INVITATION TO BID

SUBMIT BID TO: Grambling State University Purchasing Department
purchasingbids@gram.edu

To maintain the integrity of the bid process, please do not cc any other University email address when submitting your bid.

Bid Number: 50018-260026 **DATE: MAY 6, 2026**

TITLE: ROADWAY RECONSTRUCTION COLLEGE AVE

Purchasing Department Contacts: Erin Walker (318-274-3280)
walkere@gram.edu

Architect on record Henry A. Shuler, P.E.
Shuler Consulting Company
318-481-1112; hshuler@shulercc.com

BID SCHEDULE: JUNE 9, 2026

DUE DATE/TIME *(email only)*: JUNE 9, 2026, BY 2:00 PM

CST BID OPENING *(Zoom)*: JUNE 9, 2026, AT 2:35 PM CST

MEETING ID: 811 8041 8887 **PASSWORD: 688268**

https://us06web.zoom.us/j/81180418887?pwd=03SKMM2bYA69RMKRxMX22aPQgcymbI.1

General Instructions to Bidders

1. Grambling State 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.
2. Hard copies of sealed bids will no longer be accepted. All bids must be received electronically by the due date and time to be considered.
3. Sealed bids for furnishing the items and/or services specified are hereby solicited, and will be received by the issuing Grambling State University Campus/Department at the "Submit Bid To" address stated above, until the specified due date and time. Bidder is solely responsible for the timely delivery of bid. The Purchasing Office is not responsible for any delays. It is the responsibility of the Supplier to ensure the bid is received by GSU Purchasing by the indicated due date and time. Any delays that may occur in transmission of the bid is the responsibility of the supplier. A bid will be considered late if it is not received at the "Submit Bid TO" email address by the indicated due date and time.
4. The maximum email attachment size accepted is 125 MB. It is the supplier's responsibility to ensure bid submission is sized such that it is successfully transmitted and received by GSU. If the bid response is too large to be emailed as one document, the bid must be sent as separate documents. Each submittal should be labeled. (Example – Bid Submittal 1 out of 3 for IFB-50018-26XXXX - Title; Bid Submittal 2 out of 3 for IFB-50018-26XXXX - Title, etc.). If any submittal is received late, GSU will not consider the late submittal(s). Only the submittal(s) received by the due date and time will be considered. Late bids will not be accepted per
5. Bid submissions must be signed by a person authorized to bind the vendor. In accordance with Louisiana R.S. 39:1594, the person signing the bid must be:

   (1) any corporate officer listed on the most current annual report on file with the secretary of state, or the signature on the bid is that of any member of a partnership or partnership in commended listed in the most current partnership records on file with the secretary of state; or

   (2) an authorized representative of the corporation, partnership, or other legal entity and the Bidder submits or provides upon request a corporate resolution, certification as to the corporate principal, or other documents indicating authority which are acceptable to the public entity, including registration on an electronic Internet database maintained by the public entity; or

   (3) entity has filed in the appropriate records of the secretary of state in which the public entity is located, an affidavit, resolution, or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts.
6. When bid is submitted by email, **the subject line must show the Solicitation/File No.** and submission must be received by bid deadline.

7. Read the entire solicitation, including all terms, conditions and specifications within this packet.

8. All bid information and prices must be typed or written in ink. Any corrections, erasures or other forms of alteration to unit prices are to be initialed by the Bidder.

9. Bid prices shall include all delivery charges paid by the vendor, F.O.B. Grambling State University Destination, unless otherwise provided in the solicitation. Any invoiced delivery charges not quoted and itemized on the Grambling State University purchase order are subject to rejection and non-payment.

10. Payment terms: Net 30 after receipt of properly executed invoice or delivery and acceptance, whichever is later.

11. By signing this solicitation, the Bidder certifies compliance with all general instructions to Bidders, terms, conditions and specifications; and further certifies that this bid is made without collusion or fraud. MANDATORY bid requirements are detailed immediately following the Standard Terms & Conditions section.

12. Quantities listed in these specifications are approximate and are not guaranteed by the University. The University reserves the right to ***increase or reduce*** quantity as needed if in the best interest of the University.

13. **Bid Bonds: Are required on ALL bids and/or Public Works Project over $25,000**, a bid bond must be submitted for each separate bid response. The bid bond shall be in an amount equal to 5% of the bid price submitted and alternates, if any. The bid security shall be in a form of a bid bond or certified check, or cashier's check.

