants furnishing asphalt mixtures every two years with current Departmental procedures or when any major component is repaired, replaced or upgraded. The plant owner is required to report any major component upgrades to the District Laboratory Engineer. Forward all documentation available upon request by the Department. All plant components and processes are subject at any time to inspection and approval by the District Laboratory Engineer. The plant owner is required every 90 days to have the laboratory gram scales, ignition oven scales, truck platform scales, and weight batchers tested, inspected, and calibrated by a qualified independent

scale service or the Weights and Measures Division, Louisiana Department of Agriculture and Forestry.

Within 10 working days of the 90 days plant scale recalibration, the Certified Asphalt Concrete Plant Technician, in accordance with 503.09, will verify calibration of the plant's cold feed bins, RAP feed bins, weight bridges, asphalt pump, and additives measuring devices to stated DOTD standards. The Certified Asphalt Concrete Plant Technician shall notify the DOTD certifying District Laboratory two days prior to plant calibration.

Provide a plant site laboratory conforming to 722.02 as a part of the plant facilities at no direct pay, except as modified herein. Each plant laboratory shall have a minimum floor space of 400 square feet. Laboratories are to be provided for all Quality Assurance testing. Calibrate, verify and document all laboratory equipment according to the procedures, test methods, and frequency in accordance with the current "LADOTD Laboratory Equipment Manual."

503.03 AGGREGATES.

503.03.1 Stockpiles: Store aggregates at the plant site so that no intermixing, segregation, pooling of water or contamination will occur. Ensure that gradation and other properties of aggregate in stockpiles are combined in proper proportions so that the resulting combined gradation will meet the requirements of the approved JMF.

503.03.2 Cold Feed Bins: Blend and proportion all aggregates in cold feed bins.

Provide cold aggregate bins of sufficient size to store the amount of aggregates required for continuous plant operation. Provide a cold bin feed system capable of uniformly delivering the maximum number of required aggregate sizes in their proper proportion. Extend partitions between bins a minimum of 1 foot above the top of bins sufficient to prevent intermixing of aggregate sizes. Do not use the partition as part of the bin.

Calibrate the cold feed system based on the weight of bin material. Feed material from a bin through the individual orifice and bypass to a container to be weighed, or over the calibrated weigh bridge. Calibrate material from each bin separately. Calibrate with manufacturer's recommended procedures and keep records on file. The calibration process shall be part of the contractor's quality control.

Provide an automatic plant no flow alarm and shutoff to cease operations when any aggregate bin becomes empty or flow is interrupted for 20 seconds. If repeated no flow indications are evident, cease operations until continuous

flow can be maintained. Provide belt scales for conveyor systems and calibrate accordingly.

When more than one cold bin feeder is used, operate each as a separate unit. Integrate the individual controls with a master control for all materials.

503.03.3 Moisture: Make provisions for introducing the latest moisture content of the cold feed aggregates into the belt weighing system, thereby correcting the conversion of wet aggregate weight to dry aggregate weight. Digitally display dry weight of the aggregate flow in appropriate units.

503.03.4 Screens: Provide a static screen system on top of the fine sand cold feed bin system and the RAP bin system, to ensure removal of objectionable material.

When a belt scale is used, provide a vibrating scalping screen between the cold bin system discharge and the belt scale. Size the screens to remove all oversize aggregate and other objectionable material.

503.03.5 Reclaimed Asphalt Pavement (RAP): If RAP is used, provide a separate cold feed system. Include a scalping screen, bin, feeder belt, and weigh bridge which is fully integrated with the cold feed system and asphalt cement supply system. Calibrate this system in accordance with 503.02.2 and 503.03.2. Add RAP to the dryer in a location as recommended by the manufacturer so that it does not expose the material to direct flame.

503.04 ASPHALT CEMENT.

503.04.1 Working Tank: Provide an asphalt cement working tank capable of uniformly heating the material, under positive control, to the required temperature as recommended by the supplier by methods approved by the District Laboratory Engineer. Provide an asphalt circulating system of adequate size to ensure proper and continuous circulation (except while asphalt is being measured). Equip new tanks with paddle-type mixers or agitators which keep the material in motion and minimize prolonged exposure to the heating source. Maintain the proper mixing temperature of the asphalt. Heat and insulate pipelines and fittings. Provide a sampling spigot in each tank and/or the supply line. Place strainers or screens between the working tank and mixing unit to filter undesirable material. Fix a thermometer graduated in 5°F increments and having an accuracy of ±5°F in the asphalt feed line at an approved location near the discharge valve at the mixer unit to indicate the temperature of asphalt from storage.

503.04.2 Measurement: Measure the asphalt cement either by weight or volume. Ensure that all scales and meters are calibrated and

accurate to 0.5 percent. Display by percent the rate of flow of asphalt cement and the total quantity used.

503.04.2.1 Weight Measurement: Provide scales reading to the nearest pound.

503.04.2.2 Volume Measurement: Measure the asphalt cement by volume using a positive displacement pump and record in digital form to the nearest gallon. Periodically check by weight the quantity of asphalt cement delivered. Continuously display in digital form the corrected rate of asphalt cement delivery and the total quantity delivered. Ensure measurement during production is accurate to within 1.0 percent.

503.05 ADDITIVES. When additives are used, digitally display the rate of flow and the total quantity used for each. Provide meters accurate to 0.5 percent.

503.05.1 Anti-Strip: Provide a recirculation anti-strip additive storage tank producing uniform heat with an indicating thermometer at an approved location near the tank discharge point. Place a thermometer graduated in 5°F increments and having an accuracy of ±5°F at an approved point near the anti-stripping tank discharge point before the meter. Disperse anti-strip additive directly into the asphalt feed line at a location between the asphalt control valve and the end of the asphalt discharge line. Ensure that the anti-strip delivery system continuously delivers the proper amount of material and in correct proportion to the asphalt cement. This system must be equipped with a no-flow indicator, which triggers a light or alarm in the control room and an alarm in the plant lab when the anti-strip material is not flowing. If the anti-strip flow is stopped or interrupted for more than 5 minutes, discontinue production until the system is repaired. The equipment shall include a positive displacement accumulating meter which accumulates and displays materials used, and reads to the nearest 0.25 gallon. Additionally, provide a measuring dip stick and a chart correlating tank quantity with the height of anti-strip liquid.

503.05.2 Plant Blending: Equipment required to introduce crumb rubber modifier, latex, or warm mix additives is described herein. Submit a proposed plant equipment diagram to the District Laboratory Engineer for review and forward a copy to the Materials Engineer. Provide written confirmation from the equipment manufacturer that the quantity and type of mixers are appropriate for the proposed materials and flow rates. When modifying asphalt liquid binder at the contractor's plant to meet a new grade of asphalt, provide a Dynamic Shear Rheometer (DSR) for on-site quality control testing.

The District Laboratory Engineer will inspect the plant facilities.

503.05.2.1 In-Line Blending: Provide a sampling spigot in line after the point of mixing and prior to anti-stripping introduction. When modifying the binder with additives, use a totalizing meter to measure the quantity of additive in a similar manner as anti-strip.

503.05.2.2 Single Tank Batch Blending: A single tank system consists of a single blending tank used to blend crumb rubber modifiers. Provide a 20,000-gallon capacity tank or greater, which serves as both a mixing liquid tank and working liquid tank. Continuously mix the liquid and crumb rubber or other additive with paddle type mixers, auger type mixers, or shear mills to properly blend and maintain suspension. Provide a safe and easily accessible sampling spigot.

503.05.2.3 Multiple Tank System: A multiple tank system consists of a blending tank feeding into a working tank used to blend crumb rubber modifiers. The blending tank may be batch or continuous with metered feed controls to accurately maintain proper ratios of crumb rubber or other additive to neat asphalt binder liquid. Properly agitate the mixture in the working tank with paddle type mixers or auger type mixers to maintain suspension of the modified liquid. Provide a safe and easily accessible sampling spigot.

503.05.3 Warm Mix Additives: Provide necessary equipment in accordance with the manufacturer's recommendations and submit a proposed plant equipment diagram to the District Laboratory Engineer for review. Forward a copy to the Materials Engineer.

503.05.3.1 Foaming Using Water Injection: Provide an approved foamed asphalt injection system flow diagram upon request. Provide a control room indicator when using the water injection system.

503.05.3.2 Chemical Additives: Chemical additives are supplied by the liquid supplier, by mixing in the working tank, by in-line blending, or by introducing as an anti-strip. Provide a system that continuously records the quantity of additive used.

503.05.4 Mineral Filler: Proportion mineral filler separately from a bin equipped with an adjustable feed in accordance with Subsection 503.03.2, which can be accurately and conveniently calibrated and be interlocked with the aggregate. The feeder shall accurately proportion the mineral filler and provide a constant flow of material. For continuous drum mixer plants introduce the mineral filler, if used, to the mix at an approved location sufficiently in advance of the addition of the asphalt cement.

503.05.5 Hydrated Lime: When hydrated lime additive is mixed with aggregate on the belt feed, interlock and synchronize the hydrated lime

additive equipment with cold feed controls. Equip the system with an automatic no flow indicator that will automatically shut the plant down when a malfunction causes an improper supply of additive or water. Equip the hydrated lime additive system with the following:

1. A separate bulk storage bin with a vane feeder or other approved feeding system that can be readily calibrated. The system shall provide for easy sampling of additive and verification of the quantity dispensed by weight (mass). Ensure the feeder system continuously records the total amount of additive dispensed.
2. An approved spray bar, capable of spraying the composite aggregate with potable water before the addition of hydrated lime additive, when the moisture content of the composite aggregate falls below 3 percent. Ensure the approved equipment and methods consistently maintain the aggregates in a uniform, surface wet condition.
3. An approved pug mill after the cold feed system and before the belt scale.

Dispense the hydrated lime additive directly into the pug mill and composite aggregate. Uniformly blend the additive with the composited aggregate before exiting the pug mill. Obtain the District Laboratory Engineer's review of the process and equipment used for mixing the lime additive and aggregate. Ensure that no less than the required amount of additive is continuously blended with the aggregate.

503.05.6 Fibers: Use a separate feed system to accurately proportion and uniformly distribute the required quantity of mineral fibers into the mixture. Interlock the proportioning device with the aggregate feed or weigh system to maintain the correct proportions for all rates of production. Control the fiber proportion to within ±10 percent of the amount of fibers required. Equip the system with an automatic no flow indicator that will automatically shut the plant down when a malfunction causes an improper supply of fiber. For drum plants, add the fiber adjacent to the asphalt cement discharge location.

503.06 DRUM. Equip the drum with automatic burner controls that continuously agitate aggregates during heating and drying. Provide equipment capable of heating and drying aggregates to meet specifications in the necessary quantities to supply the mixing unit continuously at its operating capacity and at a specified temperature and acceptable moisture content. Slope the drum and maintain flights in accordance with manufacturer's recommendations.

Produce a uniform blend at the specified production rate, with rapid and complete asphalt coating of aggregate. As a minimum, completely coat 95 percent of the coarse aggregate particles retained on the No. 4 sieve when tested in accordance with DOTD TR 328.

Process the mixture at the temperature specified on the approved JMF and within ±25°F of the optimum mixing temperature at the discharge. Equip the drum with a thermometer or other temperature device to monitor the discharge temperature of the mix. Use temperature recording device or thermometers graduated in maximum 10°F increments with an accuracy of ±5°F and a sensitivity capable of detecting a change of at least 10°F per minute.

503.07 DUST COLLECTION SYSTEM. Return the fines from the dust collection system at a uniform and regulated rate near the asphalt cement discharge.

503.08 STORAGE AND LOADING OF ASPHALT CONCRETE MIXTURES.

503.08.1 Mix Conveyors: Transport the mix directly from plant to the storage silos or surge bin system by means of an enclosed continuous type conveyor system designed to prevent spillage and match the production rate of the plant. Deliver the mixture to the storage silo or surge bin within ±15°F of plant discharge temperature.

503.08.2 Storage Silos and Surge Bins: Use approved storage silos or surge bins for storing asphalt concrete mixtures.

Ensure that the use of storage silos or surge bins conform to the limitations on retention time, type of mixture, heater operation, bin atmosphere, bin level or other characteristics set forth in these specifications and other requirements stated in granting approval of these facilities. Affix an indicator device to each bin, visible to the loading operator, which is activated when material in the bin drops below the top of the sloped portion. Maintain mixtures above this level during production, except when the plant is not in operation.

When the mixture is placed into a silo or bins through a surge device, provide an automatic warning system to audibly warn the operator of a gate malfunction. Ensure silo or bin unloading gates are either clam shell gates operating under gravity feed or other approved gates that will not cause segregation or be detrimental to the mix.

503.08.2.1 Storage Silos: Maintain a uniform mixture temperature without localized heating. Maximum allowable overnight storage time is 18

hours, provided the silo has an oil sealed discharge gate. The Department may approve additional storage time provided test results and other data indicate that the additional storage time is not detrimental to the mix.

503.08.2.2 Surge Bins: Maintain the mixture at a temperature not less than 25°F below the optimum mixing temperature on the JMF. Do not store the mixture over night.

503.08.2.3 Loading and Sampling: Use haul trucks conforming to 503.11.

Provide a sturdy secured metal sampling platform, with protective rails, at least 30 square feet in area, and set at the proper height to easily obtain a sample. Protect the sampling platform from loaded trucks with barrier rail.

Equip the plant with an approved pressurized system capable of spraying a uniform coating of an approved asphalt mix release agent into the haul unit bed prior to loading. Do not use diesel as a mix release agent.

503.09 SCALES AND METERS.

503.09.1 Scales: Provide scales and meters accurate to ±0.5 percent of the indicated load. Design, construct and install scales and meters so that operations do not affect their accuracy. Calibrate in accordance with 503.02.2. Measure all asphalt concrete mixtures by weigh hoppers or truck platform scales to determine weight for pay.

503.09.2 Weigh Hoppers: Provide weigh hoppers to weigh the mixture or individual material components. Provide hoppers that do not leak or cause segregation. Suspend weigh hoppers from calibrated springless dial scales or load cell scales. Equip the weigh hopper with an approved automatic printer system that will print the certified tare weight of the truck, each batch weight, and total weight of mixture loaded into the truck

503.09.3 Platform Scales: Provide truck platform scales of sufficient length to weigh the entire unit transporting the mix. Weigh the truck empty to determine tare weight prior to mixture loading. Equip scales with an approved automatic printer system that will print the tare weight as well as the total weight of the unit and the mix.

503.09.4 Printers: Inform the Department in the event of a breakdown of the printing mechanism. Discontinue operations until the printer is repaired or replaced.

503.10 PAVING EQUIPMENT. The Department will inspect primary roadway equipment, including Material Transfer Vehicle (MTV), asphalt distributors, pavers, and rollers, at the start of each project. .

503.11 HAUL TRUCKS. The Department will certify haul truck and trailers with a maximum of three trailer combinations for legal payload and volume. Comply with load restrictions in accordance with 105.14. Use trucks having tight, clean, and smooth beds. Spray beds daily or as often as directed with an approved asphalt mix release agent.

Provide a canvas or vinyl cover large enough to completely cover the top and extend over the sides of the bed to protect the mixture from the weather or loss of heat. Use sufficient tie-downs to hold the cover.

Discharge the mixture in a continuous manner so the spreader apron of the paver or MTV will not be overloaded. If the truck or paver is causing surface tolerance penalties or excessive bumps, discontinue its use.

Change equipment or operations when size, speed and condition of trucks interfere with orderly paving operations.

Equip haul trucks used for asphalt surface treatments with a mechanism to provide a positive connection to the aggregate spreader.

503.12 ASPHALT MILLING MACHINE. Use an approved self-propelled milling machine or grinder equipment for milling asphalt surfacing. Provide equipment with sufficient power, traction and stability to remove the thickness of asphalt concrete necessary to provide profile grade and cross slope uniformly across the surface. Provide milling equipment capable of controlling grade or cross-slope from an erected stringline, shoe device or approved traveling reference plane that will accurately reflect the average grade of the surface on which it is to be operated and have an automatic system for controlling cross slope at a given rate. The drum shall be round and true with sufficient number of teeth to yield a uniform and fine textured surface. Equip the milling machine with means to control dust created by the cutting action. Provide adequate loading equipment to immediately remove materials cut from the surface and discharge the cuttings into a truck or on the shoulder as specified or directed.

503.13 ASPHALT DISTRIBUTORS. Provide equipment that ensures even distribution of the asphalt or asphalt emulsion across the entire pavement area at the specified rate as measured per ASTM D2995.

503.13.1 Distributors: The asphalt cement distributor shall be capable of maintaining the allowable variation from any specified rate within ±0.02 gallons per square yard. Equip the distributor with a height adjustable spray bar with spray nozzles recommended by the manufacturer. Assure that the end nozzle over the roadway edge provides a sharp line of asphalt material

parallel to the direction of travel. Ensure nozzles remain clean and free from blockage.

Provide means for an accurate and rapid determination of the control and amount of asphalt materials being applied per square yard of surface. Equip the distributor with thermometers to indicate the temperature of the material in the tank. Equip the distributor with a hand-held spray attachment for applying asphalt materials to areas inaccessible with the spray bar.

Within 12 months prior to use, calibrate the asphalt distributor in accordance with ASTM D 2995. Provide the ASTM calibration and furnish the engineer an accurate and satisfactory calibration record prior to beginning the work. The engineer may at any time require verification of calibration accuracy of the asphalt distributor in accordance with ASTM D 2995.

503.14 MATERIAL TRANSFER VEHICLE (MTV). When placing the final two lifts of asphalt concrete on the roadway travel lanes, use a material transfer vehicle (MTV) or lightweight MTV to deliver mixtures from the hauling equipment to the paving equipment, and to minimize thermal and material segregation of the hot mix asphalt concrete.

Ensure that the MTV provides additional mixing of the asphalt concrete mixtures and then deposits the mixture into the paving equipment hopper to reduce segregation and facilitate continuous production. At a minimum, provide an MTV with a high capacity truck unloading system, which will receive mixtures from the hauling equipment; a 20 ton storage bin in the MTV to continuously mix the mixture prior to discharge to a conveyor system; a discharge conveyor, with the ability to swivel, delivering the mixture to a paving equipment hopper while allowing the MTV to operate from an adjacent lane. If the weight of the MTV is determined by the engineer to cause settlement or movement in the base or sub-base, discontinue use. If the problem persists with the use of a lightweight MTV, discontinue use of the MTV. When a malfunction occurs in the MTV during lay-down operations, immediately discontinue plant operations and do not resume until the MTV malfunctions have been remedied. Mixtures in the silo ($\leq$ 100 tons) or materials in transit may be placed.

Due to the weight of the loaded MTV, apply the following restrictions at bridge crossings:

1. Abide by posted weight limits.
2. Prior to crossing a bridge, be as near empty as possible.
3. Do not move across a bridge with any other vehicles being on the bridge.

4. Move on a bridge only within the limits of the travel lanes and do not move on the shoulders of the bridge.

5. Move at a speed no greater than 5 miles per hour when crossing a bridge.

503.14.1 Lightweight MTV: The lightweight MTV has a smaller capacity, is more fuel efficient and may be used in lieu of the MTV. Lightweight MTV's must meet all requirements of the 503.14 MTV and as modified herein. Use a Thermal Profile system in accordance with section 503.14.3 at all times when a lightweight MTV is used in lieu of the MTV. Discontinue use of lightweight MTV when thermal segregation is observed

The requirement of the 20 ton storage hopper is waived for all lightweight MTVs. The approved remixing methods for lightweight MTV's are:

1. Counter rotating augers,
2. Offset gravity transfer conveyor chute, or
3. Twin interlaced augers.

A tracked or high flotation tires are required for the undercarriage of the MTV to facilitate low ground pressure (< 55 psi).

503.14.2 Windrow Paving: Windrow paving is allowed with the use of an MTV and thermal profile system. Equip the MTV with a windrow head attachment capable of removing 95 percent of the mixture off the pavement. Use a thermal profile system meeting 503.14.3.

503.14.3 Thermal Profile System: The thermal Profile System may be used on all projects. The Thermal Profile System is a device capable of continuously recording the temperature of the full width of pavement as the mixture exits the paver with constant record of the GPS location and distance traveled. The thermal profiles system is required when using a lightweight MTV as described in section 503.13.2. The system requirements include the capability to provide the engineer with the thermal profile of every roadway sublot and roadway lot.

Mount the system with a recording device to the back of the paver. Provide capability of instant review of data on project site at any time keeping permanent record of all temperature and location data daily.

503.15 PAVERS. Use pavers with an automatic grade control device (dual grade may be required) and slope control devices for use with an approved traveling reference plane or erected stringline, as directed.

Use pavers capable of placing mixtures within specified tolerances. Use a screed or strike-off assembly to distribute the mixture over the entire

paving strip. The width of the paving strip must be acceptable to the engineer. Use screed, including screed extensions, to place mixtures that are uniform in appearance and quality. Adjust the screed assembly to provide the required cross section. Equip the screed (including screed extensions) with a heater and a vibrator.

Use a paver insert hopper, in conjunction with the MTV, with a minimum capacity of 5 tons (5 mg).

Equip pavers with hoppers adequately designed and maintained to prevent spillage. Equip pavers with augers to place the mix evenly in front of the screed, including extensions. Equip pavers with a quick and efficient steering device capable of traveling both forward and in reverse. Provide pavers capable of spreading mixes to required thickness without segregation or tearing.

For shoulder construction or other incidental applications, use modified pavers or widening machines when permitted.

Use auger assembly extensions when screed extensions in excess of 2 feet on a side are to be continuously used in the pavement operation. Extend such auger extensions to within 2 feet of the end of the screed. With approval, the use of an auger extension with screed extensions in excess of 2 feet on one side may be waived for transitions, taper sections and similar short sections.

Do not use a strike-off assembly or boxed extension for paving within the traveled way, except when approved for short irregular sections or non-typical sections.

Ensure that the vibratory screed crowns the pavement with adjustable extensions to accommodate the desired pavement profile.

503.15.1 Spray Paver: Spray pavers are designed to distribute the tack coat immediately before placing the asphalt mixture. Comply with 503.13.1 and ensure that spray pavers evenly distribute the tack coat and apply and level thin asphalt concrete concurrently at a rate of 30 to 92 feet per minute. Do not allow a wheel or other part of the paving machine to come in contact with the tack coat before the hot mix asphalt concrete wearing course is applied. Equip the spray paver to include a receiving hopper, feed system, insulated storage chamber for the tack coat, spray bar, tanks with calibrated load cells, and a variable width heated screed unit.