    ***FOR THIS BID SOLICITATION: To provide the most comprehensive coverage for this renovation project, bidders are required to submit a bid bond during the bidding phase and transition to a performance bond once the contractor is selected. This approach ensures both the integrity of the bidding process and the successful completion of the project.**

14. The Contractor is required to record the Contract with the Clerk of Court in Lincoln Parish and must provide the Purchasing Department with proof of filing. Additionally, **a Performance Bond will be required at the time of the award of the contract**.

(PLEASE NOTE THAT A BID BOND MUST BE SIGNED BY THE AGENT OR ATTORNEY-IN-FACT OF THE SURETY.)

(*) The surety or insurance company furnishing the bid bond shall be currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds.

STANDARD TERMS & CONDITIONS INVITATION TO BID

These standard terms and conditions shall apply to all Grambling State University solicitations, unless otherwise specifically amended and provided for in the special terms and conditions, specifications, or other solicitation documents. In the event of conflict between the General Instructions to Bidders or Standard Terms & Conditions and the Special Terms & Conditions, the Special Terms & Conditions shall govern.

Bids submitted are subject to provisions of the laws of the State of Louisiana, including but not limited to: the Louisiana Procurement Code (R.S. 39:1551-1736); Purchasing Rules and Regulations (Title 34 of the Louisiana Administrative Code); Executive Orders; and the terms, conditions, and specifications stated in this solicitation.

1. **Bid Delivery and Receipt:** To be considered, Bidders may submit bids electronically to **purchasingbids@gram.edu** When bid is submitted by email, the subject line must show the Solicitation/File No. and must be received by bid deadline.

   Bidders are advised that the U.S. Postal Service does not make deliveries to the Purchasing Office. Bids will no longer be accepted by mail or in person. Bidder is solely responsible for the timely delivery of its bid, and failure to meet the bid due date and time shall result in rejection of the bid.

2. **Bid Forms:** Bids are to be submitted on and in accordance with the Grambling State University solicitation forms provided, and must be signed by an authorized agent of the vendor. Bids submitted on other forms or in other price formats may be considered informal and may be rejected in part or in its entirety. Bids submitted in pencil and/or bids containing no original signature indicating the Bidder's intent to be bound will not be accepted.

3. **Interpretation of Solicitation/Bidder Inquiries:** If Bidder is in doubt as to the meaning of any part or requirement of this solicitation, Bidder may submit a written request for interpretation to the Grambling State University Purchasing at the email address on page 1 of this solicitation. Written inquiries must be received in the Grambling State University Purchasing Department no later than five (5) calendar days prior to the opening of bids, and shall be clearly cross-referenced to the relevant solicitation/specification in question.

   No decisions or actions shall be executed by any Bidder as a result of oral discussions with any Grambling State University employee or consultant. Any interpretation of the documents will be made by formal addendum only, issued by the Grambling State University Purchasing Department. It is the responsibility of the bidder, prior to submitting their bid, to periodically visit the State of Louisiana Purchasing Department LaPAC website, or contact he Grambling State University Purchasing Department, to identify if any addendums were issued. Grambling State University shall not be responsible for any other interpretations or assumptions made by Bidder.

4. **Bid Opening:** In-person bid openings have been suspended for the foreseeable future. Bidders may attend the public bid opening of sealed bids and proposals conducted on Zoom. No information or opinions concerning the ultimate contract award will be given at bid opening or during the evaluation process. Written bid tabulations will not be furnished. Bids may be examined within 72 hours after bid opening. Information pertaining to completed files may be secured by submitting a written request to the Grambling State University Purchasing at the email address shown in header.

5. **Special Accommodations:** Any "qualified individual with a disability" as defined by the Americans with Disabilities Act, who has submitted a bid and desires to attend the public bid opening, must notify the Grambling State University Purchasing Department in writing not later than seven days prior to the bid opening date of their need for special accommodations. If the request cannot be reasonably provided, the individual will be informed prior to the bid opening.

6. **Standards of Quality:** Any product or service bid shall conform to all applicable federal, state and local laws and regulations, and the specifications contained in the solicitation. Any manufacturer's name, trade name, brand name, or catalog number used in the specification is for the purpose of describing the standard of quality, performance, and characteristics desired; and is not intended to limit or restrict competition. Bidder must specify the brand and model number of the product offered in his bid. Bids not specifying brand and model number shall be considered as offering the exact product specified in the solicitation.