503.16 COMPACTION EQUIPMENT.

503.16.1 General: Provide self-propelled compaction equipment capable of reversing without backlash. Establish a rolling pattern and provide the number, type and size of rollers sufficient to compact the mixture

to the specified density and surface smoothness.

503.16.2 Steel Wheel Rollers: Use either vibratory or non-vibratory steel wheel rollers. Equip the roller with wheels that are true to round and equipped with suitable scrapers and watering devices. Design vibratory rollers for asphalt concrete compaction having separate controls for frequency, amplitude and propulsion.

503.16.3 Pneumatic Tire Rollers: Use treadless tires that are the same size and ply rating, and inflated to a uniform pressure not varying more than ±5 psi between tires. Equip tires with scrapers to prevent adhesion of mixture. The engineer may require additional cleaning and water apparatus on tires if material adhesion is detrimental to the mat.

503.16.4 Equipment for Asphalt Surface Treatments (AST).

503.16.4.1 Pneumatic Tire Rollers for AST: Use a minimum of two self-propelled rollers, weighing at least 12 tons each. Tires shall be smooth tread, of the same size and ply rating. Inflate to a minimum uniform tire pressure of 60 psi, unless damage occurs. The engineer may require a reduction in roller pressure to prevent damage to the aggregate or underlying base course. Wheels shall not wobble and shall be aligned so that the gaps between tires on one axle are covered by tires of the other axle.

503.16.4.2 Power Broom or Blower for AST: Use a power revolving broom or power blower to clean the surface of dust, dirt, mud, and loose or excess material.

503.16.4.3 Aggregate Spreader for AST: Use a self-propelled, pneumatic tire power spreader designed, equipped, and operated to spread aggregate uniformly at the designated rate within the limits of the desired roadway width. The aggregate spreader shall be capable of maintaining an allowable variation from the specified rate within ±0.5 pounds per square yard or ±0.25 pounds per square yard for expanded clay.

Calibrate the aggregate spreader in accordance with ASTM D 5624.

503.16.4.4 Vacuum-Sweeper for AST: Provide a vacuum-sweeper when there is a dusting problem, as determined by the project engineer.

503.17 MISCELLANEOUS EQUIPMENT AND HAND TOOLS. Provide power revolving brooms or power blowers that are maintained and in satisfactory working condition.

In areas that are inaccessible to conventional rollers, use satisfactory mechanical compaction equipment, or hot hand tampers. Tamping tools may be used for compacting edges.

Section 504
Asphalt Tack Coat

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Prepare and treat existing asphalt or portland cement concrete pavement surfaces with asphalt material in accordance with these specifications and in conformity with the lines and grades shown on the plans or established.

504.01 ASPHALT MATERIALS. Use an undiluted asphalt emulsion Grade NTSS-1HM, CRS-2P, CSS-1H, SS-1H, SS-1L or PET as required by Sections 501, 502, and 507 and as listed on the Approved Materials List and comply with Section 1002.

504.02 WEATHER LIMITATIONS. Do not apply asphalt tack coat on a wet surface or when the ambient air temperature is below 40°F. For full depth patching, do not place asphalt tack coat when ambient air temperature is below 35°F.

504.03 EQUIPMENT. Provide equipment for applying asphalt material and prepare the surface to be tacked. Apply with equipment conforming to 503.13.1 and 503.15.1. A hand-held pressure nozzle may be used for tack coat application in lieu of the spray bar/tachometer combination for irregular sections or short sections of 1500 feet or less.

504.04 SURFACE PREPARATION. Clean the pavement surface by sweeping or other approved methods. Satisfactorily clean edges of existing pavements that will form joints with new pavement before tack coat is applied.

504.05 APPLICATION. Uniformly apply asphalt tack coat to a clean dry surface with no bare areas, streaks or puddles with an asphalt distributor at a rate in accordance with Table 504-1. If bleeding , ponding, or slipping are evident, these rates may be reduced to a minimum of 0.04 gallon/square yard with a minimum 0.02 gal/sq yd residual with approval of the engineer.

Table 504-1
Section 502 Asphalt Tack Coats

Surface Type	Rate[1]; Gal/Sq yd
Existing Surface Treatment[2]	0.12
New Hot Mix	0.06
Existing Hot Mix	0.09
Portland Cement Concrete	0.09
Cold Planed/Milled	0.08

[1]Rates are minimum rates of undiluted asphalt emulsion.
[2]Section 507 Asphalt Surface Treatment Type E Interlayer does not require a tack coat.

The minimum application temperature of the emulsified asphalt Grades NTSS-1HM, CRS-2P and Polymer Emulsion Tack (PET) is 160°F and Grades CSS-1H and SS-1H, is 70°F, or as recommended by the manufacturer.

Apply tack coat in such manner as to cause the least inconvenience to traffic. Traffic is not permitted on tacked surfaces prior to application of the mixture placement. The contractor will be permitted to apply the tack coat one calendar day prior to the mixture laydown for non-traffic areas. However, when tack coat has been damaged or contaminated by dirt, dust or mud, clean the surface and retack prior to the mixture laydown at no direct pay. Retack previously tacked surfaces exposed to damage or due to inclement weather at no direct pay.

504.06 MEASUREMENT. Asphalt tack coat will not be measured for payment and is considered incidental to the 501 item; however it will be measured by the gallon in-place using a calibrated stick and/or charts on level ground at the application temperature described in 504.06 for specification compliance.

504.07 PAYMENT. Payment of asphalt tack coat will be specified in 501.11, and 502.15.4 subject to the payment adjustment provisions of Section 1002 for specification deviations of the asphalt materials. The Materials and Testing Section will provide the payment adjustment percentage for specification deviations of the asphaltic materials.

Section 505
Asphalt Prime Coat

DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. An asphalt prime coat is used to seal newly constructed unbound and/or un-stabilized base courses. Prepare and treat a surface with asphalt material in conformance with these specifications and in conformity with lines shown on the plans or established.

505.01 ASPHALT MATERIALS. Prime coat shall be cutback asphalt Grade MC-30, MC-70, or AEP Emulsified Asphalt complying with Section 1002.

505.02 WEATHER LIMITATIONS. Do not apply MC-30 and MC-70 materials on a wet surface. Do not apply asphalt prime coat when ambient air temperature is less than 35°F in the shade.

505.03 EQUIPMENT. Provide the necessary equipment for proper construction of the work. Apply with equipment conforming to 503.13.1. A hand-held pressure nozzle may be used for prime coat application in lieu of the spray bar/tachometer combination for irregular sections or short sections of 1500 feet or less.

505.04 SURFACE PREPARATION. Shape the surface to be coated to required grade and section. Assure that the surface is free from ruts, corrugations, segregated material or other irregularities, and compact to required density. Delays in priming may necessitate reprocessing or reshaping to provide a smooth, compacted surface.

505.05 APPLICATION. Extend prime coat 6 inches beyond the width of surfacing shown on the plans. Do not apply the prime coat until the surface has been satisfactorily prepared.

Apply prime coat at the rates and temperatures shown in Table 505-1.

Table 505-1 Prime Coats

Asphalt Grade	Application Rate Gal/Sq Yd		Application Temperature °F	
	Min.	Max.	Min.	Max
MC-30	0.25	0.30	60	120
MC-70	0.25	0.30	100	180
AEP	0.25	0.30	60	120

505.06 PROTECTION. After prime coat has been applied, cure for a minimum of 24 hours before placing the mixture. Keep traffic off the surface until the prime coat has properly cured, unless otherwise permitted by the engineer.

If traffic is permitted, spread approved granular material, as directed by the engineer, over the prime coat at no direct pay.

Maintain the prime coat intact. When required, thoroughly clean the primed surface prior to the placement of mixture.

Where the prime coat has failed, clean the failed area and reapply prime coat to the unbound surface at no direct pay. When the prime coat is generally unsatisfactory, reapply prime coat to the unsatisfactory surface at no direct pay.

505.07 MEASUREMENT AND PAYMENT. Asphalt prime coat will not be measured for payment; however, payment under the contract will be subject to the payment adjustment provisions of Section 1002 for specification deviations of the asphalt materials. The Materials and Testing Section will provide the payment adjustment percentage for asphalt materials. Payment for surface preparation will be made under other items.

Section 509
Milling Asphalt Pavement

509.01 DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Remove asphalt concrete surfacing by milling in accordance with these specifications and in conformity with the average depth, width, grade, cross-slope and typical sections shown on the plans or as established.

509.02 EQUIPMENT. Use an approved self-propelled milling machine or grinder for milling asphalt surfacing in accordance with 503.12.

509.03 CONSTRUCTION REQUIREMENTS. Pavement surfaces resulting from milling operations shall be of uniform texture, grade and cross slope and free from loose material. Re-mill surfaces not meeting these requirements at no direct pay. Uneven, undulating surfaces will not be accepted. If ridges are excessive, the engineer may require additional milling, replacement of milling machine teeth, or other corrective action. Limit the maximum depth of milling to 2 inches per day when traffic is being maintained. Maintain a maximum 2-inch depth at milling edge of embankment at all times.

Use a minimum length 25-foot traveling reference plane on the first pass of the milling machine. A shoe device may be used on adjacent passes.

When the entire roadway width has not been planed to a flush surface by the end of a work period, resulting in a vertical or near vertical longitudinal face exceeding 2 inches in height, slope this longitudinal face as directed. Place smooth transitions at transverse joints prior to restoring to traffic by milling or by using an asphalt concrete mix. Do not use RAP. Transitions shall be a minimum length of one linear foot per 1/4 inch of the milled depth. Make provisions at drives and turnouts to maintain local traffic.

Remove asphalt concrete next to structures or in small irregular areas that cannot be removed by the milling machine by other acceptable methods.

Provide drainage of milled areas where needed by cutting through the shoulder to the ditch on the same day that adjacent milling is performed.

The milling operation shall not precede the subsequent paving operation or a shoulder stabilization operation by more than 15 calendar days. If shoulder stabilization has been performed, the paving operation shall commence 7 calendar days after the completion of the shoulder stabilization operation. Delay in starting the paving operations that causes a further

degradation in the milled surface shall be corrected by the contractor by additional milling or providing leveling at no additional pay.

Severe raveling or degradation of the milled surface that occurs shall be reported to the engineer in writing with station locations identified. The engineer will direct corrective action.

Place temporary pavement markings prior to opening the roadway to traffic in accordance with Section 713.

Haul all reclaimed asphalt pavement (RAP) material to be retained by the Department for its recycling program, or by other government entities to the storage facility indicated on the plans and stockpile as directed. The contractor may also be required to retain a specified percentage or quantity of the RAP generated by the project.

Make required joint repairs prior to milling. Complete pavement patching before milling, unless additional areas requiring patching are exposed by the milling. Perform pavement patching and joint repair in accordance with Section 510. The initial face of a butt joint can match the radius of the cold planing milling drum. No true vertical face is required.

509.04 MEASUREMENT. The Department will measure milling by the square yard of asphalt concrete surfacing satisfactorily removed. No additional measurement will be made for multiple passes required to achieve total milling depth shown on the plans. Measurement of contractor retained RAP will be by the cubic yard, theoretical in-place plan quantity, and will be credited to the Department by treating it as a negative quantity in the Schedule of Pay Items.

509.05 PAYMENT. Payment for milling of asphalt pavement will be made at the contract unit price per square yard, which includes the costs for removing, hauling and stockpiling of RAP material. The value of the RAP material retained by the contractor will be credited to the Department at the contract unit price for the retained material.

Drainage cuts placed through the shoulders, drop off transitions and transitions at transverse joints will be at no additional pay.

Payment for temporary pavement markings will be included under appropriate pay items.

Payment will be made under:

Item No.	Pay Item	Pay Unit
509-01	Milling Asphalt Pavement	Square Yard
509-02	Contractor Retained Reclaimed Asphalt Pavement	Cubic Yard

Section 704
Guardrail

704.01 DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Furnish and construct highway guardrail in accordance with these specifications, plan details, the manufacturer's recommended procedures, and other requirements as directed by the engineer.

704.02 MATERIALS. Materials shall comply with the following sections and subsections.

Portland Cement Concrete (Class A1)	901
Reinforcing Steel	1009
Metal Beam Guardrail	1010.09
Guardrail Posts and Blockout	1010.10
Guardrail Hardware	1010.11
Wire Rope and Fittings for Highway Guardrail	1010.12

Welding shall comply with Section 815.

704.03 GENERAL CONSTRUCTION REQUIREMENTS.

704.03.1 Posts: Align posts and set plumb. When driving of posts is permitted, do not damage posts. Backfill post holes with acceptable material placed and compacted as directed. When posts are to be placed within existing surfaced areas, replace surface material as shown on the plans.

704.03.2 Rail Elements: Erect rail elements in a manner resulting in a smooth, continuous installation. Tighten all bolts, except adjustment bolts. Furnish bolts of sufficient length to extend beyond nuts. Field drill or punch holes for special details when approved. Repair damaged galvanized surfaces and drilled holes in accordance with 811.08.

704.03.3 Anchor Blocks: Reinforced concrete blocks for anchoring guardrail to existing bridge ends shall meet the requirements of Sections 805 and 806. Use Class A1 concrete complying with Section 901. Remove portions of existing bridge railings and drill holes into existing railings when required without damaging the remaining railings. Satisfactorily repair damage to the existing bridge due to operations at no additional cost to the Department. Dispose of removed materials of in

accordance with 202.02.

704.03.4 Guardrail End Treatments: All guardrail end treatments shall have been successfully crash tested in compliance with the crash test requirements of the *National Cooperative Highway Research Program (NCHRP) Report 350* or the *AASHTO Manual for Assessing Safety Hardware (MASH)* at a Test Level 3 (TL-3) unless noted otherwise on the plans. Do not use end treatment systems not in compliance with this requirement on any Department project.

The contractor shall select the end treatment system from the Approved Materials List unless noted otherwise on the plans, but shall not use a combination of such end treatment systems on the same project. The contractor shall submit the selected system to the Project Engineer, which includes the system name, system drawings, the manufacturer of the end treatment system, and all necessary documentation to substantiate that the end treatment is in compliance with the NCHRP 350 or MASH requirement for review. The selected system shall not be installed until the system submittal has been reviewed by the Project Engineer.

The contractor shall install all components of the guard rail end treatment system such as posts, blocks, and hardware in accordance with the drawings and the manufacturer's recommendations. Under no circumstances shall any component of the guard rail end treatment system be modified without written approval.

All end treatments shall bear a label indicating the manufacturer and exact product name of the end treatment along with its assigned NCHRP or MASH test level. This label shall resist weathering and shall be permanently affixed to the railing in such a way as to be readily visible.

Furnish all end treatments with retroreflective sheeting at the terminal end as shown on the plans.

704.04 MEASUREMENT. Quantities of guardrail, anchor sections, end treatments, and transitions for payment will be the design quantities in linear feet shown on the plans and adjustments thereto. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if plan errors are proven, or if design changes are made.

Design quantities of single faced guardrail are based on plan length along the face of rail between end posts, exclusive of openings, and plan length of end sections. Design quantities of double faced guardrail are based on plan length between end posts along centerline of posts, exclusive of openings, and plan length of end sections. Design quantities of trailing end and anchor sections are based on plan length along the face of rail.

Guardrail anchor blocks and end treatments will be measured per each unit furnished and installed.

704.05 PAYMENT. Payment for guardrail, anchor sections, anchor blocks, end treatments, and transitions will be made at the contract unit prices per linear foot, which include drilling of holes in existing concrete for reinforcing steel dowels, concrete, and reinforcing steel and all labor, materials, equipment, tools, and incidentals necessary to complete the work. Payment adjustments for portland cement concrete in accordance with Section 901 will not apply.

Payment will be made under:

Item No.	Pay Item	Pay Unit
704-01	Guardrail	Linear Foot
704-02	Guardrail (Double Faced)	Linear Foot
704-03	Blocked Out Guard Rail	Linear Foot
704-04	Blocked Out Guard Rail (Double Faced)	Linear Foot
704-05	Guardrail Anchor Sections (Trailing End)	Linear Foot
704-06	Guardrail Bridge Attachments	Linear Foot
704-07	Guardrail Transitions	Linear Foot
704-08	Guardrail Anchor Sections (Turndown)	Linear Foot
704-09	Guardrail Anchor Blocks	Each
704-10	Guardrail End Treatment	Each

Section 713
Temporary Traffic Control

713.01 DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Furnish, install, maintain, and remove temporary construction barricades, precast concrete barriers, lights, signals, pavement markings, and signs; provide flaggers; and comply with all other requirements regarding the protection of the work, workers, and safety of the public. Unless otherwise noted in the plans or special provisions, this work also provides for traffic control management in compliance with the *Manual On Uniform Traffic Control Devices* (MUTCD), including the installation, inspection, maintenance, and removal of all traffic control devices relative to work on the project. Signs, barricades, barriers, channelizing devices, pavement markings, or any other temporary traffic control measures shall comply with plan details, *Temporary Traffic Control Standards*, the MUTCD, and these specifications.

Signs, barricades, barriers, channelizing devices, pavement markings, and arrangements thereof, as shown on the plans, are minimum requirements. Furnish and install appropriate signs for special conditions as directed. Requirements for proper signs, barricades, barriers, channelizing devices, or other safety precautions promulgated by the contractor's insurers are not negated by these specifications. These specifications shall not be construed to relieve the contractor of responsibilities for the safety of the public, for liability in connection therewith, or compliance with state and local laws or ordinances.

Assign one or more authorized Traffic Control Supervisors (TCS) to provide traffic control management for the project. If assigning more than one TCS, then submit a weekly schedule identifying who will be in charge of providing traffic control management on a daily basis to the engineer. The TCS shall have a set of all contract documents relating to traffic control (and traffic staging if applicable), a current copy of the MUTCD, and a current copy of Temporary Traffic Control Standards readily available at all times.

If a subcontractor provides traffic control management, the subcontractor's TCS shall meet all the requirements set forth herein.

The contractor may assign one or more Traffic Control Technicians (TCT) to assist the TCS in inspection and maintenance of Traffic Control Devices.

713.02 MATERIALS. Materials for temporary signs, barricades, barriers, and related devices shall comply with the following sections and subsections:

Portland Cement Concrete	901
Reinforcing Steel	1009.01
Backing Material	1015.04.2
Reflective Sheeting	1015.05
Temporary Pavement Markings	1015.08
Raised Pavement Markers & Adhesive	1015.09
Thermoplastic Pavement Markings	1015.10
Traffic Paint	1015.12
Barricade Warning Lights	1018.13

713.02.1 Temporary Pavement Markings: Temporary pavement markings shall be a minimum of 4 inches wide.

713.02.2 Reflective Sheeting: Reflective sheeting requirements for temporary signs, barricades, channelizing devices, drums, and cones shall comply with the following:

713.02.2.1 Temporary Signs and Barricades: On the mainline of freeways and expressways, fabricate the initial advanced warning construction sign using DOTD Type X (Fluorescent Orange) reflective sheeting. Reflective sheeting for all other temporary signs and barricades shall comply with the requirements of ASTM D 4956, Type III.

713.02.2.2 Vertical Panels: Reflective sheeting for vertical panels used to channelize or divide traffic shall meet the requirements of ASTM D 4956, Type III.

713.02.2.3 Drums and Supercones: Reflective sheeting for drums and supercones shall meet the requirements of ASTM D 4956, Type III, and the Supplementary Requirement S2 for Reboundable Sheeting as specified in 1015.05.6.

713.02.2.4 Traffic Cones: Reflective sheeting for traffic cones shall meet the requirements of ASTM D4956, Type III or VI.

713.03 FABRICATION. Fabricate temporary signs, barricades, and related devices according to 729.04. Label back of signs with name of fabricator, date fabricated and the department project number. Fabricate precast concrete barriers according to Section 805.

713.04 TEMPORARY SIGNS AND BARRICADES.

713.04.1 General: When work is in progress, furnish and install temporary signs, barricades, and related devices on portions of the work covered by the Notice to Proceed or when operations are suspended. During such times that temporary signs, barricades, and related devices are not in place, maintain required traffic control devices. Do not begin construction work until signs, barricades, and other traffic control devices have been erected and approved.

The contractor's Traffic Control Supervisor (TCS) shall coordinate with the engineer before removing or covering any signs that conflict with temporary traffic control signs.

When placing signs, coordinate with the engineer in removing Departmental signs, so that appropriate signs are in place at all times.

Signing shall remain in place and be maintained by the contractor, supplemented by additional signs as required, throughout the period of work. When erecting previously used signs on a project, the engineer must inspect and approve these signs before erection. Remove all signs with reduced retroreflectivity or excessive color fading from the work zone. In case of a dispute over a rejected used sign, the engineer may take such measurements or review retroreflectivity and color data obtained by the contractor to determine if the sign meets minimum standards for new materials. Replace signs that do not meet the minimum standards for new materials at no direct pay.

Rejected signs will be marked on the back "NOT FOR USE ON STATE PROJECTS."

Remove signs placed by the contractor according to the Traffic Control Plan. The Department will ensure that all permanent highway signs are in place upon completion and prior to final acceptance of the project.

On projects where constructing the surface course with asphalt concrete or portland cement concrete, install permanent striping and raised pavement markers (when required) prior to removal of barricades.

Upon removal, signs, barricades, and related devices furnished and placed by the contractor shall remain the contractor's property.

713.04.2 Advance Warning Area: When specified, provide Type C arrow boards for temporary traffic control at locations shown on the plans or as directed.

713.04.3 Sign Supports: Mount signs a minimum of 5 feet above the higher of the roadway or the ground clearance. In urban areas, mount the signs a minimum of 7 feet above the roadway.

713.05 PORTABLE CHANGEABLE MESSAGE SIGNS. Furnish, operate, and maintain solar powered portable changeable message signs at all locations designated on the plans or as directed.

The portable changeable message sign shall be in good operational condition when delivered to the job site. The engineer will inspect the signs; if they are found to be in good operational condition with all working parts functioning, the signs will be approved for use on the project.

The message sign shall consist of three separate lines. Each line shall consist of eight characters. Each character shall nominally be 18 inches in height. The width shall be adequate to meet the below legibility requirements. Each character shall be a 5 x 7 LED module or hybrid LED disk. Characters shall be separated at a distance such that the legibility requirements are maintained.

All internally illuminated portions of the sign shall be amber in color. Externally illuminated surfaces meant for message display shall be fluorescent yellow. Non-illuminated surfaces on the front panel shall be flat black in color.

The sign shall be clearly visible under all conditions and all lanes of travel from a distance of 1000 feet perpendicular to the sign center. The sign shall maintain this legibility throughout the entire project. The contractor shall be responsible for maintaining this minimum legibility. Determination of legibility distance shall rest solely with the engineer.

Use the portable changeable message sign in conjunction with other traffic signs and devices in accordance with the plans, project specifications, and as directed by the engineer. Messages shall be approved by the engineer.

Store the signs in an approved secure storage area when not in use. Perform all maintenance operations recommended by the manufacturer and keep adequate records of such operations.

Keep the signs clean and in good repair at all times.

713.06 TEMPORARY PRECAST CONCRETE BARRIERS. Barrier units shall be furnished by the contractor unless specified otherwise. Each barrier unit shall be 15 feet in length.

When the barrier units are furnished by the Department, the units will be furnished at no cost to the contractor. The contractor shall load the barrier units at the location specified, deliver the units to the construction site, and place them as required.

The contractor shall relocate barrier units as required during construction.

Furnish connecting pins and plastic reflectors at no additional cost to the Department. Reflectors shall have 7.0 square inches minimum reflective

area. Install a maximum of 15 feet apart (each side) and in accordance with the manufacturer's recommendations. Replace damaged pins or reflectors as directed by the engineer.

After completion of the work, barrier units furnished by the Department shall be removed, transported by the contractor to the location specified, and unloaded as directed. All costs of loading, transporting, and unloading the barrier units shall be included in the contract price for this item. Barrier units furnished by the contractor shall, upon removal, remain the contractor's property. Satisfactorily repair or replace damaged barrier units at no direct pay.

713.07 PAVEMENT MARKINGS. Color, width, and type of temporary pavement markings shall be in accordance with Table 713-1 and the MUTCD. Temporary pavement markings shall be in place by the end of each day's operation.

Apply temporary striping tape by approved methods to the satisfaction of the engineer. Apply thermoplastic pavement markings in accordance with 732.03. Apply painted traffic striping in accordance with Section 737.

Table 713-1
Temporary Pavement Marking [1, 2, 3]

		Two-lane Highways	Undivided Multilane Highways	Divided Multilane Highways
SHORT TERM	All ADT's with time <7 days	Lane lines 4-ft tape on 40-ft centers; with no passing zone markings. "Do Not Pass" and "Pass With Care" signs as required	Lane lines 4-ft tape on 40-ft centers; dbl yellow centerline	Lane lines 4-ft tape on 40-ft centers
	All ADT's with time >7 days and ≤ 30 days	Lane lines 4-ft tape on 40-ft centers with no passing zone markings and no edgelines. "Do Not Pass" and "Pass With Care" signs as required	Lane lines 4-ft tape on 40-ft centers; dbl yellow centerline and edgelines	Lane lines 4-ft tape on 40-ft centers and edgelines
LONG TERM	All ADT's with time >30 days	Standard 10-ft lane lines, no-passing zone markings; when pavement width is ≥22 ft , edge lines	Standard 10-ft lane lines, centerlines, edge lines	Standard 10-ft lane lines, centerlines, edge lines

[1] No-passing zones shall be delineated as indicated whenever a project is open to traffic.
[2] On all Asphalt Surface Treatments that are open to traffic and used as a final wearing course or as an interlayer, temporary pavement markings (tabs) on 20-foot centers shall be used in lieu of the 4-foot tape on 40-foot centers.
[3] A $150 per day penalty will be assessed the contractor if Table 713-1 is not adhered to.

713.07.1 Short-term Pavement Markings: Provide short-term pavement markings on all pavement surfaces under traffic.

Install temporary striping tape a minimum of 4 feet long on a maximum of 40-foot centers on centerlines of two-lane highways and lane lines of multilane highways. When short-term pavement markings require no-

passing zone markings or double yellow centerlines on undivided multilane highways, use any of the temporary pavement markings listed in 713.02.

Removal of short-term pavement markings only required on the final surface.

713.07.2 Long-term Pavement Markings: Provide long-term pavement markings on all surfaces not covered by an additional surface within two weeks. Long-term pavement markings shall include, but are not limited to, standard lane and centerline markings, edge lines, no passing zone markings on two-lane highways, stop bars, and legend and symbol markings as shown on the permanent pavement marking details. Layout work for exact location of markings will only be required on the final wearing surface**.**

These markings include all of the pavement markings listed in 713.02.

Long-term markings do not include the installation of raised pavement markers.

713.07.3 Final Surface: On the final surface of portland cement concrete pavement or asphalt concrete pavement, place temporary markings with sufficient accuracy to avoid conflict with permanent striping. Temporary pavement markings on the final surface shall be any of the pavement markings listed in 713.02.

Place permanent markings over traffic paint on final surfaces provided the temporary markings have been placed in the final configuration and the painted lines are not flaking or showing signs of deterioration.

When required, remove temporary pavement markings in accordance with the requirements for the type of permanent marking being used. No objectionable staining of pavement surface as a result of the removal procedure will be allowed.

713.07.4 Temporary Reflectorized Raised Pavement Markers: When required, install temporary reflectorized raised pavement markers in accordance with Section 731.

713.07.5 Pavement Markings for Asphalt Surface Treatment: The type of markings shall be in accordance with Table 713-1. Put short-term temporary pavement markings in place at the end of each day's operation. Put long-term temporary pavement markings in place as soon as practical after expiration of the four-day maintenance period following the asphalt surface treatment operation. On the final wearing course, place permanent markings within two weeks following completion of the long-term temporary pavement markings.

When used on the final wearing course, painted traffic striping shall be in accordance with Section 737.

Install temporary raised markers on centerlines of two-lane highways and lane lines of multilane highways in accordance with 1015.08.3. "No passing zone" markings shall be any of the temporary pavement markings listed in 713.02.

Install the temporary raised pavement markers in accordance with the manufacturers' recommendations or as directed by the engineer. Place temporary raised markers consisting of flexible reflective tabs at 20-foot intervals on the centerline of the roadway. Install the markers so that the reflective faces of the markers are perpendicular to a line parallel to the roadway centerline.

If directed by the engineer, remove the temporary raised pavement markers after permanent striping has been accomplished. Repair damage to the pavement surface at no direct pay.

713.08 PORTABLE WORK ZONE TRAFFIC CONTROL DEVICES.

All Category I, II, and III portable work zone traffic control devices, as described below, shall be crashworthy as determined by evaluations through the National Cooperative Highway Research Program (NCHRP) 350 for Test Level 3 (TL-3) or the American Association of State Transportation Officials (AASHTO) M*anual for Assessing Safety Hardware (MASH)*.

713.08.1 Category I Devices: Category I devices are low-mass, single-piece traffic cones, tubular markers, single-piece drums, and flexible delineators. By definition, they are considered crashworthy devices meeting NCHRP Report 350 or MASH criteria. Drum and light combinations with Type A or C warning lights and vandal resistant fastener hardware are included as Category I devices. In lieu of testing for crashworthiness, acceptance of Category I devices for compliance with NCHRP 350 or MASH will be allowed based on self-certification by the supplier. The supplier shall certify that the product is crashworthy in accordance with the evaluation criteria of NCHRP 350 or MASH. This certification may be a one-page affidavit signed by the supplier, with supporting documentation kept on file to be furnished if requested.

713.08.2 Category II Devices: Category II devices include other low mass traffic control devices such as portable barricades either with or without lights or signs, portable sign stands, temporary sign posts, portable vertical panel assemblies, and drums with lights not meeting the drum and light combination requirements for Category I. Individual crash testing is required for Category II devices. FHWA letters of approval shall serve as verification that these devices comply with the crash testing requirements of NCHRP Report 350 or MASH. Provide for the engineer a listing of all the

Category II devices to be used on the project prior to installation including a reference to the FHWA Work Zone letter number for each device. Also certify that each device has been crash tested and meets the NCHRP 350 or MASH requirements.

713.08.3 Category III Devices: Category III devices include massive devices such as temporary concrete barriers, water filled barriers, and temporary attenuators. Individual crash testing is required for Category III devices. FHWA letters of approval shall serve as verification that these devices comply with the crash testing requirements of NCHRP Report 350 or MASH. Provide for the engineer a listing of all the Category III devices to be used on the project prior to installation including a reference to the FHWA Work Zone letter number for each device. Also certify that each device has been crash tested and meets the NCHRP 350 or MASH requirements.

713.09 TRAFFIC CONTROL MANAGEMENT.

713.09.1 Authorization: Prior to commencing work requiring traffic control management, submit to the engineer proof of the Traffic Control Supervisor's (TCS) and Traffic Control Technician's (TCT) current authorizations.

713.09.1.1 Traffic Control Supervisor (TCS) Authorization: The Department will accept the TCS authorization of other approved agencies or firms only if all of the following minimum TCS requirements are met:

1. Successful completion of a work zone traffic control supervisor course approved by the Department.
2. Passing a written examination on the work zone traffic control supervisor course.
3. A minimum of one year full-time field experience, verified by the agency or firm, in work zone traffic control. This experience may be verified by the Department at its discretion.
4. A TCS refresher course is required every 4 years.

713.09.1.2 Traffic Control Technician (TCT) Authorization:

The Department will accept the TCT authorization of other approved agencies or firms only if all of the following minimum requirements are met:

1. Successful completion of a work zone traffic control technician course approved by the Department.
2. Passing a written examination on the work zone traffic control technician course.

3. A TCT refresher course is required every 4 years.

713.09.2 Traffic Control Supervisor (TCS) Duties: The TCS shall be responsible for traffic control management. The TCS shall be available to the engineer to address traffic control management issues as needed. The following is a listing of the TCS's primary duties:

1. Personally provide traffic control management and supervision services at the project site. The TCS may have other assigned duties, but shall be readily available at all times to perform TCS duties as required in the contract. A minimum of one TCT or TCS shall be required on site during working hours, except the following where a TCS shall be onsite at all times during working hours:

- freeways, expressways, and interstates
- multilane roads with posted speeds of 45 mph and greater
- other roadways with ADT equal to and greater than 25,000.

2. Be responsible for observing and evaluating both the daytime and nighttime performance of all traffic control devices installed on the project, in accordance with the Traffic Control Plan (TCP). Ensure that the devices are performing effectively as planned for both safety and traffic operations purposes. Do this inspection upon the initial installation of the devices and when any changes are made. This is in addition to the inspection of traffic control required in 713.09.5.

3. Be responsible for revisions requested by the contractor to the traffic control plan established in the contract and submit the new traffic control plan in accordance with 713.09.3.

4. Be responsible for the training of flagging personnel. This training will ensure that all flagging done on the project is in compliance with the MUTCD Part VI and Louisiana Work Zone Traffic Control Details. Flaggers shall be re-qualified every 4 years.

5. Coordinate all traffic control operations for the duration of the contract, including those of subcontractors, utility companies, and suppliers, to ensure that all traffic control is in place and fully operational prior to the commencement of any work. The Department recognizes that the contractor does not have direct control over the traffic control operations of the utility companies. The coordination provided by the TCS when dealing with utility companies is specifically for the purpose of coordinating concurrent utility traffic control with any other construction traffic control to avoid conflicts.

6. Coordinate, in writing, all project activities with the appropriate law enforcement, fire control agencies, and other appropriate public agencies as determined at the pre-construction conference by the engineer. Also invite the above agencies to the pre-construction conference.

7. The Department, in collaboration with the TCS, will prepare and submit statements concerning road closures, delays, and other project activities to the news media on a weekly basis or more often as needed. Submit news releases to the engineer for review and approval prior to the Department's submittal to the news media.

8. Notify the engineer, or designee, immediately of all vehicular accidents and/or incidents related to the project traffic control. Document the time and date of notification in the traffic control diary. Also monitor and document queues that occur as necessary.

9. Attend the pre-construction conference and all project meetings.

10. Assume responsibility for the maintenance, cleanliness, replacement, and removal of traffic control devices of the existing traffic control plan during working and non-working hours.

713.09.3 Traffic Control Plan Revisions: Make requests for revision in the traffic control plan in writing to the engineer a minimum of 14 calendar days in advance of the needed revision. If the requested revision falls within the scope of the existing contract drawings, the engineer may approve the revision. If the engineer determines that the requested revision is outside the scope of the contract drawings, the contractor will be required to submit a change order request. The change order drawings shall conform to the following:

1. Letter size original contract drawings. Submit change order drawings on high quality, white 8 1/2 x 11 inch letter size paper. The drawings may be hand drafted or computer drafted and arranged in landscape format on the page. The text and drawings must be legible after reproduction on standard reproduction equipment. Left, bottom, and right hand margins shall be at least 1/2 inch and the top margin shall be 1 inch.

2. Full size original contract drawings. Submit change order drawings on high quality, 4-mil, double-matte film using a plotting or reproduction process that fuses the graphics to ensure durability. Repeated handling and friction due to stacking of plans shall not smear, flake or rub off the graphics. Improper plotter settings and plotter wear may cause inconsistent durability of the drawings. Test samples of the submitted drawings for durability. Advance samples of matte films may be submitted for approval; however, the contract plans will be tested separately. Failures will result in rejection of the submittal. Drawing sizes shall comply with 801.05.2.2.1.

3. Lettering on change order drawings shall be of adequate size to facilitate a 50 percent reduction of plans. Make additions or changes with a permanent type of waterproof ink made for this purpose. If revised cross-sections are required, plot the cross-sections on standard cross-section

sheets. As a minimum, draw the ground line, centerline elevation, and station numbers in ink; the remaining information may be drawn in pencil.

Regardless of size, identify all required change order drawings and documents with the DOTD project title and project number. Sign and seal all plans and calculations by a Louisiana licensed civil engineer.

All plans submitted by the contractor shall conform to these specifications and standards. The DOTD Chief Engineer may reject any plans not conforming to these standards.

Revisions to the TCP that are determined to be outside the scope of the original contract drawings must be approved by the DOTD District Traffic Engineering Division prior to implementation of the requested revision. In some cases on high traffic routes or high priority projects, the revisions must be approved by the HQ Traffic Operations Engineer.

713.09.4 Traffic Control Diary: The TCS shall maintain a project traffic control diary using the Department's Site Manager Program. As a requirement of 713.09.2.8, keep the traffic control diary current on a daily basis and electronically sign each daily entry. A date stamp is required on each diary, so it is imperative to complete these diaries in a timely manner. Completion and maintaining of the daily diaries in accordance with the plans and specifications is subject to the LA R.S. 14:133 "Filing or Maintaining False Public Records." Photographs and videotapes may be used to supplement the written text.

Make the traffic control diary available at all times for inspection by the engineer. Review the diary with the engineer on a weekly basis and submit a copy to the engineer on a monthly basis. Failure to complete the diary on a daily basis or make the diary available for review shall result in a deduction from payments for the work of $150 per calendar day as stipulated damages for each day the diary is not completed or maintained. On days when the Department's Site Manager Program is unavailable, either due to location or operation, the TCS shall make arrangements with the approval of the Project Engineer to submit the traffic control diaries daily. Failure to submit the monthly copy of the diary to the engineer shall result in the withholding of the next partial payment until the past due diaries are submitted. Submitted diaries that indicate that contemporary daily record keeping has not been maintained, as determined by the engineer, the Department's Work Zone Engineer, or the Department's Statewide Traffic Control Specialist shall result in a deduction of $150 for each such deficiency as stipulated damages from payments for the work. The lack of a weekly review by the engineer shall not relieve the contractor from the assessment of stipulated damages for its failure to maintain a daily traffic control diary. The traffic control

diary is part of pay item 713 and shall become the property of the Department at the completion of the project.

The contractor, with the approval of the engineer, the Department's Work Zone Engineer, or the Department's Statewide Traffic Control Specialist, may cease the requirement for a traffic control diary when:

1. The project has been partially accepted and/or no remaining work exists on the project site that impacts the travelling public or,

2. When all signs and barricades are removed at the conclusion of the project.

When referring to the daily completion of the dairy, it is meant that the TCS shall complete the diary by the end of the following day except as follows:

1. If the contractor does not work on Saturday, the Friday and Saturday diaries shall be entered into SiteManager no later than Monday morning at 9:00 am.

2. If the contractor works on Saturday, the Friday diary shall be entered by the end of the day Saturday, but the Saturday diary shall be entered no later than Monday at 9:00 am. The Sunday diary shall still be entered by the end of the day Monday.

713.09.5 Inspection of Traffic Control: The TCS shall be responsible for the inspection of all traffic control devices every calendar day that traffic control devices are in use. This inspection may be delegated to the TCT, except for the conditions described in 713.09.2.1 above, where the TCS shall conduct the inspections himself. Regardless, the TCS shall be stationed within one hour of the jobsite. Use the *Quality Guidelines for Work Zone Traffic Control Devices* standard by the American Traffic Safety Services Association (ATSSA) to evaluate the condition of the traffic control devices to determine if they are acceptable for use. Provide for the immediate repair, cleaning, or replacement of any traffic control devices not functioning as required to ensure the safety of the motorist and construction personnel and/or not meeting the ATSSA standard.

Conduct inspection of the traffic control devices by the TCS at the beginning and end of each workday, and as scheduled or directed by the engineer during the workday. Inspect the traffic control devices by the TCS on weekends, holidays, or other non-work days at least once per day. Inspect traffic control devices by the TCS at least once a week during nighttime periods and the same night after any modifications or changes have been made in the traffic control devices.

713.09.6 Failure to Comply: The engineer, the Department's Work Zone Engineer, or the Department's Statewide Traffic Control Specialist may suspend all or part of the contractor's operation(s) for failure to comply with the approved "Traffic Control Plan" or failure to correct unsafe traffic conditions within a reasonable period of time after such notification is given to the contractor in writing. If major traffic control deficiencies require immediate corrective action for the safety of the travelling public, the engineer, the Department's Work Zone Engineer, or the Department's Statewide Traffic Control Specialist may completely suspend the contractor's operations. This suspension can either be spoken or written, but if spoken, shall be followed up in writing as soon as practical. The Department reserves the right to revoke or de-certify the TCS for gross neglect of these duties. At this point, the TCS shall retake a Department approved TCS course and shall be subject to a 90-day probationary period at the discretion of the Department.

In the event that the contractor does not take appropriate action to bring the deficient traffic control into compliance with the approved traffic control plan or to correct the unsafe traffic conditions, the Department may proceed with the corrective action using its own forces, and such costs will be deducted from payments owed to the contractor.

If the contractor's operations are suspended, the normal assessment of contract time will not cease for the period required to correct these unsafe conditions and traffic control deficiencies. The contractor will not be relieved of the responsibility to provide traffic control safety to the traveling public when a project is under full or partial project suspension. When a project is under suspension due to the contractor's failure to comply with this section, or when the contract is under stipulated damages, continue to provide traffic control management. No additional measurement or payment will be made. If suspensions or partial suspensions are requested by the contractor, the additional traffic control management costs will be at no expense to the Department.

713.09.7 Engineer Modifications: The provisions included in the plans and specifications for handling and controlling traffic during construction may be changed by the engineer, with the approval of the DOTD District Traffic Operations Engineer, due to actual field conditions encountered. Such changes will be made by written instruction to the contractor and be considered an amendment of the plans and specifications as of the date of the change.

713.10 NIGHTTIME CONSTRUCTION OPERATIONS.

713.10.1 Description: This work consists of furnishing, installing, operating, maintaining, moving, and removing portable light towers and equipment-mounted fixtures for nighttime construction operations. Nighttime construction operations are defined as work performed after sunset and before sunrise.

713.10.2 Equipment Requirements: Materials and equipment shall be in good operating condition and in compliance with applicable OSHA, NEC, and NEMA codes.

The contractor shall furnish, to the engineer, two light meters capable of measuring the level of illuminance. These light meters will be used by the engineer to check the adequacy of illumination throughout the nighttime construction operations. The light meters will become the property of the contractor after final acceptance.

Suitable brackets and hardware shall be provided to mount lighting fixtures on equipment and machinery. Mountings shall be designed so that light fixtures can be positioned as necessary to reduce glare and provide the required illumination. Mounting brackets and fixtures shall not interfere with the equipment operator or any overhead structures and shall be securely connected to the fixtures to ensure minimum vibration.

Equipment-mounted systems shall be attached to construction equipment to provide Level II and Level III illuminance. Equipment mounted lighting shall be designed and positioned to be operated independently of general illumination.

Portable systems may consist of ground-mounted, trailer-mounted, or equipment mounted light towers. Portable light towers shall be sturdy and free-standing without the aid of guy wires or bracing. Towers shall be capable of being moved as necessary to keep pace with the construction operation. Extreme caution shall be used when moving portable light towers in the vicinity of overhead utilities. Portable lighting systems shall be positioned to minimize the risk of being impacted by traffic on the roadway or by construction equipment.

Conventional vehicle headlights shall not be permitted as the sole means of illumination while working. All motorized vehicles shall be equipped with conventional vehicle headlights to permit safe movement in non-illuminated areas. Use of strobe lights on vehicles and equipment is prohibited. Use of flashing lights shall be kept to a minimum to prevent motorist distraction. Flashing lights shall not be used behind barrier protection systems.

Switches shall be provided to adequately control the various lights. All wiring shall be weatherproof and installed according to local, state, federal, and OSHA requirements. Ground fault circuit interrupters shall be provided for electrical outlets used for electrical tools and extension cords. The contractor shall provide sufficient fuel, spare lamps, generators, and qualified personnel to ensure that all required lights operate continuously during nighttime construction operations. In the event of any failure of the lighting system, the construction operation shall be discontinued until the required level of illumination is restored. In residential areas, generator systems shall be selected to comply with local noise ordinances. A supply of emergency flares shall be maintained by the contractor for use in the event of emergency or unanticipated situations.

713.10.3 Illumination Requirements: All operations that are performed during nighttime hours shall be properly illuminated to allow for the safe performance and inspection of the work.

Work area is defined as a minimum of 50 feet ahead and behind the employee, where work is to be performed. A minimum of 5 foot-candles (54 lux) shall be maintained throughout the work area during nighttime construction operations, and during the setup and removal of lane or roadway closures.

Lighting shall be adequate to meet the required level of illuminance and uniformity over the work area as follows:

713.10.3.1 Level I (5 foot-candles, 54 lux): This level of illuminance shall be provided for all work areas of general construction operations, such as excavation and embankment; cleaning and sweeping; landscaping; planting and seeding. Stockpiles shall also be illuminated to Level I to enhance safety and improve work efficiency.

713.10.3.2 Level II (10 foot-candles, 108 lux): This level of illuminance is required for areas on or around construction equipment such as that used for drainage installations, striping, base course construction, milling, asphalt paving operations, and concrete placement and removal. This level is necessary for safe operation of equipment and for obtaining an acceptable level of accuracy.