7. **New Products/Warranty/Patents:** All products bid for purchase must be new, never previously used, of the manufacturer's current model and/or packaging, and of best quality as measured by acceptable trade standards. No remanufactured, demonstrator, used or irregular products will be considered for purchase unless otherwise specified.

   The manufacturer's standard published warranty and provisions shall apply, unless more stringent warranties are otherwise required by Grambling State University and specified in the solicitation. In such cases, the Bidder and/or manufacturer shall honor the specified warranty requirements, and bid prices shall include any premium costs of such coverage.

   Bidder guarantees that the products proposed and furnished will not infringe upon any valid patent or trademark; and shall, at its own expense, defend any and all actions or suits charging such infringement, and shall save Grambling State University harmless. Descriptive Information: Bidders proposing an equivalent brand or model should submit descriptive information (such as

literature, technical data, illustrations, etc.) sufficient for Grambling State University to evaluate quality, suitability, and compliance with the specifications with the bid submission. Failure to submit descriptive information may cause bid to be rejected. Any changes made by Bidder to a manufacturer's published specifications shall be verifiable by the manufacturer. If items bid do not fully comply with specifications, Bidder should state in what respect items deviate. Bidder's failure to note exceptions in its bid will not relieve the Bidder from supplying the actual products requested.

8. **Bids/Prices/F.O.B. Point**
   - The bid price for each item is to be quoted on a "net" basis and F.O.B. Grambling State University Destination, i.e. title passing upon receipt and inclusive of all delivery charges, any item discounts, etc.
   - Bids other than F.O.B. Grambling State University Destination may be rejected.
   - Bids indicating estimated freight charges may be rejected.
   - Bids requiring deposits, payment in advance, or C.O.D. terms may be rejected.
   - Bidders who do not quote "net" item prices and who separately quote an overall "lump sum" freight cost or discount for all items shall be considered as submitting an "all-or-none" bid for evaluation and award purposes; and risk rejection if award is made on an item basis.
   - Prices shall be firm for acceptance for a minimum of 30 days, unless otherwise specified. Bids conditioned with shorter acceptance periods may be rejected.
   - Prices are to be quoted in the unit/packaging specified (e.g. each, 12/box, etc), or may be rejected.
   - In the event of extension errors, the unit price bid shall prevail.

9. **Taxes:** Vendor is responsible for including all applicable taxes in the bid price. Grambling State 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.

10. **Terms and Conditions:** This solicitation contains all terms and conditions with respect to the purchase of the goods and/or services specified herein. Submittal of any contrary terms and conditions may cause your bid to be rejected. By signing and submitting a bid, vendor agrees that contrary terms and conditions which may be included in its bid are nullified; and agrees that this contract shall be construed in accordance with this solicitation and governed by the laws of the State of Louisiana.

11. **Vendor Forms/ Grambling State University Signature Authority**: The terms and conditions of the Grambling State University solicitation, purchase order and contract shall solely govern the purchase agreement, and shall not be amended by any vendor contract, form, etc.

    The University's has assigned delegated authorities to execute/sign any vendor contracts, forms, etc., on behalf of Grambling State University as a result of any award of the solicitation. Departments are expressly prohibited from signing any vendor forms.

    Any such vendor contracts/forms bearing unauthorized signatures shall be null and void, shall have no legal force, and shall not be recognized by Grambling State University in any dispute arising therefrom. Vendors who present any such forms to department users for signature without regard to this strict Grambling State University policy may face contract cancellation, suspension, and/or debarment.

12. **Awards:** The intent to award this bid on an all-or-none basis to the lowest responsible and responsive Bidder will be stated on the bid form. For bids with several items, Grambling State University reserves the right: (1) to award items separately, grouped, or on an all-or-none basis, as deemed in its best interest; (2) to reject any or all bids and/or items; and (3) to waive any informalities.

    All solicitation specifications, terms and conditions shall be made part of any subsequent award as if fully reproduced and included therein, unless specifically amended in the formal contract.