713.10.3.3 Level III (20 foot-candles, 215 lux): This level of illuminance is required for tasks requiring a higher level of visual performance or for tasks with a higher level of difficulty. Such tasks include, pavement or structural crack filling, joint repair, joint cleaning, joint sealing, pavement patching and repairs, saw-cutting, installation of signal equipment or other electrical/mechanical equipment, and other tasks involving fine details or intricate parts and equipment.

713.10.4 Glare Control: All lighting provided under this item shall be designed, installed, and operated to avoid glare interference with roadway traffic or discomfort for residences adjoining the roadway. The contractor shall locate, aim, and adjust the lights to provide the required level of illuminance and uniformity in the work area without the creation of objectionable glare. The engineer shall determine when glare exceeds acceptable levels, either for traffic or adjoining residences. The contractor shall provide shields, visors, or louvers on luminaries as necessary to reduce objectionable levels of glare.

At a minimum, the following requirements shall be met to avoid objectionable glare to oncoming traffic:

1. Tower-mounted luminaries shall generally be aimed either parallel or perpendicular to the roadway.

2. All luminaries shall be aimed such that the center of the beam axis is no greater than 60 degrees from the vertical.

3. Luminous intensity of any luminary shall not exceed 20,000 candelas at an angle of 72 degrees from the vertical.

713.10.5 Operational Requirements: Thirty days prior to the start of night time operations, the contractor shall submit a lighting plan to the engineer for acceptance. The contractor shall select appropriate lighting systems and design a lighting plan to achieve the required illuminance levels.

The lighting plan shall include location of lights necessary for every aspect of work; description of light equipment to be used; description of power source; attachment and mounting details for lights to be attached to equipment; technical details pertaining to the lighting fixtures; details on hoods, louvers, shields, or other glare control methods; and lighting calculations confirming that the illumination requirements will be met by the layout plan.

Lighting inspection will include (1) light meter measurements to determine illumination levels, (2) subjective observation of the lighting setup to evaluate glare potential for drivers and workers, and (3) a physical check of the lighting equipment to ensure that it complies with the specification requirements included in the contractor's lighting plan.

Prior to the first night of operation, the engineer will check the adequacy of the installed lighting using a light meter. A summary of these measurements will be noted in the inspection records to provide a basis for comparing subsequent measurements. If the required illuminance levels are not met, the contractor shall make the necessary adjustments before any work proceeds.

Operational checks shall be made when construction phasing changes and lighting plan changes are required to accommodate different phases of construction. Periodic checks will be made throughout the duration of nighttime operations. If the required illuminance levels are not met, the contractor shall make the necessary adjustments to the lighting plan before work continues.

During construction operations, in the event of any failure of the lighting system, the operations shall be discontinued until the required level of illumination is restored.

713.11 MEASUREMENT.

713.11. 1 Temporary Signs and Barricades: When the contract does not include a pay item for "Temporary Signs and Barricades," the provision of temporary construction signs, barricades, and related devices will be considered by the Department to be for the convenience of the contractor and will not be measured for payment.

When including a pay item for "Temporary Signs and Barricades" in the contract, the furnishing, erecting, maintaining, and subsequent removing of temporary construction signs, barricades, and related devices will be measured on a lump sum basis.

Flashing arrow boards will not be measured for separate payment, but will be included in the contract lump sum price for Temporary Signs and Barricades.

713.11.2 Temporary Pavement Markings: When the contract does not include a pay item for Temporary Pavement Markings, provision of these markings will be considered by the Department to be for the convenience of the contractor and will not be measured for payment. When the contract includes an item for Temporary Pavement Markings, these markings' acceptable furnishing, placing, maintenance, and subsequent removal will be measured by the linear foot or mile, as specified.

When measuring by the linear foot of striping, measurement will be made for the material placed. Gaps will be excluded.

When measuring by the mile of single strip per roadway per application, no deduction will be made for the standard design gaps in broken line striping; however, deductions will be made for the length of other gaps or omitted sections.

Temporary pavement legends and symbols will be measured per each legend or symbol.

Temporary reflectorized raised pavement markers will be measured per each marker furnished, placed, and accepted. Removal of temporary reflectorized raised pavement markers will not be measured for payment.

713.11.3 Temporary Precast Concrete Barriers: When the contract does not include a pay item for Temporary Precast Concrete Barriers, the provision of these barriers will be considered by the Department to be for the convenience of the contractor and will not be measured for payment.

Temporary Precast Concrete Barriers furnished by the contractor will be measured per each unit installed, which includes construction, delivery, furnishing, installing, maintaining, and removing each unit from the jobsite a single time. Temporary Precast Concrete Barriers (Department furnished) will be measured per each unit installed which includes collecting from the location specified, transporting, and delivering to the project site, and all costs of handling, maintaining, and returning each unit to the location specified or as directed.

Further movements of barriers for subsequent construction phases will be measured per movement of each barrier.

713.11.4 Traffic Control Management: Traffic control management will not be measured for payment.

713.11.5 Nighttime Construction Operations: Nighttime construction operations will not be measured for payment.

713.12 PAYMENT. Payment for temporary construction signs, barricades, and related devices will be at the contract lump sum price in accordance with the payment schedule of Table 713-2.

Table 713-2
Payment Schedule
Temporary Signs, Barricades and Related Devices

Percent of Total Contract Amount Earned	Allowable Percent of Lump Sum Price for Temporary Signs and Barricades
Initial Erection	40
25	60
50	80
75	95
100	100

Payment for temporary pavement markings will be made at the respective contract unit prices. Payment for temporary precast concrete barriers will be made at the contract unit price per each. The concrete in temporary precast barriers furnished by the contractor will be identified by lots and shall be subject to pay adjustments in accordance with Table 901-6 and Note 1 therein. Size, sampling, and testing of each concrete lot shall be in accordance with the Materials Sampling Manual.

Payment for additional movements of temporary concrete barriers will be made per movement of each barrier when required in the plans and directed by the engineer.

Payment for portable changeable message signs will be made at the contract unit price per each during the life of the contract.

Payment will be made under:

Item No.	Pay Item	Pay Unit
713-01	Temporary Signs and Barricades	Lump Sum
713-02	Temporary Pavement Markings	Linear Foot
713-03	Temporary Pavement Markings (Broken Line)	Mile
713-04	Temporary Pavement Markings (Solid Line)	Mile
713-05	Temporary Pavement Legends and Symbols	Each
713-06	Temporary Reflectorized Raised Pavement Markers	Each
713-07	Temporary Precast Concrete Barrier (Contractor Furnished)	Each
713-08	Temporary Precast Concrete Barrier (Department Furnished)	Each
713-09	Temporary Portable Barrier	Each
713-10	Temporary Precast Concrete Barrier Movement	Each
713-11	Portable Changeable Message Signs	Each

Section 727
Mobilization

727.01 DESCRIPTION.

Mobilization consists of preparatory work and operations, including those necessary for movement of personnel, equipment, supplies, and incidentals to the project site; the establishment of offices, buildings, and other facilities necessary for work on the project; the cost of bonds and any required insurance; and other preconstruction expenses necessary for start of the work, excluding the cost of construction materials.

727.02 MATERIALS. Vacant

727.03 CONSTRUCTION REQUIREMENTS. Vacant

727.04 MEASUREMENT. Mobilization will be measured for payment as a lump sum.

727.05 PAYMENT. When the contract does not include a pay item for mobilization, no direct payment will be made for mobilization.

When the contract contains a pay item for mobilization, payment will be made at the contract lump sum price, subject to the following provisions:

Partial payments for mobilization will be made in accordance with the schedule of Table 727-1 up to a maximum of 10 percent of the original total contract amount, including this item. Payment of any remaining amount will be made upon completion of all work under the contract.

Table 727-1
Mobilization Payment Schedule

Percent of Total Contract Amount Earned	Allowable Percent of the Lump Sum Price for Mobilization
1st Partial Estimate	25
10	50
25	75
50	100

No payment adjustments will be made for this item due to changes in the work in accordance with Section 109.

When the contract includes a pay item for field laboratories under Section 722, payment for mobilization will exclude those facilities.

Payment will be made under:

Item No.	Pay Item	Pay Unit
727-01	Mobilization	Lump Sum

Section 729
Permanent Signs

729.01 DESCRIPTION. Furnish and install traffic signs, dead end road installations, markers and delineators, with accessories, posts, and overhead spans of specified materials, sizes, shapes, weights, and designs.

In general, the work and materials comply with the MUTCD as modified by these specifications or as shown on the plans.

Fabricate signs in an approved plant.

The term "legend" shall mean border strip, letters, numerals, and symbols which convey the message on signs.

729.02 MATERIALS. Other than recycled aluminum sign panels and blanks, all materials shall be new stock conforming to the following:

729.02.1 Sign and Marker Sheeting: Sheeting material for sign panels, delineators, barricades, and other markers shall comply with Section 1015. All permanent signs shall meet the requirements of DOTD Type X.

729.02.2 Ferrous Metal: Ferrous metals shall comply with 1015.02.1. Reinforcing steel shall comply with Section 1009. Ferrous metal, except reinforcing steel, shall be galvanized in accordance with Section 811.

1. U-channel posts shall comply with 1015.02.1.3.
2. Square tubing shall comply with 1015.02.1.4.

729.02.3 Aluminum: Aluminum alloys for structural members shall comply with 1015.02.2. Aluminum sign panels shall comply with 1015.04.1.

729.02.4 Fittings: Structural bolts, nuts, washers, and miscellaneous hardware shall comply with 1015.02.3.

729.02.5 Guard Rail: Guard rail materials for dead end road installations shall comply with Section 1010.

729.02.6 Timber: Treated piling and timber for barricades in dead end road installations shall comply with Section 1014.

729.02.7 Concrete: Concrete shall be Class M complying with Section 901.

729.02.8 Flexible Sign Posts: Flexible posts for small signs, markers, and delineators shall comply with 1015.03.

729.02.9 Silk Screen Paste and Overlay Film: Silk screen paste shall comply with sheeting manufacturer's recommendations and with 1015.07.

729.03 GENERAL REQUIREMENTS.

729.03.1 Sign Face Design and Fabrication: Fabricate signs of Types A, B, D, and E; overhead signs; and sign face overlay panels in accordance with the MUTCD, the *Standard Highway Signs Booklet*, and the signing detail sheets of the plans.

Furnish shop drawings of sign faces for Types D and E, overhead signs, sign overlay panels, and for any non-standard sign faces of Types A and B not provided by the Department. Obtain approval of shop drawings from the Interstate Guide Sign Engineer before sign face fabrication begins.

729.03.2 Sign Mountings and Supports Fabrication: Furnish steel for vertical sign supports and trusses. Furnish steel sign supports for post mountings, and rigid steel or flexible posts for small signs, markers, and delineators. Before beginning work, notify the engineer in writing of proposed signing materials. Use the same signing materials throughout the project.

Fabricate sign mountings according to Section 807. Furnish fabrication and erection drawings of all sign mountings in accordance with 801.03 with the exception of standard roadside installations. Fabrication and erection drawings will be approved only after approval of sign face shop drawings. Do not fabricate sign mountings or construct sign footings before drawings are approved and distributed.

Welding shall comply with Section 809.

729.03.3 Material Sampling and Certification: Material sampling and certification for sign faces, sign mountings, U-channel posts, and square tubing shall be in accordance with the Materials Sampling Manual. Furnish NCHRP 350 or Manual for Assessing Safety Hardware (MASH) compliance documentation.

729.04 FABRICATION OF ALUMINUM SIGN PANELS.

729.04.1 General: Complete metal fabrication including shearing, cutting, and punching of holes prior to surface treatment of metal and application of sheeting. Cut metal panels to size and shape; free of buckles, warps, dents, cockles, burrs, and defects resulting from fabrication. Surface of sign panels shall be flat.

Splice plates joining sign panels shall not extend behind horizontal sills. Flat aluminum panels shall be a nominal 0.080 inch thick. Extruded

aluminum panels shall be 12 inches wide and have a nominal face thickness of 0.125 inches.

The completed product shall have a surface free of cracks, blisters, blemishes, and wrinkles.

729.04.2 Aluminum Surface Treatment: Provide surface treatment as specified herein or in accordance with approved recommendations of the reflective sheeting manufacturer.

729.04.2.1 Degreasing:

1. Vapor Degreasing: Immerse panels in a saturated vapor of organic solvent. Remove trademark printing with lacquer thinner or a controlled alkaline cleaning system.

2. Alkaline Degreasing: Immerse panels in a tank containing alkaline solutions, controlled and titrated to the solution manufacturer's specifications. Immersion time shall depend upon amount of contaminants present and thickness of metal.

729.04.2.2 Etching:

1. Acid Etch: Etch the panels in a 6 to 8 percent phosphoric acid solution at 100°F. Rinse the panels thoroughly with running cold water followed by hot water tank rinse.

2. Alkaline Etch: Etch pre-cleaned aluminum surface in an alkaline etching material controlled by titration, using time, temperature, and concentration specified by solution manufacturer. Rinse thoroughly. Remove smut with an acidic, chromium compound solution specified by solution manufacturer and thoroughly rinse.

729.04.2.3 Drying Panels: Dry panels with a forced hot air drier. Handle panels with clean canvas gloves or other approved methods between cleaning and etching operations and sheeting application. Protect cleaned panels from grease, oil or other contaminants prior to application of reflective sheeting.

729.04.3 Sheeting Application: Apply reflective sheeting in accordance with the approved written recommendations of the sheeting manufacturer. Apply reflective sheeting with no horizontal splices. Apply reflective sheeting directly to extruded panels with no more than two vertical splices per sign and no more than one vertical splice per individual panel. Carefully match sign faces comprised of two or more pieces of reflective sheeting for color at the time of sign fabrication to provide uniform appearance and brilliance, both day and night. Apply legend by one of the following methods:

729.04.3.1 Direct Applied: Legend shall be adhesive coated reflective sheeting as specified in 1015.05. Apply legend to provide a wrinkle-free surface.

729.04.3.2 Screened: Apply legend to sign faces by an approved screening process in accordance with the reflective sheeting manufacturer's recommendations. Completed screen surface shall be uniform in color, have sharp edges, be free of bubbles, show good workmanship, and be free of blemishes, streaks, or spotted areas. Screening on sheeting may be accomplished either before or after application of sheeting to panels.

729.04.3.3 Overlay Film: Apply legend to the sign faces by an approved transparent electronic cuttable overlay film compatible with the reflective sheeting to which it is applied. Apply in accordance with the recommendations of the manufacturer(s) of both the film and the reflective sheeting. Areas covered by film shall have sharp edges, be free of bubbles and blemishes, and show good workmanship.

729.04.4 Packaging: Before being packed, allow signs to dry according to manufacturer's recommendations. Slip sheet signs and pack to ensure arrival at their destination in an undamaged condition. Do not allow packaged signs to become wet during storage or shipment.

729.05 CONSTRUCTION REQUIREMENTS. When requiring removal of existing signs, coordinate sign removal operations as directed with new sign construction to provide for adequate signing to be in place at all times.

729.05.1 Sign Location: Sign support locations will be as shown on the plans or as directed by the engineer. After initial staking, obtain the engineer's approval of sign locations. Sign locations which are obviously improper because of topography, existing appurtenances, or other conflicting conditions will be adjusted to the closest desirable location. Determine post length at the established sign support location. Assure correct orientation, elevation, offset, and leveling of signs.

729.05.2 Sign Positioning:

729.05.2.1 Overhead Signs: Construct signs so that the top edge of the sign face is tilted towards oncoming traffic 3 degrees (approximately 1:20) from vertical and at right angles to the road, unless otherwise directed.

729.05.2.2 Road Edge Signs: Construct road edge signs with sign faces vertical. Place sign faces located less than 30 feet from the edge of travel lane at a 93 degree angle from the center of the travel lane. Place sign faces located 30 feet or more from the edge of the travel lane at an 87 degree angle from the center of the travel lane. Where the lanes divide or

are on curves or grades, orient sign faces to be most effective both day and night avoiding specular reflection.

729.05.2.3 Delineator and Object Marker Assemblies: Place these assemblies at least 24 inches beyond the outer edge of roadway shoulder, 24 inches beyond the face of curb, or in the line of guard rail.

729.05.2.4 Milepost Assemblies: Place these assemblies at least 6 feet beyond the outer edge of roadway shoulder.

729.05.2.5 Vertical and Horizontal Clearances: Vertical and horizontal clearances shall be in accordance with the MUTCD and as shown on the plans.

729.05.3 Sign Overlay Panels: When specified by the DOTD Sign Inspection Team, existing signs may be overlaid with new sign panels placed over the existing sign face. No partially overlaid signs shall be allowed to remain exposed overnight. Only one overlay shall be placed on a sign. When an overlay is to be placed on an existing overlaid sign, the previous overlay shall be removed prior to placement of the new overlay. Overlay panels shall conform to 729.04. Raised legends shall be removed from the existing sign face prior to placing the overlay panel. The size of the overlay panel shall not exceed the size of existing sign panel by more than 3 inches on any side. Overlay panels shall be attached to the existing sign with rivets complying with Subsection 1015.02. Rivets shall be placed on 12-inch centers (maximum) along the perimeter of panel and at panel splices, and on 24-inch centers (maximum) both vertically and horizontally in interior portions of each panel. Rivets shall be centered horizontally on panels less than 24 inches wide. A 4-inch x 4-inch shim with a nominal 0.080-inch thick aluminum plate shall be placed between existing panel and overlay panel at interior rivet locations. Shims cut from salvaged sign panels may be used. The existing sign panels shall be kept reasonably flat during installation of the overlay panels. Splice arrangement for overlay panels shall conform to the requirements for traffic sign blanks.

729.05.4 Recycled Aluminum Panels and Blanks: Recycled aluminum sign panels will be allowed for installation in accordance with the following requirements.

Recycled sign panels shall be the same alloy and temper required for new sign panels specified in Section 1015. They shall be free of corrosion and white rust and shall meet the required tolerances for flatness and thickness for new sign panels. The process for removing the old reflectorized or non-reflectorized sheeting shall not damage the chromate coating. Smelting, sanding, and chemical stripping processes for recycling will not be allowed.

Recycled signs will be inspected, sampled, and tested in accordance with current Departmental policy, except certified test reports will not be required. Furnish a materials guaranty that the materials conform to the requirements for recycling the sign panels. Each such panel must be labeled on the back as recycled and label shall be legible from the ground.

729.05.5 Excavation and Backfill: The contractor shall perform excavation for sign installation to levels and dimensions shown on the plans, or as directed. Perform excavation and backfill operations in accordance with Section 802.

729.05.6 Footings: Foundation piles, concrete, reinforcing steel, and anchor bolt assemblies shall comply with Sections 804, 805, 806, and 807.

See DOTD Roadside Traffic Sign Standard Details for stub heights.

Drive posts for ground mounted delineator, object marker, and milepost assemblies; no footings will be required.

729.05.7 Bolt Tensioning: Assemble slip plates for breakaway sign posts in the shop with high strength bolts tightened at a minimum bolt tension in accordance with 807.05. After field installation, tighten high strength bolts in the breakaway base connection to the specified minimum bolt tension. The bolt tension in both the slip plate connection and the breakaway base connection will be checked by the engineer. Correct bolt tensioning as required.

729.05.8 Cleaning and Clearing: Prior to erection, clean sign faces to allow adequate visibility of the sign. Any clearing or tree trimming required to provide for full sign visibility shall be in accordance with the plans, 729.08.9, or as directed.

729.05.9 U-Channel Posts: Drive U-channel posts for ground mounted small signs, markers, and delineators vertically to a minimum depth of 3 feet below natural ground using a suitable protective driving cap.

U-channel posts may be spliced where long lengths are required. The upper section shall overlap the lower section by at least 24 inches. The bottom edge of the upper section of the splice shall be a minimum of 24 inches above the ground. Secure the spliced sections with at least four 5/16 inch diameter hex head bolts spaced equally along the splice.

Splicing of U-channel posts will not be allowed when break-away footings are required.

729.05.10 Square Posts: Install square tubing posts with a break away as shown in the DOTD Roadside Traffic Sign Standard Details.

729.06 DEAD END ROAD INSTALLATIONS. Dead end road installations shall be of the specified type and located as shown on the plans. Construct timber barricade type installations in accordance with Section 812 and as follows. Set timber piling in full depth holes and backfill as directed or drive to required depth. Drive steel posts for other type installations with a suitable protective cap. Piles and posts shall be vertical. Construct guard rail in accordance with Section 704.

729.07 ACCEPTANCE OF SIGNS. After the installation of signs is complete, the Department's Sign Inspection Team will perform an inspection to ensure conformance with applicable plans, standards and project specifications. When specular reflection is apparent on any sign, adjust its positioning to eliminate the condition. Follow-up inspections may be conducted prior to acceptance, at the discretion of the Department's Sign Inspection Team.

Clean signs before the time of inspection. Reflective sheeting shall be free of cuts, scratches, breaks, or other defects which might allow moisture to infiltrate and damage reflective cells. Replace or repair nonstandard or otherwise unacceptable signs and traffic control devices as directed. Correct damage that is discovered at the time of the sign inspection.

In lieu of removing and replacing new sign faces that have been rejected, use sign overlay panels or recycled panels complying with 729.05.3 and 1015 to correct the deficiencies at no cost to the Department.

729.08 MEASUREMENT.

729.08.1 Sign Faces and Overlay Panels: Quantities for payment will be the design areas in square feet of sign faces as specified on the plans and adjustments thereto. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if plan errors are proven, or if design changes are made. Material used in blanks and backing incidental to the sign face will not be measured for payment. In determining the area of sign faces, no deductions are made for corner radii or mounting holes. The area of octagonal signs and interstate shields is computed as the area of its smallest rectangle or square. The area of triangular signs is computed as the area of the triangle.

729.08.2 Post Mountings: Post sign mountings, including breakaway supports, will be measured per each post.

729.08.3 Overhead Mountings: Overhead sign mountings, including bridge fascia mountings, will be measured per each structure.

729.08.4 Delineator, Object Marker and Milepost Assemblies: Delineator, object marker, and milepost assemblies will be measured per each assembly.

729.08.5 Dead End Road Installations: Dead end road installations will be measured per each installation.

729.08.6 Footings: Concrete footings for overhead sign mountings will be measured per each footing. Footings and aprons for post sign mountings will not be measured for payment.

729.08.7 U-Channel Posts: U-channel posts will be measured per each unit installed when not part of an assembly.

729.08.8 Square Tubing: Square Tubing will be measured per each unit installed when not part of an assembly.

729.08.9 Clearing or Tree Trimming: Any clearing or tree trimming required by this section and not provided for elsewhere in the contract will be included in the contract unit price for signs.

The trimming of significant trees that have been identified under the Department's policy governing the treatment of significant trees within the highway right-of-way, zone of construction or operational influence, shall be performed or supervised by an ISA Certified Arborist with a minimum of five years of experience in arboriculture. All work must be done in compliance with current ANSI Z133 and *International Society of Arboriculture (ISA) Standards*. Documentation must be provided proving that the tree trimmer/climber has a minimum of three years full time experience in tree removal and pruning operations along public roads and near energized wires. Arborist(s) shall maintain an arborist license and insurances during the course of the project in accordance with 107.02 and 719.02. The Department has the right to request a new crew be assigned to perform the work if needed. Significant tree issues arising on construction and/or maintenance projects shall be managed by the District Roadside Development Coordinators, who shall seek the guidance of the Landscape Architectural staff when questions arise.

729.09 PAYMENT.

729.09.1 Sign Faces and Overlay Panels:

New Installation: Payment for sign faces on new sign supports will be made at the contract unit price per square foot, which includes furnishing, fabricating, and constructing the signs, and furnishing necessary attaching devices.

Furnish and Install: Payment for sign faces on existing sign supports will be made at the contract unit price per square foot, which includes

furnishing, fabricating and constructing the signs and furnishing necessary attaching devices.

Install: Payment for install only on existing sign supports will be for labor only. All sign faces and necessary mounting hardware will be provided by the Department. Payment will be made at the contract unit price per square foot.

Relocate: Payment will include dismantling of sign and reinstalling sign on a new sign support. Payment will be made at the contract unit price per square foot.

729.09.2 Post Mountings: Payment for post sign mountings will be made at the contract unit price per each, which includes furnishing, fabricating and constructing the support complete, ready for affixing signs, and includes required excavation, concrete, and reinforcement for footings and aprons, and mounting of signs or remounting of existing signs when required by the plans. Payment for sign layout will be made in accordance with Section 740.

729.09.3 Overhead Mountings: Payment for overhead sign mountings, including bridge fascia mountings, will be made at the contract unit price per each, which includes furnishing, fabricating and erecting the structure complete, ready for affixing signs, and mounting of signs or remounting of existing signs when required by the plans.

729.09.4 Delineator, Object Marker, and Milepost Assemblies: Payment for delineator, object marker, and milepost assemblies will be made at the contract unit prices per each, which includes posts. Concrete pads for milepost (reference location markers) will be paid for under Section 706.

729.09.5 Dead End Road Installations: Payment for dead end road installations will be made at the contract unit price per each, which includes piling, posts, barricades, sign materials, reflectors, and any required guard rail.

729.09.6 Footings: Payment for footings for overhead sign mountings will be made at the contract unit price per each, which includes excavation, piling, concrete, reinforcing steel, anchor bolt assemblies, and backfill. The concrete in footings will be identified by lots and shall be subject to pay adjustments in accordance with Table 901-5 and Note 1 therein. Size, sampling, and testing of each concrete lot shall be in accordance with the Materials Sampling Manual.

729.09.7 U-Channel Posts and Square Tubing: Payment for U-channel posts and square tubing will be made at the contract unit price per each which shall include all labor, equipment, tools, materials, and

incidentals necessary to complete the work, including splicing of posts, and when required removing and remounting of existing signs, and mounting of new signs.

Payment will be made under:

Item No.	Pay Item	Pay Unit
729-01	Sign (Type A)	Square Foot
729-02	Sign (Type B)	Square Foot
729-03	Sign (Type C)	Square Foot
729-04	Sign (Type D)	Square Foot
729-05	Sign (Type E)	Square Foot
729-06	Sign (Overhead Mounted)	Square Foot
729-07	Sign (Overlay Panel)	Square Foot
729-08	Mounting (_____Size Post)	Each
729-09	Mounting (Overhead Truss)(Ground Mounted)	Each
729-10	Mounting (Overhead Truss)(Structure Mounted)	Each
729-11	Mounting (Overhead Cantilever)(Ground Mounted)	Each
729-12	Mounting (Overhead Cantilever)(Structure Mounted)	Each
729-13	Mounting (Bridge Facia Mounted)	Each
729-14	Delineator Assembly (Ground Mounted)	Each
729-15	Delineator Assembly (Structure Mounted)	Each
729-16	Object Marker Assembly	Each
729-17	Milepost Assembly (Ground Mounted)	Each
729-18	Milepost Assembly (Structure Mounted)	Each
729-19	Dead End Road Installation (Type)	Each
729-20	Footings for Overhead Mounting (Type)	Each
729-21	U-Channel Post	Each
729-22	Square Tubing Post	Each

Section 732
Plastic Pavement Markings

732.01 DESCRIPTION. The work covered by this section of Specifications shall be in accordance to the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, and the latest revisions. Furnish and place reflective pavement markings of hot applied thermoplastic or preformed (cold or hot applied) plastic at the locations shown on the plans. Plastic pavement markings include stripes, gore markings, lines, legends, and symbols.

732.02 MATERIALS.

732.02.1 Thermoplastic Markings and Glass Beads: Thermoplastic marking material shall be a plastic compound reflectorized by internal and external application of glass beads. Comply with 1015.10 and 1015.13. Width, thickness, and color of markings shall be as specified. Black thermoplastic pavement markings shall require skid-resistant filler in lieu of glass beads.

732.02.2 Preformed Plastic Marking Tape: Comply with 1015.11.

732.02.3 Surface Primer: Provide a single component surface primer or two component primer sealer for the appropriate application in accordance with 732.03.5. The primer shall form a continuous film that dries rapidly and adheres to the pavement. The primer material shall not discolor or cause any noticeable change in the appearance of the pavement outside of the finished pavement marking. Apply primer in accordance with the manufacturer's recommendation. Do not allow traffic over primed areas before applying thermoplastic.

732.02.4 Glass Beads: Glass beads for standard (flat) thermoplastic markings shall be in accordance with 1015.13.

732.03 CONSTRUCTION REQUIREMENTS.

732.03.1 Equipment for Standard (Flat) Thermoplastic Marking Material: Finished markings shall be continuous and uniform in shape, with clear and sharp dimensions. Applicators shall be capable of producing various widths of traffic markings. Applicators shall produce sharply defined lines and provide means for cleanly cutting off stripe ends and applying broken lines.

For new 90 mil application, equipment shall consist of an extrusion die or a ribbon gun that simultaneously deposits and shapes lines at a thickness of 90 mils or greater on the pavement surface. When restriping 90 mils thickness onto existing thermoplastic markings, only a ribbon gun shall be used.

For 40 mils, only a spray application will be allowed.

732.03.2 Weather Limitations: Do not apply markings within 12 hours after rain, if moisture is present, or when the surface temperature or ambient temperature is below 50°F.

732.03.3 Cleaning of Surfaces: Clean surfaces, including ramps and gore areas, on which markings are to be applied of materials that may reduce adhesion of the thermoplastic marking materials to the pavement. Clean by blast cleaning or other approved methods, which do not damage the surface. Blast cleaning equipment must have positive cutoff controls. Keep surfaces clean and dry until placement of markings.

732.03.4 Removal of Existing Markings:

732.03.4.1 40 Mil Thickness: Remove existing thermoplastic markings that are flaking or peeling prior to placement of thermoplastic. Remove flaking or peeling material by mechanical sweeper or wire brush to the satisfaction of the engineer prior to thermoplastic application. After markings are removed, properly dispose of striping debris and residue.

732.03.4.2 90 Mil Thickness: Before placement of 90 mil or greater thermoplastic on portland cement concrete, remove existing thermoplastic markings regardless of condition. Apply a two part sealer before placement of any temporary paint or permanent thermoplastic. Asphalt sections do not require removal of thermoplastic unless otherwise noted on the plans. After markings are removed, properly dispose of striping debris and residue.

732.03.4.3 Intersection Markings, Legends and Symbols: Remove existing markings from the pavement surface. Apply 125 mils of new thermoplastic markings.

732.03.4.4 Preformed Plastic Markings (Tape): Remove existing markings to the pavement surface before applying the preformed plastic markings (tape).

Remove markings by methods that will not damage the pavement or bridge deck. After removing the markings, pick up and dispose of the debris and residue within 24 hours. Removal shall be to such extent that 75 percent of the pavement surface or bridge deck under the markings is exposed. At the end of each day's operations, the engineer may direct that temporary pavement markings complying with Section 713 be used in areas where

existing markings have been removed and new markings not placed. Satisfactorily remove temporary pavement markings prior to resuming thermoplastic marking operations.

Remove all markings made in error or not conforming to the traffic operation in use to the satisfaction of the engineer. Do not obliterate markings by painting with asphalt binder or other material.

732.03.5 Application of Surface Primer: When applying 90 mil thermoplastic, use a two component primer sealer prior to placement of thermoplastic materials on portland cement concrete surfaces and oxidized asphalt unless otherwise directed by the engineer.

When applying 40 mil thermoplastic, use a single component surface primer on portland cement concrete surfaces unless otherwise directed by the engineer.

When applying preformed thermoplastic, use primer as recommended by the manufacturer. Do not allow traffic over primed areas before applying thermoplastic.

732.03.6 Application of Markings: Install material in specified widths from 4 inches to 24 inches. Finished lines shall have well defined edges and be free of waviness. Measurements will be taken as an average through any 36-inch section of line. Offset longitudinal lines approximately 2 inches from longitudinal joints. A tolerance of + 1/2 inch and -1/8 inch from the specified width will be allowed, provided the variation is gradual. Lines should be squared off at each end without excessive mist or drip. Transverse variations from the control device up to 1 inch will be allowed provided the variation does not increase or decrease at the rate of more than 1/2 inch in 25 feet. Remove lines not meeting these tolerances and replace at no cost to the Department.

732.03.6.1 Thermoplastic Markings: For extruded or ribbon gun applied markings, the thickness of material, not including drop-on beads, shall not be less than 90 mils for lane lines, edge lines, black contrast, gore markings, and no less than 125 mils for crosswalks, stop lines, words, and symbol markings.

For spray applications the thickness of material, not including drop-on beads, shall not be less than 40 mils.

Apply glass beads to the molten surface of completed stripes by either a single drop or a double drop application depending on the thickness of the thermoplastic striping. Glass beads shall be uniformly distributed to ensure that the full width of the line is visible at night. For a 40 mil single drop application, the contractor has discretion on which beads to use in order to meet the retroreflectivity requirements. For the first drop of a 90 mil double

drop application, use Type 4 beads at a minimum rate of 211 pounds per mile based on a 4-inch solid line. The type of bead for the second drop is at the contractor's discretion; however, a smaller bead is typical. Black thermoplastic pavement markings require skid-resistant filler in lieu of glass beads.

732.03.6.2 Preformed Plastic Markings: Apply preformed plastic markings in accordance with the manufacturer's recommendation.

732.03.7 Field Testing of Roadway Markings: The contractor and the Department will field test the pavement markings in accordance with 1015.10, 1015.11, and Table 732-1. Failure to meet these requirements will require the contractor to replace the portion of the material shown to be out of specification as directed by the engineer.

Take initial readings within 30 days of application. Initial readings taken after 30 days must meet the same requirements as initial readings. Any late readings submitted after the 30 days will be considered initial readings. Take the initial retroreflectivity readings with a DOTD inspector present. Upon completion of testing, the DOTD inspector will immediately take possession of a copy of the retroreflectivity readings in either a hard copy ($8^1/_2$ inches x 11 inches) or electronic format on a USB drive, as noted below. Additionally, provide documentation to the Department that the instrument has been calibrated in accordance with the manufacturer's requirements, including the required annual factory calibration.

The Department reserves the right to inspect the striping and take additional readings six months to one year after the date of installation for the one year warranty.

For each material type, take a different set of readings in accordance with Table 732-1. Provide the data to the Department electronically in Microsoft Excel® (xls) format downloaded from the reflectometer data. Each spreadsheet shall have a header that states all of the following:

1. Project number;
2. Date material installed;
3. Type of material installed;
4. Interstate: Specify the route and direction and show the beginning mile-point to ending mile-point, of material installed; and,
5. State Route: Specify the route and direction. Also specify X number mile from intersection to X number mile from intersection, of material installed. (*Ex.* Route US 61 South; 0.10 Mile South of Old Hammond Highway to 0.2 Mile South of I-12).

The format for the excel spreadsheet shall be (description, date, and reading). In the description cell, the format shall be Route (*i.e.*, LA, US, or

I), Direction (*i.e.*, N, S, E, or W), Mile Point, and Color (W or Y).

Examples: LA 115; W; 23; Y
I-10; S; 4; W

The project engineer will input data into the striping input form.

Table 732-1
Field Testing of Plastic Pavement Markings

Length of Roadway (Segment)	Minimum Required Readings
Less than 1 mi	10 evenly spaced readings per line[a, c]
1 mi to 6 mi	10 evenly spaced readings per line for each 1-mi segment [a, c]
Greater than 6 mi	5 evenly spaced readings per line for each 1-mi segment [b, c]
Stop Bars, Cross Walks, Chevrons, Hash Marks, and Legends and Symbols	Visual nighttime inspection only
8-inch Lines (Parallel to Roadway)	5 readings per line [b, c, d]

[a] Report average of 10 readings per line segment.
[b] Report average of 5 readings per line segment.
[c] Additional readings shall be taken if a defect is noticed by the engineer.
[d] Only initial readings are required.

General Notes:

1. Take readings on each line and color separately except as indicated below.
2. Adjacent lines applied at the same time are considered one line. Alternate readings between each line.
3. Take readings on dry, clean roadways.
4. Collect data in the direction lines were applied except for yellow centerlines on two lane roadways. For yellow centerlines on two lane roadways, collect data against the direction lines were applied.
5. On broken lines (skip striping), no more than two readings shall be taken per stripe, with readings 20 inches from ends of marking. This does not apply if using a vehicle mounted mobile unit.
6. Acceptance will be based on the average of each set of readings for each line segment.
7. Failure of the average reading for any segment to meet the specified minimum values will require replacement, corrective action or be subject to payment adjustments specified in Table 732-2.
8. Limits of replacement will be determined by the engineer.
9. Aggregate Surface Course projects will not be tested for retroreflectivity, but will be visually inspected at night for acceptance by the engineer.
10. No reflectance readings are required for black, red, or blue thermoplastic pavement markings.
11. Glass beads shall be uniformly distributed to ensure that the full width of the line is visible at night.

732.03.8 Guarantee: All work performed in accordance with this section shall be guaranteed in accordance with 104.05.

732.04 MEASUREMENT.

732.04.1 Plastic Pavement Striping: Plastic striping will be measured by the linear foot or mile, as specified. When not including a bid item for wider markings, the Department will measure the quantity by converting the actual length and width of lines installed to an equivalent length of the normal width line on that section of roadway.

732.04.1.1 Linear Foot: Measurement will be made by the linear foot of striping, exclusive of gaps.

732.04.1.2 Mile: Measurement will be made by the mile of single stripe. No deduction will be made for standard broken-line gaps; however, deductions will be made for the length of other gaps or omitted sections.

732.04.2 Plastic Pavement Legends and Symbols: Plastic legends and symbols will be measured per each legend or symbol. Each symbol includes all letters, lines, bars, or markings necessary to convey the message at each location.

732.04.3 Removal of Existing Markings: For two-lane highways, markings will be measured by the linear mile of full roadway width including shoulders. For multilane highways and ramps, the markings will be measured by the linear mile of the full roadway width including shoulders for each direction of travel.

Removal of pavement markings will include removal of lane lines, edge lines, gore markings, legends, symbols, raised pavement markers, and disposal of debris.

732.05 PAYMENT. Payment for the completed and accepted quantities of plastic pavement markings and removal of existing markings will be made at the contract unit prices, which include all labor, materials, equipment, and incidentals necessary to complete the work.

Table 732-2
Thermoplastic Payment Adjustment for Minimum Initial Retroreflectivity

Contract Unit Price [1], %	White (mcd\lux\sq m)		Yellow (mcd\lux\sq m)	
	40 mil	90 mil	40 mil	90 mil
100	250	375	175	250
90	230	360	165	230
80	220	340	155	220
50	200	325	150	200
Restripe	<200	<325	<150	<200

[1]The payment requirements are based on the project total average of all test segments (on a route) for initial reading for white and yellow separately in accordance with Table 732-1. Payment adjustments will be based on each identifiable route within the contract.

Payment will be made under:

Item No.	Pay Item	Pay Unit
732-01	Plastic Pavement Striping (____inch Width)	Linear Foot
732-02	Plastic Pavement Striping (Solid Line) (____inch Width)	Linear Mile
732-03	Plastic Pavement Striping (Broken Line) (____inch Width)	Linear Mile
732-04	Plastic Pavement Legends and Symbols (Type)	Each
732-05	Removal of Existing Markings	Linear Mile

Section 739
Hydro-Seeding

739.01 DESCRIPTION. Prepare seed beds and sow grass seed utilizing hydro-seeding equipment and methods in order to establish a turf grass cover to areas designated on the plans or as directed.

739.02 BED PREPARATION. Prepare seed beds in accordance with 717.04.

739.03 HYDRO-SEEDING GENERAL. Hydro-seeding consists of mixing and applying seed, commercial fertilizer, lime, polyacrylamide tackifier, and mycorrhizal inoculum with paper or wood fiber and water. Uniformly spread seed and commercial fertilizer over the area at the rates specified in Table 717-1 and Table 718-1. Mix and apply paper or wood fiber with the seed in accordance with the manufacturer's recommendations and as approved by the engineer. Fertilizer and lime may be included in the seeding slurry for application during hydro-seeding operations. All of these materials may be included in a single manufacturer's hydro-seeding system. Use Approved Materials List systems.

Determine the application rate for pellet-inoculated seed by using the seed mass exclusive of inoculant materials.

Mix the materials with water according to the manufacturer's specifications. Mix the materials in a tank with a built-in continuous agitation system with sufficient operating capacity to produce a homogeneous mixture, and with a discharge system that will apply the mixture at a continuous and uniform rate. Provide a tank with a minimum capacity of 962 gallons. The engineer may authorize use of equipment of smaller capacity if it is demonstrated that the equipment is capable of performing all operations satisfactorily.

A dispersing agent may be added to the mixture provided evidence is furnished showing that the additive will not affect germination. Do not use any material considered detrimental, as determined by the engineer.

Do not apply any mixture containing polyacrylamide tackifier during rainy weather, or when soil temperatures are below 41°F, or if the wind speed is above 20 miles per hour. Do not permit pedestrian traffic or equipment to enter areas where hydro-seeding has been applied.

Prior to planting, the engineer will contact the Department's Roadside Development Coordinator to select the varieties of seed to be used.

739.04 MEASUREMENT AND PAYMENT. No measurement of area will be made for payment. Hydro-seeding is considered incidental to the work.

Section 740
Construction Layout

740.01 DESCRIPTION. This section sets forth requirements for all construction layouts. Establish lines and grades, take all cross-sections, and stake out the construction work in accordance with these specifications, plan details, and as directed. Construction layout also includes, but is not limited to, the layout of pavement striping and raised pavement markers, setting of line and grade for construction of superelevated curves or other applicable work items, and assisting in the coordination of utility relocation activities to ensure that the placement of relocated facilities will not conflict with required construction.

740.02 CONSTRUCTION REQUIREMENTS. Establish all lines and grades and stake out all project work, including sufficient vertical and horizontal control points for utility relocations for use by the Department and others.

The project survey control and horizontal alignment are based on the Louisiana State Plane Coordinate System. The construction plans and/or right-of-way map depicts the coordinates and datum of sufficient survey control points to establish or re-establish horizontal control throughout the length of the project. Employ such methods as approved by the project engineer for the location of the project alignment and other necessary survey control points in accordance with currently acceptable surveying standards and practices. When required, the Department will also provide one bench mark on or near the project for vertical control. Verify the values of any intermediate bench marks shown on the plans, by checking against the bench mark established by the Department for vertical control.

Employ qualified engineering and surveying personnel experienced in layout and construction of highways and bridges to correctly establish and keep complete and comprehensive records (field books or approved electronic files) of all lines and grades necessary from initial layout to final acceptance. Provide sufficient qualified staff, of at least one employee, on site during utility relocation periods. Provide any necessary survey work to ensure there are no utility conflicts with required construction. Provide daily documentation of utility relocation activities for incorporation into the project diaries.

The contractor shall be liable for the accuracy of the initial layout and all subsequent alignment and elevations and shall, at no additional pay, rebuild,

repair or make good any portion of the work found to be incorrectly positioned either horizontally or vertically at any time before final acceptance. Notify the engineer immediately of any apparent errors in the plans. Compute and provide template grades to the engineer. In order to obtain pipe order lengths, provide the appropriate grades to the engineer two weeks in advance of the work.

Numbered notebooks for recording of all lines and grades will be provided by the Department and shall be properly indexed and cross referenced by the contractor before return to the engineer for submittal with the final estimate. Computer generated printouts will be allowed when approved.

Set stationing for overlay projects using an approved measuring device that is accurate to 0.1 percent. Place stakes every 100 linear feet and maintain throughout construction.

For pavement preservation type projects, the contractor will be responsible for recording the location of all existing pavement markings and laying out the required final markings subject to the approval of the Project Engineer.

Perform the layout of striping, raised pavement markers, and signs by methods approved by the engineer prior to placement.

740.03 MEASUREMENT.

Measurements for determination of pay quantities will be made by the Department. Construction layout and utility oversight and coordination will be measured per lump sum, which will include all labor, materials, tools, equipment, and incidentals required to complete the work.

No changes in the lump sum contract price will be made for minor additions or deletions to the scope of work.

740.04 PAYMENT.

Payment for construction layout, and utility oversight and coordination will be made at the contract lump sum price in accordance with Table 740-1 and Table 740-2, respectively.