13. **Acceptance of Bid:** Only the issuance of an official Grambling State University purchase order, contract, Notification of Award letter, or a Notification of Intent to Award letter shall constitute the University's acceptance of a bid. Grambling State University shall not be responsible in any way to a vendor for goods delivered or services rendered without an official purchase order and/or contract.

14. **Applicable Law:** All contracts shall be construed in accordance with and governed by the laws of the State of Louisiana.

15. **Awarded Products/Unauthorized Substitutions:** Only those awarded brands and numbers stated in the Grambling State University contract are approved for delivery, acceptance, and payment purposes. Any substitutions must be reviewed and approved by the Grambling State University Purchasing Department prior to awarding the contract. Unauthorized product substitutions are subject to rejection at time of delivery, post-return at vendor's expense, and non-payment. Testing/Rejected Goods: Vendor warrants that the products furnished will be in full conformity with the specification, drawing or sample, and agrees that this warranty shall survive delivery, acceptance, and use. Any defect in any product may cause its rejection.

Grambling State University reserves the right to test products for conformance to specifications both prior to and after any award. Vendor shall bear the cost of testing if product is found to be non-compliant. All rejected goods will be held at vendor's risk and expense, and subject to vendor's prompt disposition. Unless otherwise arranged, rejected goods will be returned to the vendor freight collect.

16. **Delivery**: Vendor is responsible for making timely delivery in accordance with its quoted delivery terms. Vendor shall promptly notify the Grambling State University Purchasing Department of any unforeseen delays beyond its control. In such cases, Grambling State University reserves the right to cancel the order and to make alternative arrangements to meet its needs. All deliveries **must** go to: **Property and Receiving, 407 Central Ave., Grambling, La 71245.**

17. **Default of Vendor:** Failure to deliver within the time specified in the bid/award will constitute a default and may be cause for contract cancellation. Where the University has determined the vendor to be in default, Grambling State University reserves the right to purchase any or all goods or services covered by the contract on the open market and to surcharge the vendor with costs in excess of the contract price. Until such assessed surcharges have been paid, no subsequent bids from the defaulting vendor will be considered for award.

18. **Vendor Invoices:** Invoices shall reference the Grambling State University purchase order number, vendor's packing list/delivery ticket number, shipping/delivery date, etc. Invoices are to be itemized and billed in accordance with the order, show the amount of any prompt payment discount, and submitted on the vendor's own invoice form. Invoices submitted by the vendor's supplier are not acceptable.

19. **Delinquent Payment Penalties:** Delinquent payment penalties are mandated and governed by Louisiana R.S. 39:1695. Vendor penalties to the contrary shall be null and void, shall have no legal force, and shall not be recognized by Grambling State University in any dispute arising therefrom.

20. **Assignment of Contract/Contract Proceeds:** Vendor shall not assign, sublet or transfer its contractual responsibilities, or payment proceeds thereof, to another party without the prior written consent and approval of the Grambling State University Purchasing Department. Unauthorized assignments of contract or assignments of contract proceeds shall be null and void, shall have no legal force, and shall not be recognized by Grambling State University in any dispute arising therefrom.

21. **Contract Cancellation/Termination:** Grambling State University has the right to cancel any contract for cause, in accordance with purchasing rules and regulations, including but not limited to: (1) failure to deliver within the 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) misrepresentation by the vendor; (4) fraud, collusion, conspiracy or other unlawful means of obtaining any contract with the University; (5) conflict of contract provisions with constitutional or statutory provisions of state or federal law; (6) any other breach of contract.

    Grambling State University has the right to cancel any contract for convenience at any time by giving thirty (30) days written notice to the vendor. In such cases, the vendor shall be entitled to payment for compliant deliverables in progress.

22. **Prohibited Contractual Arrangements:** Per Louisiana R.S. 42:1113.A, no public servant, or member of such a public servant's immediate family, or legal entity in which he has 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.

23. **Equal Employment Opportunity Compliance**: By submitting and signing this bid, vendor agrees to abide by the requirements of the following as applicable: Title VI and VII of the Civil Rights Act of 1964, as amended by the Equal Opportunity Act of 1972; federal Executive Order 11246; federal Rehabilitation Act of 1973, as amended; the Vietnam Era Veteran's Readjustment Assistance Act of 1974; Title IX of the Education Amendments of 1972; the Age Act of 1975; the Americans with Disabilities Act of 1990. Vendor agrees not to discriminate in its employment practices and will render services under any contract entered into as a result of this solicitation without regard to race, color, religion, sex, age, national origin, veteran status, political affiliation, handicap, disability, or other non-merit factor. Any act of discrimination committed by vendor, or failure to comply with these statutory obligations when applicable, shall be grounds for termination of any contract entered into as a result of this solicitation.