Table 740-1
Construction Layout Payment Schedule

Percent of Total Contract Amount Earned	Allowable Percent of Lump Sum Price for Construction Layout
Staffed	25
25	50
50	80
75	95
100	100

Table 740-2
Utility Oversight and Coordination Payment Schedule

Percent of Utility Relocation Complete	Allowable Percent of Lump Sum Price for Construction Layout
Staffed	25
25	50
50	65
75	80
100	85
Project Completion	100

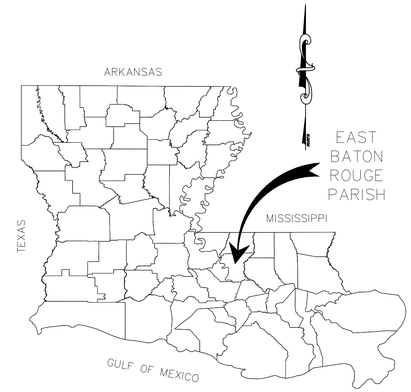
Payment will be made under:

Item No.	Pay Item	Pay Unit
740-01	Construction Layout	Lump Sum
740-02	Utility Oversight and Coordination	Lump Sum

JAMES L. HUNT STREET
ROADWAY IMPROVEMENT
SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE

EAST BATON ROUGE PARISH, LOUISIANA

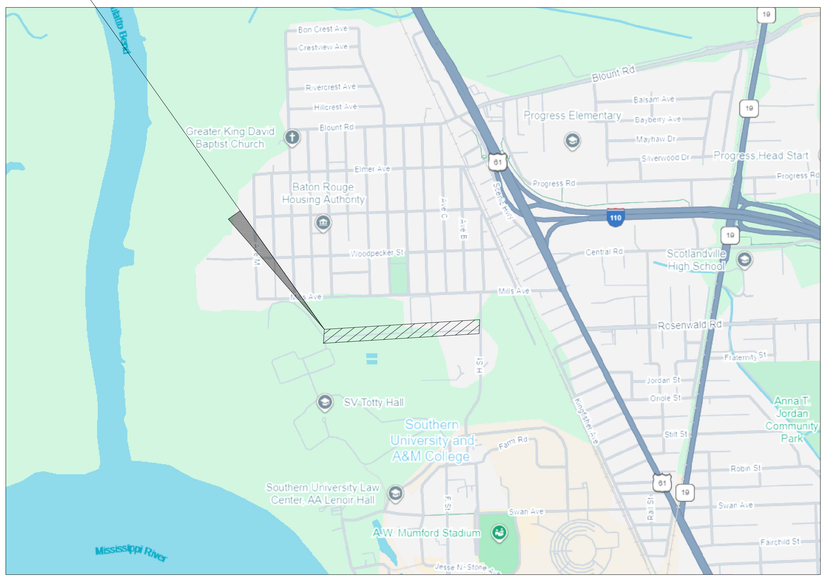
PLANS PREPARED BY:
WTAA ENGINEERS, INC
PROJECT No. WTAA-24103



VICINITY MAP

INDEX TO SHEETS

PROJECT LOCATION
JAMES L. HUNT ST.



LAYOUT MAP
N.T.S.

C:\Users\wroy\appdata\local\temp\AcPublish_21936\Civil Set 1-28-25.dwg Jan 30, 2025 - 3:22pm Plot Scale: 1:0 Plotted By: wroy

WTAA ENGINEERS, LLC — SINCE 1979 — CERTIFIED & LICENSED ENGINEERING CONSULTANTS

REVISIONS		
DATE:	REMARKS:	APP'D

SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

TITLE SHEET

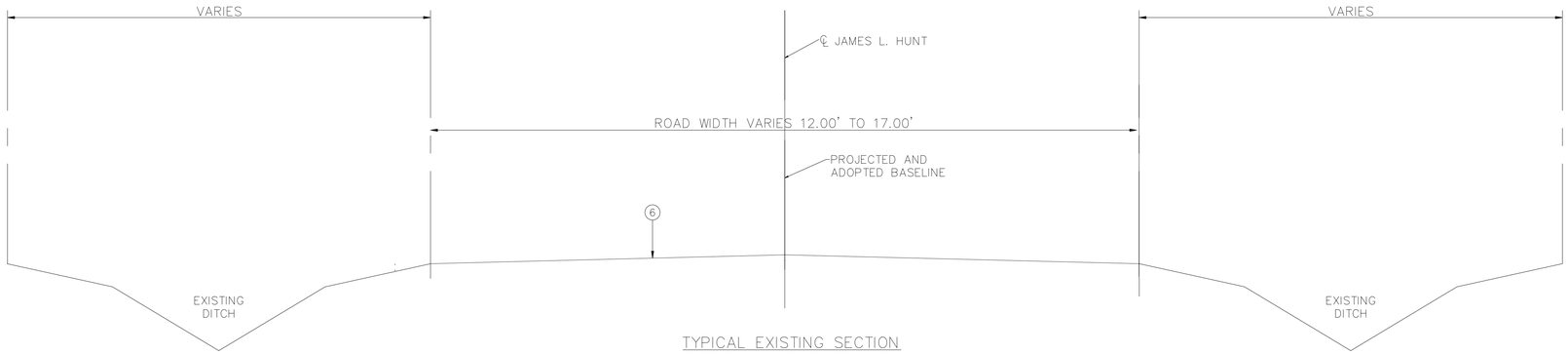
WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
PH: 225-383-0822

DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	N/A	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

SHEET NO.
1



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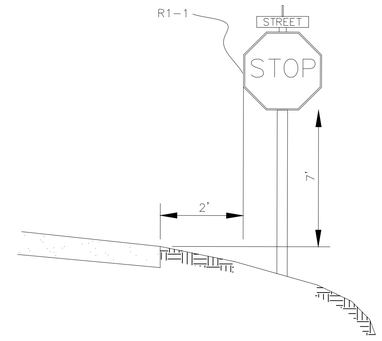

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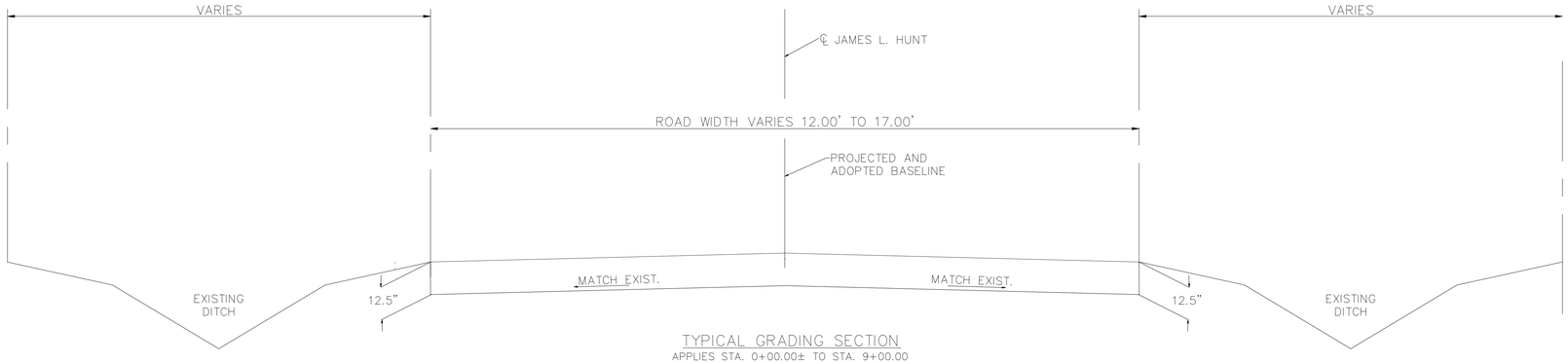

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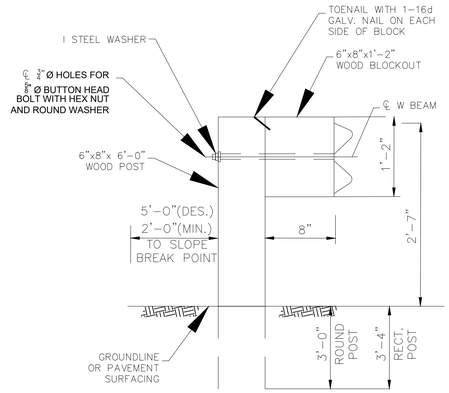

TYPICAL GUARD DETAIL
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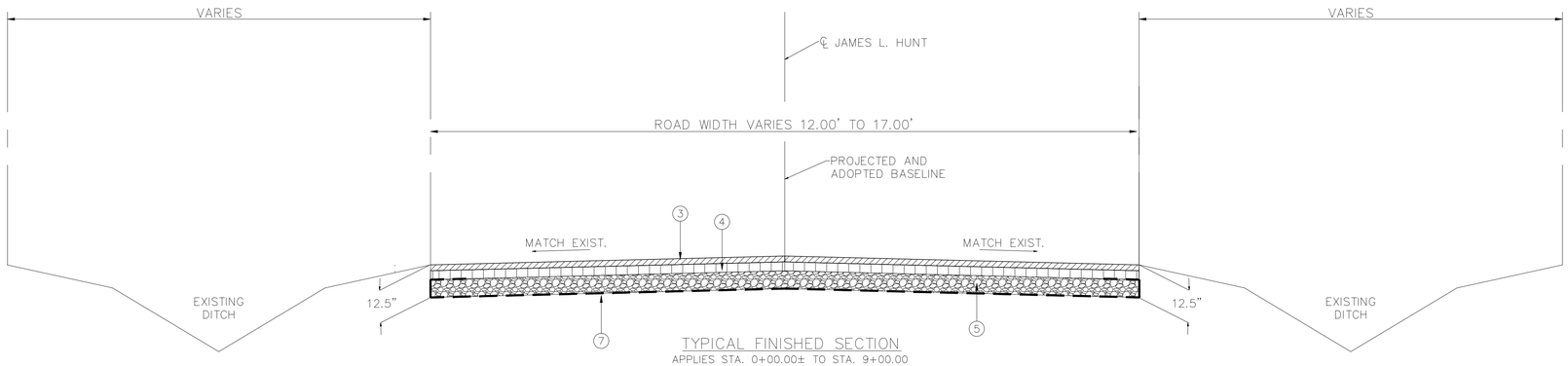

TYPICAL FINISHED SECTION
APPLIES STA. 0+00.00± TO STA. 9+00.00

LEGEND:

1. REQUIRED MILLING TO 2" DEPTH
2. EXISTING 4" ASPHALTIC CONCRETE
3. TYPE III ASPHALTIC CONCRETE WEARING COURSE (2"THICK)
4. TYPE III ASPHALTIC CONCRETE BINDER COURSE (2"THICK)
5. 8.5" CLASS II BASE COURSE (STONE)
6. EXISTING GRAVEL/DIRT SURFACE
7. GEOTEXTILE FABRIC

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ROADWAY CONSTRUCTION

TYPICAL SECTION

WTAA ENGINEERS
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2622 NORTH ST.
BATON ROUGE,
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PH:1-833-300-9822
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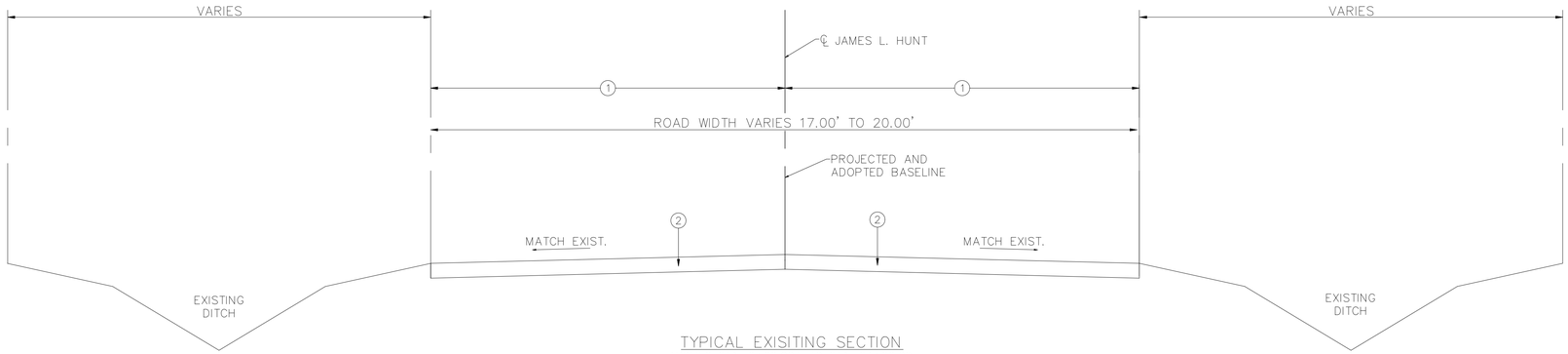
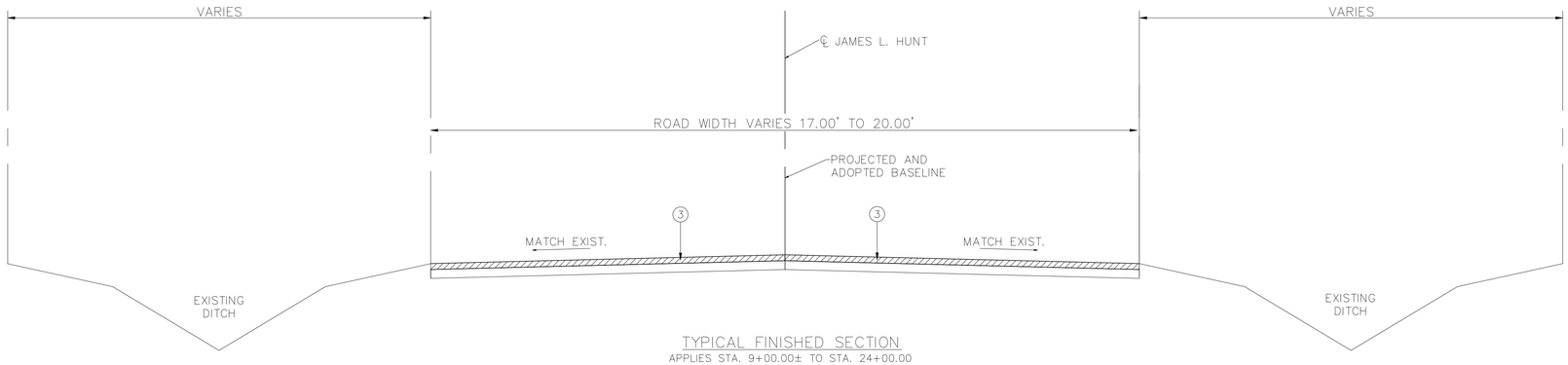
SHEET NO.
2



TYPICAL EXISITING SECTION

APPLIES STA. 9+00.00± TO STA. 24+00.00



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SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

TYPICAL SECTION

WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES
2622 NORTH ST.
BATON ROUGE,
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PH:1-833-300-9822
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DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
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STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 26222
REGISTERED
PROFESSIONAL ENGINEER
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CIVIL ENGINEERING
1-31-2025

SHEET NO.
3

GENERAL NOTES:

1. THE CONTRACTOR MUST VERIFY ELEVATIONS OF ALL EXISTING UTILITIES AND INVERTS THAT ARE WITHIN THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ANY EXISTING UTILITIES CROSSING A PROPOSED UTILITY (DRAIN, SEWER, WATER, GAS, ELECTRIC, ETC.) WILL NOT CONFLICT, PRIOR TO INSTALLING NEW UTILITY. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IN A TIMELY MANNER TO AVOID ANY DELAYS CAUSED BY THE UTILITY ADJUSTMENT.

2. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A COMPLETE SET OF AS-BUILT DRAWINGS SHOWING CHANGES FROM THE ORIGINAL DRAWINGS.

3. THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT UNNECESSARY DUST. SURFACES SUBJECT TO CREATING DUST SHALL BE KEPT MOIST BY APPLICATION OF WATER OR OTHER CHEMICAL DUST SUPPRESSANT. DUSTY MATERIALS IN TRANSIT SHALL BE COVERED TO PREVENT BLOWING.

4. THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO AVOID UNNECESSARY NOISE APPROPRIATE FOR THE AMBIENT SOUND LEVELS IN THE AREA. ALL CONSTRUCTION MACHINERY AND VEHICLES SHALL BE EQUIPPED WITH PRACTICAL SOUND MUFFLING DEVICES AND OPERATED IN A MANNER TO CAUSE THE LEAST NOISE, CONSISTENT WITH THE EFFICIENT PERFORMANCE OF THE WORK.

5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE CITY/PARISH A COMPLETE CONSTRUCTION SIGNAGE, TRAFFIC MAINTENANCE AND PUBLIC SAFETY PLAN, IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS, FOR REVIEW AND APPROVAL. IN THIS PLAN THE CONTRACTOR SHALL SEEK APPROVAL FOR ANY TRAFFIC RELATED PLAN EXCHANGE, INCLUDING REMOVAL, RELOCATION OR ADDITION OF TRAFFIC CONTROL DEVICES BEFORE OR DURING THE COURSE OF CONSTRUCTION.

6. ALL TRAFFIC CONTROL SIGNS, BARRICADES, WARNING LIGHTS, DEVICES, METHODS AND MEASURES SHALL COMPLY WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION) AND SHALL BE INSTALLED AS INDICATED IN THE TRAFFIC CONTROL PLAN AND APPROVED BY THE OWNER.

7. ALL TRAFFIC CONTROL SIGNS/DEVICES/PAVEMENT MARKINGS THAT HAVE BEEN MOVED, ALTERED OR DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL POSITION, CONDITION AND ORIENTATION BY THE CONTRACTOR ONCE WORK IS COMPLETE IN THE IMMEDIATE AREA OF CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT ALL LIABILITIES RESULTING FROM ALTERATION AND REMOVAL OF TRAFFIC CONTROL SIGNS/DEVICES/MARKINGS.

8. THE CONTRACTOR SHALL PROTECT PROPERTY AND IMPROVEMENTS ADJACENT TO PROJECT WORK FROM DAMAGE. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE PROPERTY DAMAGED AS A RESULT OF HIS CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE. ALL REPAIR WORK SHALL BE TO THE SATISFACTION OF THE OWNER.

9. THE CONTRACTOR SHALL REGRADE ALL AREAS AFFECTED BY CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE AND PREVENT PONDING. ALL WORK SHALL BE IN A WORKMANLIKE MANNER ACCEPTABLE TO THE OWNER.

10. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING AND/OR REMOVING ALL DIRT AND DEBRIS FROM THE STREET FOR ALL CONSTRUCTION SITES DURING THE CONTRACT PERIOD AND BEFORE DEMOBILIZING. WHEN WORK IS COMPLETE ON A SEGMENT OF PIPE OR WORK WILL NOT BE PERFORMED THE FOLLOWING CALENDAR DAY, ALL EQUIPMENT, MATERIALS AND SUPPLIES SHALL BE MOVED FROM THE CONSTRUCTION SITE TO APPROVED LAYDOWN AREAS. ALL EQUIPMENT, MATERIALS AND SUPPLIES SHALL BE CLEANED UP AND MOVED FROM THE CONSTRUCTION SITE TO APPROVED LAYDOWN AREAS BY THE END OF THE WORK WEEK AND THE END OF THE WORK DAY PRIOR TO HOLIDAYS. THE CONTRACTOR SHALL AT ALL TIMES CONDUCT HIS OPERATION AS TO ENSURE THE LEAST INCONVENIENCE TO THE GENERAL PUBLIC, ADJACENT PROPERTY OWNERS AND BUSINESSES. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS TO ALL PROPERTIES, DRIVEWAYS AND TRAFFIC FLOW IN ROADWAYS AT ALL TIMES.

11. ALL GRASS AREAS DISTURBED OR AFFECTED BY CONSTRUCTION SHALL BE SEEDED, WATERED AND MAINTAINED FOR 30 CALENDAR DAYS OR UNTIL FINAL ACCEPTANCE, WHICHEVER IS LONGER.

12. THE CONTRACTOR SHALL PROTECT ALL TREES, SHRUBBERY AND PLANTS FROM DAMAGE, WHICH ARE NOT SPECIFICALLY DESIGNATED HEREIN TO BE REMOVED. THE CONTRACTOR SHALL NOT BREAK OR DAMAGE ROOTS BY PULLING THEM WITH DIGGING MACHINES. THE CONTRACTOR SHALL REPLACE ANY DAMAGED TREES/SHRUBBERY/PLANTS AT HIS OWN COST.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES THAT OCCURS DURING CONSTRUCTION AND SHALL IMMEDIATELY REPORT ANY DAMAGE TO THE AFFECTED UTILITY ENTITIES AND THE ENGINEER. ANY DAMAGED UTILITY SERVICES SHALL BE PROMPTLY REPAIRED AND SHALL NOT REMAIN OUT OF SERVICE OVERNIGHT. ALL UTILITY REPAIR COSTS SHALL BE BORNE BY THE CONTRACTOR.

14. EXACT DEPTH OF WATER, U/G ELECTRIC AND GAS LINES ARE UNKNOWN. CONTACT LOUISIANA ONE-CALL AND UTILITY ENTITIES TO DETERMINE EXACT LOCATION AND DEPTH PRIOR TO EXCAVATION. USE EXTREME CAUTION DURING EXCAVATION.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN TRAFFIC THROUGH MOVEMENT FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MUTCD, PART 6.

GRADING AND DRAINAGE NOTES :

1. CONTRACTOR SHALL VERIFY TOP ELEVATIONS OF ALL DRAINAGE STRUCTURES IN FIELD AND SET FLOW LINE INVERT ELEVATIONS TO REFLECT DESIGN INDICATED IN CONSTRUCTION PLANS.

2. CUT OR FILL SLOPES SHOULD NOT BE STEEPER THAN 3(H):1(V).

3. ALL 3:1 SLOPES MUST BE STABILIZED WITH MATTING, MULCH AND OR PLANT MATERIAL TO ENSURE THAT RUNOFF AND SILT DOES NOT LEAVE PROJECT SITE.

4. ALL EXCAVATED UNPAVED AREAS SHALL BE RESTORED BY SODDING OR HYDROSEEDING IN ACCORDANCE WITH THE SPECIFICATIONS.

5. ADJUST PAVEMENT AND/OR CURB ELEVATIONS AS NECESSARY TO ASSURE SMOOTH FIT AND CONTINUOUS GRADE WITH EXISTING.

6. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES AND NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.

7. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.

8. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.

9. PROPOSED SPOT GRADES ARE SHOWN TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

10. ALL UN-SURFACED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH STANDARD SPECIFICATIONS UNTIL A HEAVY STAND OF GRASS IS OBTAINED.

11. CONSTRUCTION SHALL COMPLY WITH ALL GOVERNING CODES AND BE CONSTRUCTED TO SAME.

12. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL ON SITE AT ALL TIMES BY WATERING SITE AS OFTEN AS NEEDED.

13. CONTRACTOR SHALL FIELD VERIFY ELEVATIONS OF ADJACENT PROPERTIES TO SITE. IF EXISTING GRADES DO NOT MATCH THOSE SHOWN ON THIS PLAN, CONTRACTOR SHALL NOTIFY OWNERS PROJECT MANAGER.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TRAFFIC CONTROL NECESSARY FOR DRIVE DEMOLITION/CONSTRUCTION.

15. ALL HANDICAP ACCESSIBLE RAMPS, SIDEWALKS, ROUTES, ETC. MUST BE CONSTRUCTED IN ACCORDANCE WITH FEDERAL, STATE, CITY STANDARDS.