24. **Mutual Indemnification:** Each party hereto agrees to indemnify, defend, and hold the other, the State of Louisiana, any governing board, each party's 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. Certification of No Suspension or Debarment: 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 https://sam.gov/content/home

25. **Substitution of Personnel:** If applicable, the University intends to include in any contract resulting from this IFB the following condition: Substitution of Personnel: If, during the term of the contract, the Contractor or subcontractor cannot provide the personnel as proposed and requests a substitution, that substitution shall meet or exceed the requirements stated herein. A detailed resume of qualifications and justification is to be submitted to the University for approval prior to any personnel substitution. It shall be acknowledged by the Contractor that every reasonable attempt shall be made to assign the personnel listed in the Contractor's bid.

26. **Insurance Requirements:** Please note insurance requirements section included in these bid specifications. If applicable to the services procured in this solicitation, the successful Bidder will be required to furnish a certificate of insurance evidencing required coverages and naming the Grambling State University as an additional insured, and grant a waiver of subrogation on all liability policies.

27. **Nonperformance:** Successful Bidder is required to perform in strict accordance with all contract specifications, terms, and conditions. Successful Bidder will be advised in writing of nonperformance issues and shall be required to promptly implement corrective actions to ensure contract compliance and to prevent recurrences. In the event the successful Bidder is issued three or more complaints of nonperformance, Grambling State University reserves the right at its sole discretion to cancel the contract with a ten (10) day written notice. Contract cancellations due to nonperformance may be cause to deem vendor non-responsible in future solicitations.

NOTE: The University has a fall break and a Spring Break. Each Break is approximately 4 Days Each.

28. **No Smoking Campus**: The Successful Bidder shall be responsible for compliance with all University policies, security measures and vehicle regulations. Specifically, the University is a NO SMOKING campus and all prospective Bidders are cautioned that smoking will not be permitted inside or outside on ANY part of this facility at any time. Any employee who is found to be in violation of this policy will be subject to immediate dismissal.

29. **Non-Exclusivity:** This agreement is non-exclusive and shall not in any way preclude Grambling State University from entering into similar agreements and/or arrangements with other Vendors or from acquiring similar, equal, or like goods and/or services from other entities or sources.

30. **Contract Amendments:** Requests for contract changes must be made in writing by an authorized agent/signatory of the Vendor and submitted to the Grambling State University Purchasing Department for prior approval. Requests shall include detailed justification and supporting documentation for the proposed amendment.

    Contract revisions shall be effective only upon approval by Grambling State University Purchasing Department and issuance of a formal Grambling State University Contract Amendment. The Vendor shall honor purchase orders issued prior to the approval of any contract amendment as applicable.

31. **Term of Contract:** The duration of this Contract commences from the date specified herein or date of award notification and continues until University accepts final delivery of all deliverables. Total initial contract period not to exceed **Twelve (12)** months, unless renewal terms are specified in the solicitation documents. All terms of the solicitation shall be firm for the duration of Contract.

32. **Notification of Fund Appropriation: T**he continuation of this contract is contingent upon the appropriation of funds to fulfill the requirements of the contract by the Legislature. If the Legislature fails to appropriate sufficient monies to provide for the continuation of the contract or if such appropriation is reduced by the veto of the Governor or by any means provided in the Appropriations Act to prevent the total appropriations for the year from exceeding revenues for that year or for any lawful purpose and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated.

    All Bidders should be aware that our Legislative process is such that it is often impossible to give prior notice of the non-appropriation of funds. Number of Bid Response Copies: Each Bidder must submit one (1) signed original bid to the Office of Purchasing at the mailing address specified in this solicitation document. The original must CONTAIN ORIGINAL SIGNATURES of those company officials or agents duly authorized to sign on behalf of the organization. Bidders may be required to mail in the original documents upon award.

33. **Prohibition of Discriminatory Boycotts of Israel:** In accordance with LA R.S. 39:1602:1, for any contract for $100,000 or more and for any contractor with five or more employees, Contractor, or any Subcontractor, shall certify it is not engaging in a boycott of Israel, and 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 the contract.