16. CONTRACTOR SHALL FIELD VERIFY ELEVATIONS OF ADJACENT PROPERTIES TO SITE. IF EXISTING GRADES DO NOT MATCH THOSE SHOWN ON THIS PLAN, CONTRACTOR SHALL NOTIFY OWNERS PROJECT MANAGER.

17. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TRAFFIC CONTROL NECESSARY FOR DRIVE DEMOLITION/CONSTRUCTION.

19. THE CONTRACTOR SHALL BALL AND FLUSH ALL SEWER AND STORM DRAIN LINES IN THE PRESENCE OF THE ENGINEER AND OWNER.

20. THE CONTRACTOR SHALL AT ALL TIMES, PROVIDE AND MAINTAIN EMERGENCY ACCESS TO THE PROJECT SITE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE PROTECTION AGENCY HAVING JURISDICTION OVER THE PROJECT SITE.

21. THE CONTRACTOR SHALL ADJUST ALL UTILITY BOXES, MANHOLE COVERS, DRAIN INLETS, VALVE COVERS, ETC TO MATCH FINISH GRADE IN THE CONSTRUCTION AREA UNLESS OTHERWISE APPROVED BY THE ENGINEER.

22. THE CONTRACTOR SHALL EXCAVATE FOR AND EXPOSE EXISTING UNDERGROUND UTILITIES WHERE CONNECTIONS ARE TO MADE PRIOR TO ANY CONSTRUCTION. SHOULD ANY ADJUSTMENTS IN LINE OR GRADE BE NECESSARY, THE CONTRACTOR SHALL BRING IT TO THE ATTENTION OF THE ENGINEER.

23. THE CONTRACTOR SHALL COORDINATE UNDERGROUND UTILITY CONSTRUCTION IN SUCH A MANNER AS TO PREVENT ANY CONFLICT WHERE UTILITY LINES CROSS.

24. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE NOTED.

25. ALL DRAINAGE PIPES SHALL HAVE A MIN SLOPE OF 0.15% UNLESS OTHERWISE NOTED.

26. CONCRETE MIX FOR CURBING SHALL BE THE SAME AS THAT OF THE ADJACENT ROADWAY.

BENCHMARK INFORMATION :

TBM-1:

COORDINATE:

LONGITUDE W 91° 11' 26.19"

LATITUDE N 30° 31' 52.84"

ELEVATION: 62.977'

DESCRIPTION: ON CONCRETE POST OF SIGN "MEAT PROCESSING PLANT"

DEMOLITION NOTES :

1. CONTRACTOR SHALL REMOVE CONCRETE WITHOUT INTERRUPTION TO BOTH LANES OF TRAFFIC. ONE LANE OF TRAFFIC SHALL REMAIN OPERATIONAL AT ALL TIMES.

2. CONTRACTOR SHALL LOCATE AND IDENTIFY ALL EXISTING UTILITIES THAT ARE TO REMAIN AND PROTECT THEM FROM DAMAGE. CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE UTILITY COMPANIES FOR PROPER IDENTIFICATION AND MARKING PRIOR TO ANY DEMOLITION ACTIVITIES.

3. DEMOLITION WORK OF EXISTING DRIVEWAYS SHALL REMAIN WITHIN THE R.O.W. LIMITS.

4. ALL TREES ARE PROTECTED UNDER ORDINANCE AND PRIOR TO REMOVAL, TRIMMING OR BEFORE POSSIBLE DAMAGE TO ANY TREES, CONTRACTOR IS TO INFORM THE ENGINEER THAT HE HAS OBTAINED APPROPRIATE TREE PERMITS. ALL DEBRIS REMOVED MUST BE DISPOSED OF IN ACCORDANCE TO LOCAL, STATE AND FEDERAL LAWS.

5. CONTRACTOR MUST PROTECT ALL LANDSCAPING AND OTHER FEATURES DESIGNATED TO REMAIN AND REPLACE SUCH ITEMS IF DISTURBED DURING DEMOLITION.

6. CONTRACTOR SHALL CONDUCT ALL DEMOLITION OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC AND OR PRIVATE ACCESSES AND FACILITIES.

7. DEPRESSIONS AND VOID AREAS CAUSED BY DEMOLITION WORK ARE TO BE FILLED TO SUBGRADE ELEVATION TO AVOID WATER PONDING.

8. ALL CONSTRUCTION AND OR DEMOLITION DEBRIS SHALL BE DISPOSED OF OFFSITE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

9. CONSTRUCTION PLANS MAY NOT SHOW ALL REQUIRED DEMOLITION. DEMOLITION CONTRACTOR SHALL CONDUCT A THOROUGH SITE INVESTIGATION AND INCLUDE ALL DEMOLITION WORK REGARDLESS OF WHETHER OR NOT IT IS SHOWN ON DRAWINGS.

STORMWATER POLLUTION PREVENTION NOTES :

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHT OF WAYS. AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS HALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.

2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER THEIR AGENTS DUE TO UNFORSEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED.

3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

4. AT A MINIMUM, THE CONTRACTOR OR THEIR AGENT SHALL INSPECT ALL DISTURBED AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPS WEEKLY, PRIOR TO A FORECASTED RAIN EVENT AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT. THE CONTRACTOR OR AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY.

5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

CONSTRUCTION NOTES:

1. EXISTING UTILITY LOCATIONS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. BEFORE ANY EXCAVATION, THE CONTRACTOR SHALL CALL LOUISIANA ONE CALL FOR LOCATION OF UTILITIES.

2. EXISTING PAVED DRIVES OR SHOULDERS TO BE SAW-CUT AS NEEDED TO WIDEN ROAD. ALL MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF PROPERLY.

3. JOIN EXISTING PAVEMENT AT THE DIRECTION OF THE PROJECT ENGINEER.

4. FIELD DENSITY AFTER ROLLING OF ALL ASPHALT CONCRETE PLACED ON THIS PROJECT SHALL BE A MINIMUM OF 95 PERCENT RELATIVE COMPACTION.

5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE WITHIN PROJECT LIMITS THROUGHOUT CONSTRUCTION TO THE SATISFACTION OF THE PROJECT ENGINEER.

6. ALL RAP WILL BECOME THE PROPERTY OF THE CONTRACTOR.

7. ALL MAILBOXES TO BE REMOVED AND REPLACED LIKE IN KIND.

8. ALL POSSIBLE CONFLICTS MUST BE HAND DUG TO AVOID HITTING UTILITY LINES.

9. TEMPORARY MAINTENANCE AGGREGATE, IF REQUIRED, SHALL BE AT NO DIRECT PAY.

10. GAS LINES MUST REMAIN UNINTERRUPTED. OWNERS PRIOR TO INTERRUPTION OF GAS LINE AT LEAST 5 DAYS NOTICE.

11. AT POSSIBLE UTILITY CONFLICT AREAS, TRENCH WIDTHS CAN BE NARROWED.

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SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

GENERAL NOTES

WTAA ENGINEERS — ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
PH: 225-383-0822

DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	N/A	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
1-31-2025

SHEET NO. 4

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

WTAA ENGINEERS, LLC
SINCE 1979
CERTIFIED & LICENSED ENGINEERING CONSULTANTS

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SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

OVERALL SITE

WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES
2622 NORTH ST.
BATON ROUGE,
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PH:1-833-300-9822
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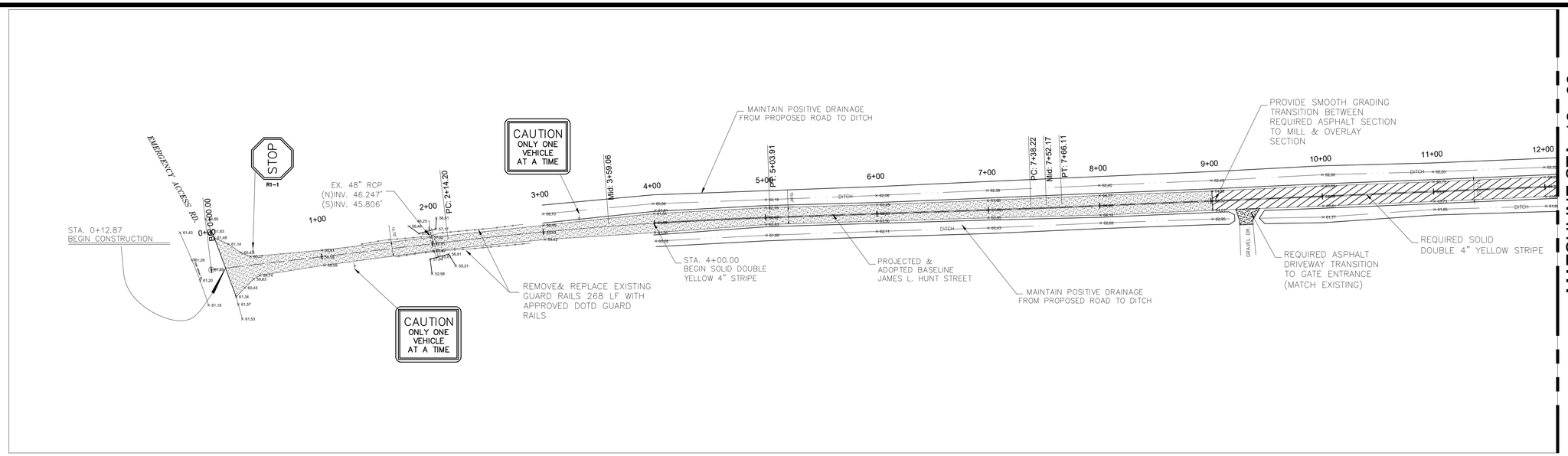
DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	1"=80'	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

SHEET NO.
5



LEGEND

X 95 EXISTING ELEVATION

EXISTING DITCH LIMITS

EXISTING PIPE

REQUIRED ASPHALT PVMT.

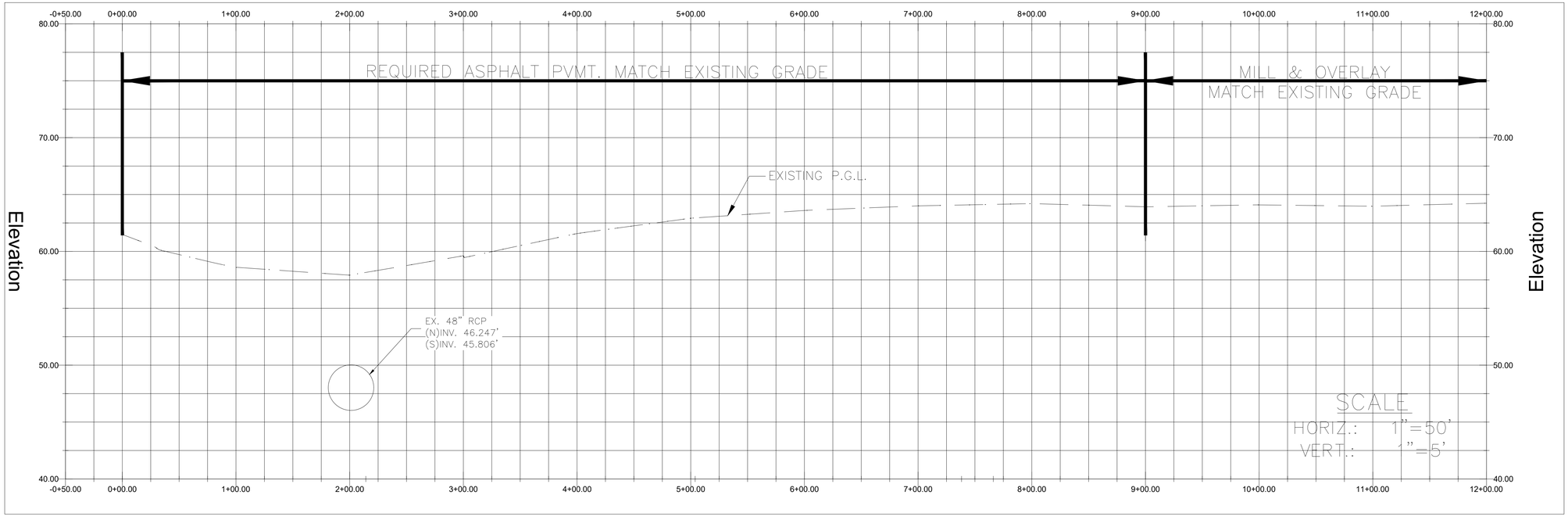
ASPHALT MILL & OVERLAY

GRAPHIC SCALE

20 0 10 50 100 200

(IN FEET)

1 inch = 50 ft.



WTAA ENGINEERS, LLC. SINCE 1979 CERTIFIED & LICENSED ENGINEERING CONSULTANTS

REVISIONS		
DATE:	REMARKS:	APP'D

SOUTHERN UNIVERSITY DEPARTMENT OF AGRICULTURE ROADWAY CONSTRUCTION

PLAN & PROFILE

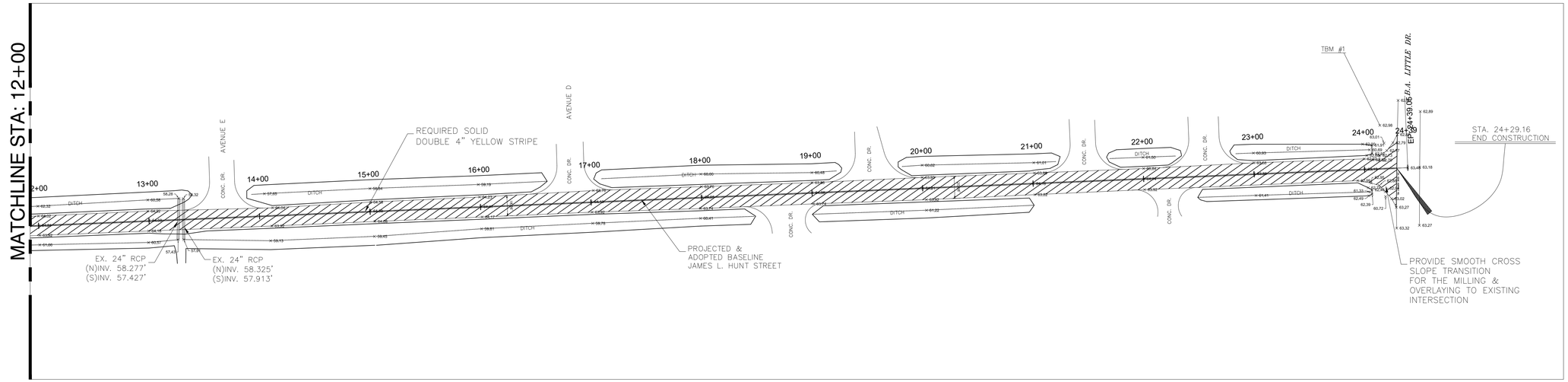
WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
PH: 225-383-0822

DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	1"=50'	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

SHEET NO. 6



NORTH

LEGEND

X 95 — EXISTING ELEVATION

EXISTING DITCH LIMITS

EXISTING PIPE

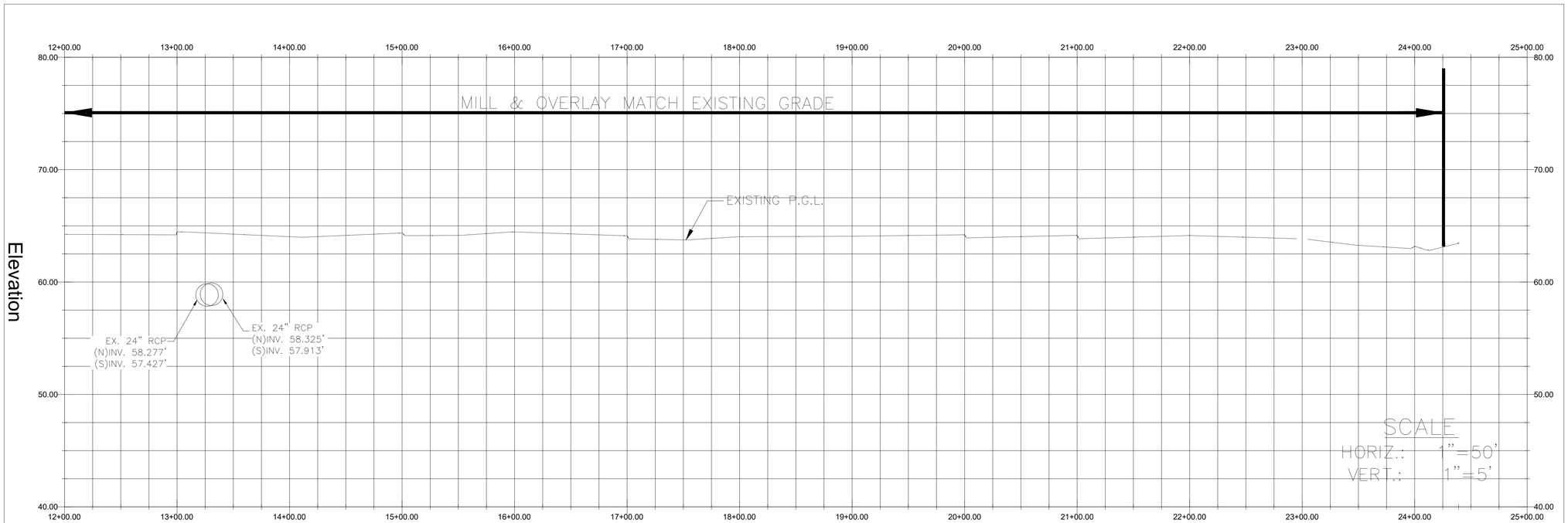
REQUIRED ASPHALT PVMT.

ASPHALT MILL & OVERLAY

GRAPHIC SCALE

20 0 10 50 100 200

(IN FEET)
1 inch = 50 ft.



WTAA ENGINEERS, LLC — SINCE 1979 — CERTIFIED & LICENSED ENGINEERING CONSULTANTS

REVISIONS		
DATE:	REMARKS:	APP'D

SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

PLAN & PROFILE

WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
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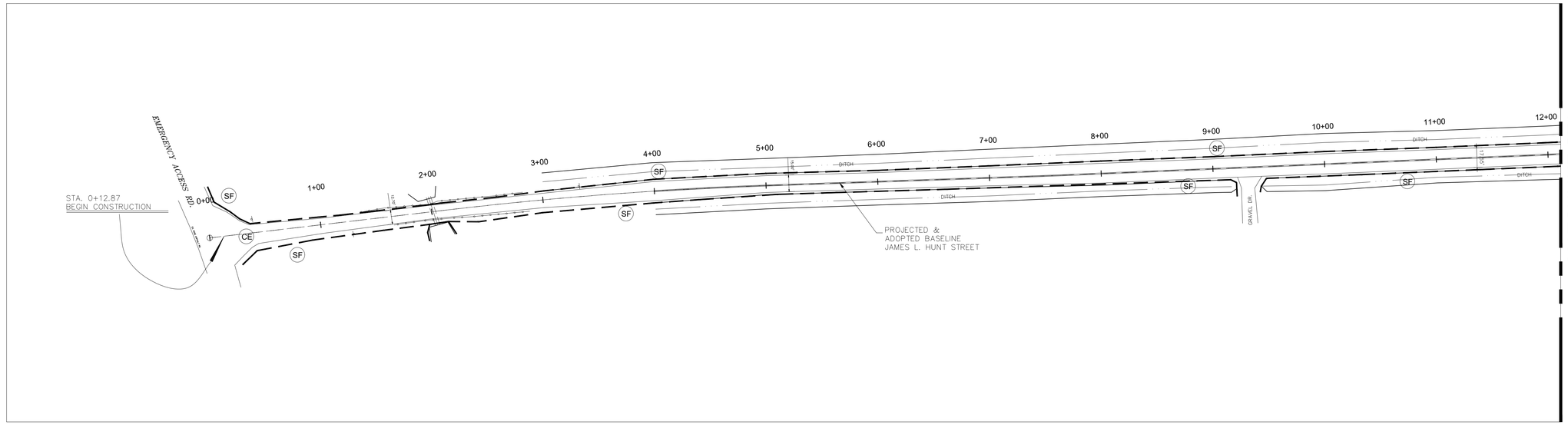
DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	1"=50'	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 26222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

SHEET NO.
7



LEGEND

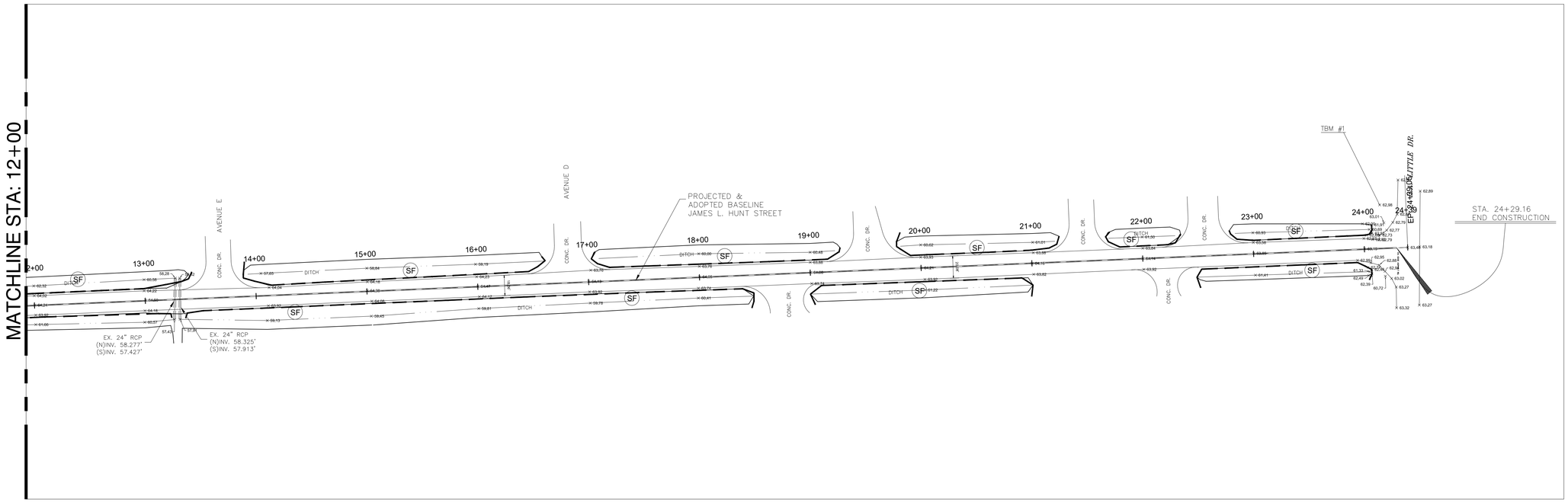
- (SF) SILT FENCING
- (TS) TEMPORARY SEEDING
- (OP) OUTLET PROTECTION
- (IP) INLET PROPTECTION
- (CE) TEMP. GRAVEL CONSTRUCTION ENTRANCE
- (CD) TEMP. SEDIMENT CHECK DAM

GRAPHIC SCALE

20 0 10 50 100 200

(IN FEET)

1 inch = 50 ft.



REVISIONS		
DATE:	REMARKS:	APP'D

SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

SWPPP

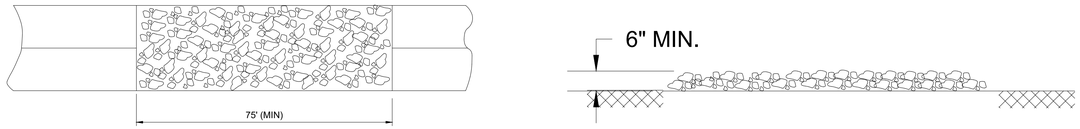
WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
PH: 225-383-0822

DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	1"=50'	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

SHEET NO.
8



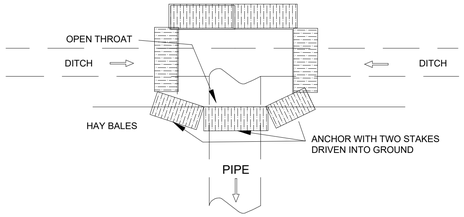
TEMPORARY STONE CONSTRUCTION ENTRANCE

NOTES:

A STONE OR STABALIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON THE CONSTRUCTIOIN SITE TO REDUCE T0HE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS. IF THE ACTION OF THE VEHICLE TRAVELLING OVER THE GRAVEL PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. A FEW BASIC GUIDELINES ARE:

1. THE STONE LAYER MUST BE AT LEAST 6" THICK.
2. THE STONE SHALL CONFORM TO SECTION 71(02)(CLASS 2LB) OF LADOTD STANDARD SPECIFICATIONS.
3. THE LENGTH OF THE PAD MUST BE AT LEAST 75 FEET AND IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS.
4. A GEOTEXTILE FABRIC UNDERLINER IS REQUORED. THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH SECTION 1019(TYPE D) OF THE LADOTD STANDARD SPECIFICATIONS.
5. IF A WASH RACK IS NECESSARY, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE.

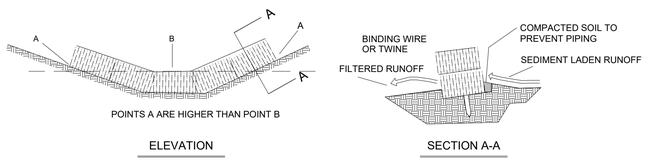
CE



THE TRAP SHOULD BE INSPECTED REGULARLY AND AFTER EACH STORM. THE SEDIMENT SHOULD BE REMOVED AND MAKE SURE EACH STAKE IS FIRMLY IN THE GROUND.

TEMPORARY INLET TRAP

IP

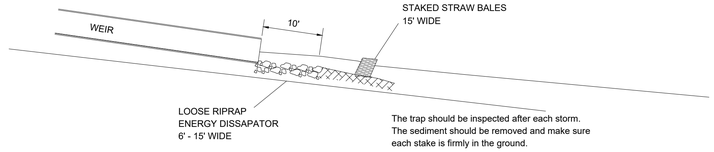


ELEVATION SECTION A-A

TEMPORARY SEDIMENT CHECK DAM (HAY)

NOTES:
A HAY BALE BARRIER IS A TEMPORARY SEDIMENT BARRIER CONSISTING OF A ROW OF ENTRENCHED AND ANCHORED BALES OF STRAW OR HAY. THE HAY BALE BARRIER IS ALSO USED AS A CHECK DAM TO REDUCE THE VELOCITY IN SMALL DITCHES OR SWALES. THE HAY BALES SHOULD BE IN ACCORDANCE WITH LADOTD STD. SPECIFICATIONS, SECT. 204.

CD



OUTLET CONTROL

OP

SEEDING PROCEDURES BEHIND DITCHES

APRIL TO OCTOBER

MIX 1 PART BROWN TOP MILLET, 1 PART BAHIA GRASS (CRACKED SEED) AND 1 PART 13-13-13 FERTILIZER IN GARBAGE CAN.

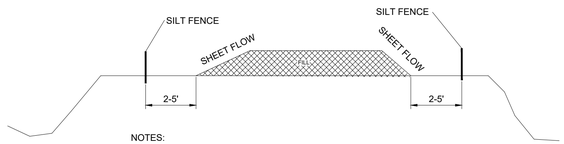
THE SEEDING SHOULD BE DONE ON LOOSE SOIL, THEN THE AREA SHOULD BE BACKROLLED TO IMPLANT THE SEED. (SEEDING SHOULD BE HEAVY).

*FOR AREAS ON SLOPE, HAY SHOULD BE SPREAD AND THEN ROLLED OVER WITH A CRIMPER TO HOLD THE LOOSE DIRT ON THE SLOPE.

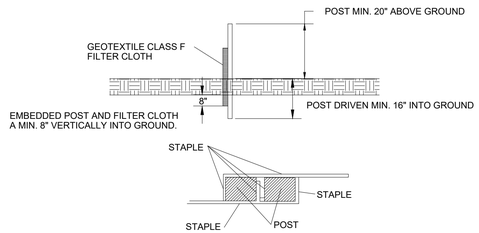
OCTOBER TO APRIL

MIX 1 PART BROWN TOP MILLET, 1 PART RYE GRASS, 1 PART 13-13-13 FERTILIZER IN GARBAGE CAN.

TS



NOTES:
1. POSTS TO BE SPACED MAXIMUM OF 10' APART AND DRIVEN 16" INTO GROUND.
2. EXECAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
3. STAPLE FILTER MATERIAL TO POSTS AND EXTEND IT INTO TRENCH.
4. BACKFILL AND COMPACT EXCAVATED SOIL.



JOINING 2 ADJACENT SILT FENCE SECTION

SILT FENCE

SF

LEGEND

- SF SILT FENCING
- TS TEMPORARY SEEDING
- OP OUTLET PROTECTION
- IP INLET PROPTECTION
- CE TEMP. GRAVEL CONSTRUCTION ENTRANCE
- CD TEMP. SEDIMENT CHECK DAM

SEDIMENTATION DETAIL PLAN

WTAA ENGINEERS, LLC — SINCE 1979 — CERTIFIED & LICENSED ENGINEERING CONSULTANTS

REVISIONS		
DATE:	REMARKS:	APP'D

SOUTHERN UNIVERSITY
DEPARTMENT OF AGRICULTURE
ROADWAY CONSTRUCTION

SWPPP DETAILS

WTAA ENGINEERS
ENGINEERING CONSULTANTS AND CONSTRUCTION SUPPORT SERVICES

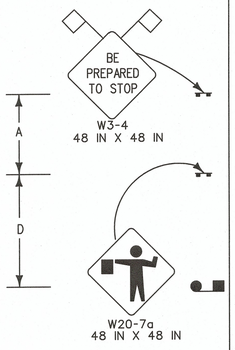
2622 NORTH ST.
BATON ROUGE,
LOUISIANA 70802
PH:1-833-300-9822
PH: 225-383-0822

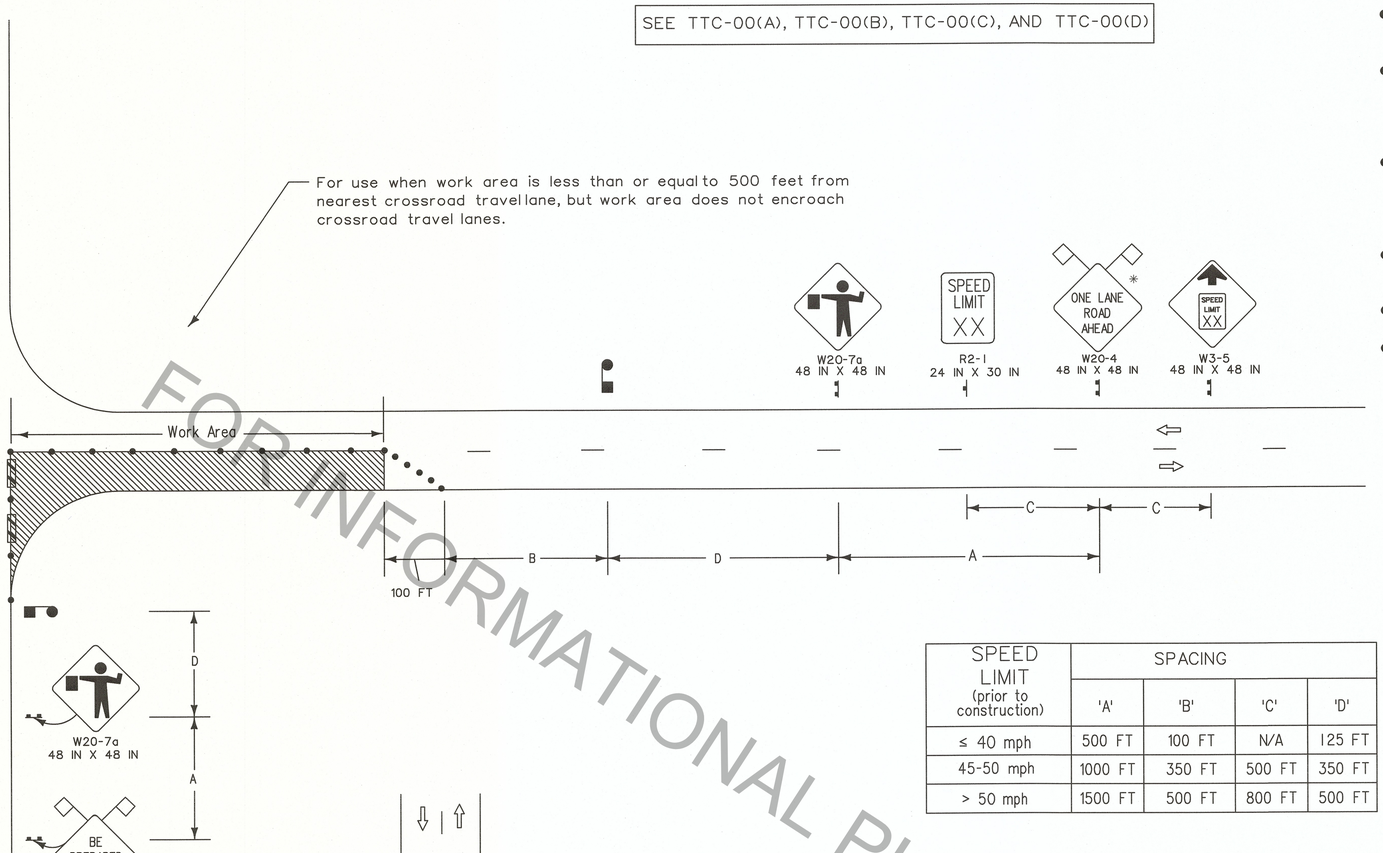
DESIGNED BY:	CHECKED BY:	DATE:	SCALE:	WTAA PROJECT NO:
E&G	S.M.	1/30/2025	N/A	WTAA-24103

STATE OF LOUISIANA
P. Stephen Lundgren, Jr.
REG. No. 28222
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
1-31-2025

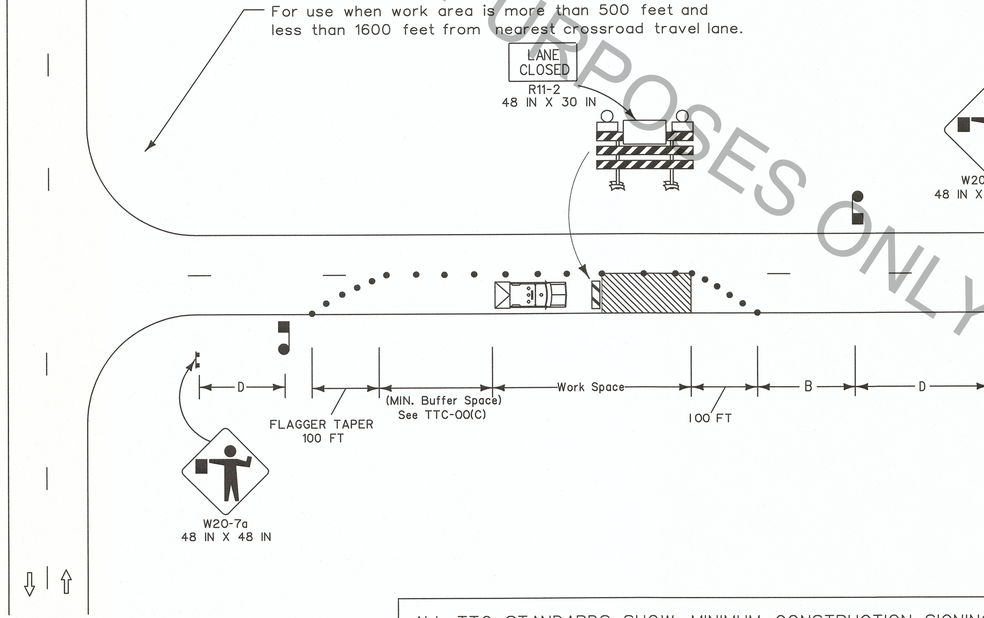
SHEET NO.
9

SEE TTC-00(A), TTC-00(B), TTC-00(C), AND TTC-00(D)





SPEED LIMIT (prior to construction)	SPACING			
	'A'	'B'	'C'	'D'
≤ 40 mph	500 FT	100 FT	N/A	125 FT
45-50 mph	1000 FT	350 FT	500 FT	350 FT
> 50 mph	1500 FT	500 FT	800 FT	500 FT



* Any sign of the W20-4 series may be used.

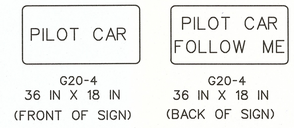
NOTES

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), TTC-00(C), and TTC-00(D).

1. This layout represents the minimum traffic controls required for lane closures on two-lane roads with two-way traffic less than 1600 feet from an intersection. For advance signing see TTC-00(D).
2. Visual or radio contact shall be required between flaggers at all times. The flagger shall be visible from flagger sign.
3. Only law officers shall direct traffic against a traffic signal indication.
4. If work area is greater than 1600 feet see TTC-04.
5. If a pilot car is required then the contractor is not required to have channelizing devices in the tangent section.
6. A vehicle with a flashing amber light and a truck mounted attenuator shall be used on all roadways with an ADT greater than 20,000 and a pre-construction speed greater than or equal to 40 mph. This vehicle shall move with work operations not to exceed the roll-ahead distance required by the manufacturer plus 100 feet.

PILOT CAR

- If used, a pilot car shall guide a queue of vehicles through the work zone or diversion.
- It shall be used in restricted visibility operations such as lime or cement stabilization, chip seals, or operations in hilly or curvy terrains, where flaggers cannot see each other (no clear line-of-sight).
- The operation of the pilot vehicle shall be coordinated with flagging operations or other controls at each end of the one-lane section and all major driveways and street intersections.
- The pilot car sign should be mounted 7 feet above roadway in a position visible to oncoming and following traffic.
- The pilot car shall have an amber beacon light.
- The sign mounted on the vehicle shall be two-sided.



LEGEND

- Traffic Sign
- Channelizing Devices
- Type III Barricades
- Work Area
- Flagger
- Type B Light
- Direction of Travel
- Truck with Amber Light and TMA

ALL TTC STANDARDS SHOW MINIMUM CONSTRUCTION SIGNING.
ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER.
CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

STATE OF LOUISIANA
GARY N. LeBLANC
REG. No. 28220
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6-27-18

SHEET NUMBER

DESIGNED / CHECKED	PARISH	CONTROL SECTION	STATE PROJECT
G. LEBLANC / J. COLVIN			
DETAILED / CHECKED		C. FAKOURI / G. LEBLANC	
SERIES NUMBER			

REVISION OR CHANGE ORDER DESCRIPTION — BY — DATE: 7/2/18

NO.	DATE	APPROVED BY CHIEF ENGINEER

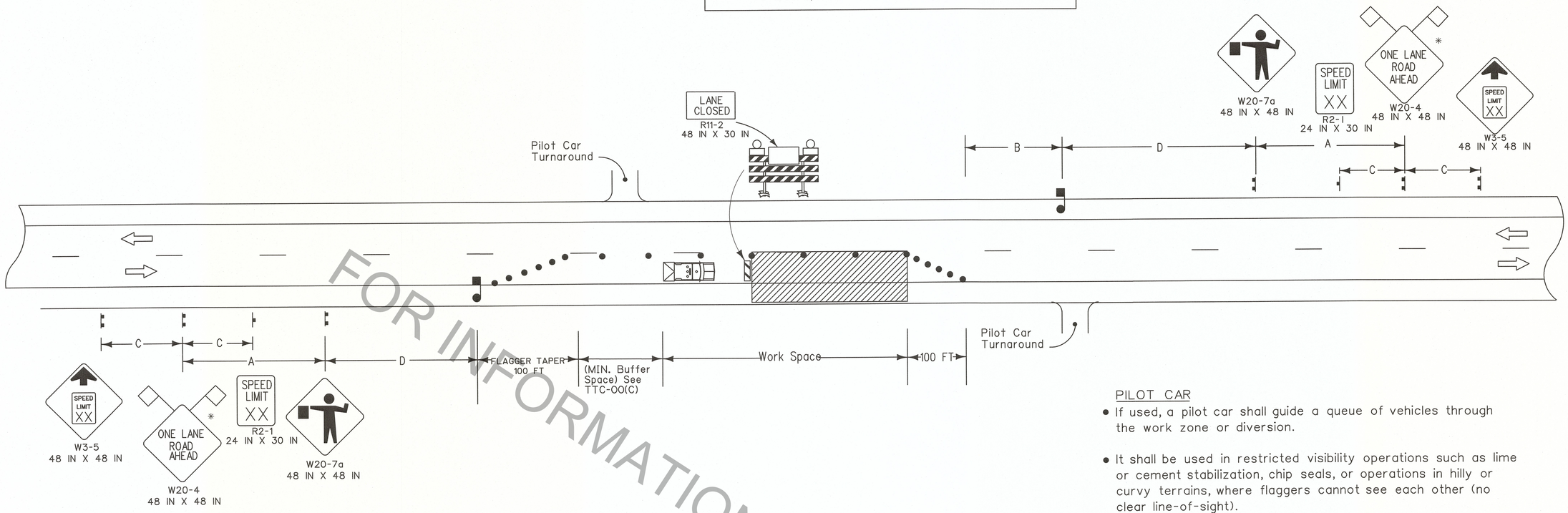
STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

TEMPORARY TRAFFIC CONTROL
LAYOUT FOR LANE CLOSURES ON TWO LANE ROADS WITH TWO-WAY TRAFFIC NEAR INTERSECTIONS (FLAGGING OPERATIONS)

TTC-03

DOTD TRAFFIC ENGINEERING

SEE TTC-00(A), TTC-00(B), TTC-00(C), AND TTC-00(D)



NOTES

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), TTC-00(C) and TTC-00(D).

1. This layout represents the minimum traffic controls required for lane closures on two-lane roads with two-way traffic greater than 1600 feet from an intersection. For this type of closure either a flagger or a pilot car will be required. For advance signing see TTC-00(D).
2. To prevent vehicles from entering the work area against the flow of traffic, an additional flagger shall be stationed at each intersection, major driveway, railroad crossing, or crossing within the work area.
3. For projects in rural areas the distance between flaggers shall not exceed:
   (A) 2.5 miles for ADT<2,500
   (B) 2.0 miles for 2,500<ADT<5,000
   (C) 1.5 miles for ADT>5,000
4. The flagger station shall be near the beginning of the taper and shall have adequate sight distance to be visible to oncoming traffic. If sight distance cannot be achieved, the distance between flaggers may be extended for a short duration.
5. Visual or radio contact shall be required between flaggers at all times. The flagger shall be visible from the flagger sign.
6. A vehicle with a flashing amber light and a truck mounted attenuator shall be used on all roadways with an ADT greater than 20,000 and a pre-construction speed greater than or equal to 40 mph. This vehicle shall move with work operations not to exceed the roll-ahead distance required by the manufacturer plus 100 feet.
7. If a pilot car is required then the contractor is not required to have channelizing devices in the tangent section.
8. If work zone is less than 1600 feet from an intersection see TTC-03.

SPEED LIMIT (prior to construction)	SPACING			
	'A'	'B'	'C'	'D'
≤ 40 mph	500 FT	100 FT	N/A	125 FT
45-50 mph	1000 FT	350 FT	500 FT	350 FT
≥ 55 mph	1500 FT	500 FT	800 FT	500 FT

ALL TTC STANDARDS SHOW MINIMUM CONSTRUCTION SIGNING.
ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER.
CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

PILOT CAR

- If used, a pilot car shall guide a queue of vehicles through the work zone or diversion.
- It shall be used in restricted visibility operations such as lime or cement stabilization, chip seals, or operations in hilly or curvy terrains, where flaggers cannot see each other (no clear line-of-sight).
- The operation of the pilot vehicle shall be coordinated with flagging operations or other controls at each end of the one-lane section and all major driveways and street intersections.
- The pilot car sign should be mounted 7 feet above roadway in a position visible to oncoming and following traffic.
- The pilot car shall have an amber beacon light.
- The sign mounted on the vehicle shall be two-sided.

PILOT CAR — G20-4, 36 IN X 18 IN (FRONT OF SIGN)

PILOT CAR FOLLOW ME — G20-4, 36 IN X 18 IN (BACK OF SIGN)

* Any sign of the W20-4 series may be used.

LEGEND

- Traffic Sign
- Flagger
- Channelizing Devices
- Type III Barricades
- Work Area
- Type B Light
- Direction of Travel
- Truck with Amber Light and TMA

STATE OF LOUISIANA
GARY N. LeBLANC
REG. No. 28220
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6-27-18

SHEET NUMBER

PARISH	CONTROL SECTION	STATE PROJECT

DESIGNED G. LEBLANC
CHECKED J. COLVIN
DETAILED C. FAKOURI
CHECKED G. LEBLANC
SERIES NUMBER

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

APPROVED BY CHIEF ENGINEER
DATE: 7/2/18

TEMPORARY TRAFFIC CONTROL
LAYOUT FOR LANE CLOSURES ON TWO LANE ROADS WITH TWO-WAY TRAFFIC (FLAGGING OPERATIONS)
TTC-04

DOTD TRAFFIC ENGINEERING