34. **Pre-Bid Meeting: Scheduled for May 26, 2026 at 11:00am** in the Facilities Conference Rm, located on 1 Facilities Drive. Grambling, La 71245. **La. R.S. 38:2212.H; Bidders must attend (and stay at) any mandatory pre-bid meeting.**

35. **Site Visit/Contract Information**: It is the responsibility of the prospective bidder to visit and examine the jobsite, take measurements to his/her own satisfaction and determine conditions under which work is to be done. Owner will not accept responsibility for conditions which careful examination of premises would have shown existed.

    To visit jobsite and for further information, prospective bidder is to contact the Grambling State University Purchasing Departments at the contacts listed on page 1. It is preferred to have a written record of the correspondence for each site visit request. Please do not contact us by phone to schedule a visit unless you do not receive a response to your email request after 48 hours.

36. **Piggy Back Clause:** Grambling State University is asking all responding vendors to indicate their willingness to extend the terms of resulting contracts, inclusive of price, to other Louisiana state agencies and/or universities. While this clause in no way commits any state agency and/or university to purchase from the awarded vendor, nor does it guarantee any additional orders will result, it does allow state agencies and/or universities, at their discretion, to make use of the Grambling State University's competitive process (provided said process satisfies their own procurement guidelines) and purchase directly from the awarded contractor. All purchases made by other state agencies and/or universities shall be understood to be transactions between that state agency and/or university and the awarded vendor. Grambling State University shall not be responsible for any such purchases.

37. **State of Louisiana Contractor's Licenses Requirements:** If a Louisiana Contractor's License Number is Required for the items, work, or services to be performed under this solicitation, then it shall be stated in the bid advertisement that will appear in the Baton Rouge Advocate, and it will be stated in the specifications provided with these bid documents.

38. **Examination of Bid Documents:** Bidders shall carefully examine the bidding documents and the sites to obtain first-hand knowledge of the scope and the conditions of the work. The submittal of a bid means the Contractor has inspected all elevators and related equipment in the buildings specified and has found elevators to be in a proper working order and satisfactory condition. No additional compensation will be allowed by the owner for failure of such contractor or subcontractor to inform themselves as to the conditions affecting the work

39. **Errors and Omissions in Bid:** The University will not be liable for any error in the bid. Bidder will not be allowed to alter bid documents after the deadline for bid submission, except under the following condition: The University reserves the right to make corrections or clarifications due to patent errors identified in bids by the University or the Bidder. The University, at its option, has the right to request clarification or additional information from the Bidder.

40. **Waiver of Administration Informalities:** The University reserves the right, at its sole discretion, to waive administrative informalities contained in any bid.

41. **Cost of Offer Preparation:** The University is not liable for any costs incurred by prospective Bidders or Contractors prior to issuance of or entering into a Contract. Costs associated with developing the bid, and any other expenses incurred by the Bidder in responding to the ITB are entirely the responsibility of the Bidder, and shall not be reimbursed in any manner by Grambling State University.

42. **Notice of Intent to Award**: Upon review and approval of the evaluation committee and agency recommendation for award, the Grambling State University will issue a Notice of Intent to Award letter to the apparent successful Bidder. A contract shall be completed and signed by all parties concerned on or before the date indicated. If this date is not met through no fault of the University, the University may elect to cancel the Notice of Intent to Award letter and make the award to the next most advantageous Bidder.

The Purchase Order and the Contractor's specifications will be combined to form the complete contract when the award is made. The Contractor shall be responsible for Contract filing fee with the Lincoln Parish Courthouse.

Any person aggrieved by the proposed award has the right to submit a protest in writing, in accordance with R.S. 39:1671, to the University Purchasing Director, within fourteen (14) days of the award/intent to award.

NOTICE TO VENDORS
LOUISIANA'S HUDSON (SMALL ENTREPRENEURSHIP) AND VETERAN INITIATIVE

The Louisiana Initiative for Small Entrepreneurships (the Hudson Initiative) and the Veteran Initiative (Veteran Small Entrepreneurship) are race and gender neutral goal-oriented programs which encourage State agencies to contract with and encourage contractors who receive contracts from the State to use good faith efforts to utilize certified small entrepreneurships and certified veteran or service-connected disabled veteran owned small entrepreneurships as subcontractors in the performance of the contract. The primary intent of the programs is to provide additional opportunities for Louisiana-based small entrepreneurships that are certified by the Louisiana Department of Economic Development (LED) to participate in contracting and procurement with the State.

Small entrepreneurships that are not currently certified and are interested in participating in procurement and contracting opportunities with the State are encouraged to visit https://www.opportunitylouisiana.gov/small-business/special-programs- for-small-business/hudson-initiative or https://www.opportunitylouisiana.gov/small-business/special-programs-for-small- business/veteran-initiative for qualification requirements and on-line certification. After certification, businesses are encouraged to register in the LaGov Supplier Portal.

END OF SECTION

DEFINITIONS

Agent - The University's representative in Purchasing Department who is referred to throughout these documents as singular in number.

Contractor - The person/company who contracts with Grambling State University to provide the items, services, or to perform the work as called for on these documents who is referred to as singular in number.

Owner –Grambling State University.

IMPORTANT NOTES:

1. **VENDOR BIDDING ANYTHING OTHER THAN EXACT GOODS/SERVICES SPECIFIED IN THESE SPECIFICATIONS SHOULD SUBMIT DESCRIPTIVE AND ILLUSTRATIVE LITERATURE WITH BID FOR CONSIDERATION OF AWARD. FAILURE TO DO SO MAY BE CAUSE FOR REJECTION OF BID.**
2. **ALL PRICES QUOTED ARE TO REMAIN FIRM UNTIL ALL DELIVERABLE GOODS OR SERVICES ARE RENDERED TO AND ACCEPTED BY GRAMBLING STATE UNIVERSITY.**
3. **IN THE EVENT OF EXTENSION ERRORS, THE UNIT PRICE ON THE BID FORM SHALL PREVAIL.**
4. **GRAMBLING STATE UNIVERSITY ADHERES TO NET 30 PAYMENT TERMS. ALL OTHER PAYMENT TERMS MUST BE DISCLOSED WITH BID. BE ADVISED THAT STRICTER PAYMENT TERMS MAY BE CAUSE FOR REJECTION OF BID.**
5. **QUANTITIES ARE APPROXIMATE AND ARE NOT GUARANTEED BY THE UNIVERSITY. THE UNIVERSITY RESERVES THE RIGHT TO INCREASE OR REDUCE QUANTITY AS NEEDED IF IN THE BEST INTEREST OF THE UNIVERSITY.**
6. **THE UNIVERSITY RESERVES THE RIGHT TO AWARD PROPOSAL ON AN INDIVIDUAL ITEM BASIS, A COMBINATION OF ITEMS BASIS, OR AS A TOTAL PACKAGE TO ONE VENDOR, WHICHEVER IS IN THE BEST INTEREST OF THE UNIVERSITY.**
7. **BID SUBMISSIONS MUST DISCLOSE ALL FEES INCLUDING SHIPPING, HANDLING, FREIGHT, FUEL SURCHARGES, ETC.. NO ADDITIONAL FEES WILL BE ACCEPTED AFTER AWARD.**
8. **FAILURE TO COMPLY WITH ANY MANDATORY REQUIREMENTS SHALL BE CAUSE FOR REJECTION OF BID.**
9. **TAX EXEMPTION:** ***Grambling State University is exempt from all Louisiana state and local sales and use taxes and will not pay taxes delineated on invoices for this or any other project. Grambling State University is a tax-exempt State Agency. However, that tax-exempt status does not transfer to its contractors, subcontractors, suppliers or vendors for their use in purchasing project-related materials.***

END OF SECTION

MANDATORY BID REQUIREMENTS

Failure to meet all of the listed mandatory requirements will result in rejection of bid without further consideration.

1. **CERTIFICATION STATEMENT:** The Bidder **must** sign and include the Certification Statement as set forth in solicitation document. The signature of Bidder's Authorized Representative **must be an ORIGINAL signature -** not a typed/electronic signature. Documents signed in the DocuSign™ program are the only exceptions to this policy.

2. **BID SHEET/FORM:** The Bidder must submit bid on the form herein provided. The proposal must be signed in ink, and blank space(s) should be filled in for every applicable blank in the UNIT PRICE and EXTENDED TOTAL column. Items left blank will not be awarded to that bidder. It is not necessary to bid on all items. However, if you are not bidding on a particular item, or find a blank that is not applicable to your submission, write "NO BID" or "N/A" in the provided space(s). The Bidder must state the UNIT price (written in ink or typewritten) for each item and shall show the total amount for each item based on the quantities listed.

3. **CONTRACTOR QUALIFICATIONS: REFERENCE LETTERS:** The University reserves the right to verify contractor's qualifications regarding the bid response received, and to request references for verification purposes.

4. **CERTIFICATE OF INSURANCE: If Insurance is required under this solicitation, it will be stated in the advertisement of the solicitation to appear in the Baton Rouge Advocate, and in the specification provided with these bid documents.** Bidder shall submit a certificate of insurance with bid submission or by provide the following information: Policy number, names and addresses of carriers and Agents, amounts of coverage, types of coverage, and effective dates on the bid form enclosed.

5. **ILLUSTRATIVE MATERIALS: (If Applicable)** Vendor bidding anything other than exact goods/services specified in these specifications should submit descriptive and illustrative literature with the bid for consideration of award. Failure to do so may be cause for rejection of bid.

CONTACT INFORMATION

ELECTRONIC BID SUBMISSIONS (ONLY) *Do not email questions about the bid to this email address.*

purchasingbids@gram.edu

Be sure to include the solicitation number in the subject line.

Do not *send your submission to any other University email address.*

QUESTIONS/CONCERNS ABOUT SPECIFICATIONS

walkere@gram.edu

Do not *email bid submissions this address.*

To contact Purchasing by phone: 318-274-3280

CAMPUS DELIVERIES

Please send samples or other associated documents when a hard copy is requested or deemed necessary. By Mail – Grambling State University
Purchasing Department
PO Box 4269
Grambling LA 71245

By Courier Service: Grambling State University
Purchasing Department
PO Box 4269
Grambling, LA 71245

EXHIBIT E INDEMNIFICATION AGREEMENT

The _____{Contractor/Lessee} agrees to protect, defend, indemnify, save, and hold harmless, Grambling State University, 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/Lessee}, its agents, servants, and employees, or any and all costs, expenses and/or attorney fees incurred by _____{Contractor/Lessee} 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/Lessee} 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.

Accepted by _____
Company Name

_____
Signature

_____
Title

Date Accepted _____

Is Certificate of Insurance Attached? _____Yes _____No

Contract No. _____for **Grambling State University State Agency**

PURPOSE OF CONTRACT: _____

_____

_____

BID BOND

FOR

GRAMBLING STATE UNIVERSITY PROJECTS

Date:

KNOW ALL MEN BY THESE PRESENTS:

That_____ of_____, as Principal, and as Surety, are held and firmly bound unto GRAMBLING STATE UNIVERSITY (Obligee), in the full and just sum of five (5%) percent of the total amount of this proposal, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

_____

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

_____ _____

PRINCIPAL (BIDDER) SURETY

BY: _____ BY: _____

AUTHORIZED OFFICER-OWNER-PARTNER AGENT OR ATTORNEY-IN-FACT(SEAL)

INSURANCE-STATEMENT

This is to certify that we carry the Workmen's Compensation, Employer's Liability Insurance, General Liability Insurance, and Automobile Liability Insurance as outlined above with:

Liability Insurance Company: _____

Auto Liability Company Insurance: _____

Workers Compensation Insurance Company: _____

Grambling State University to be named as additional insured on Insurance Certificate provided for this contract for Liability Coverage and Auto Liability Coverage. Grambling State University shall be granted a waiver of subrogation for all Insurance Policies.

Business Name: _____

Business Address: _____ Phone No.: _____

Authorized Signature of Bidder: _____ Date: _____

Printed Name: _____ Title: _____

Email Address: _____

CERTIFICATION STATEMENT

The undersigned hereby acknowledges she/he has read and understands all requirements and specifications of the Invitation for Bid (IFB), including any attachments.

OFFICIAL CONTACT. The University requests that the Bidder designate one person to receive all documents and the method in which the documents are best delivered. Identify the Contact name and fill in the information below: (Print Clearly)

Date	_____ Official Contact Name:	
A.	E-mail Address	
B.	Telephone Number with area code:	(_____)

Bidder certifies that the above information is true and grants permission to the University to contact the above-named person or otherwise verify the information provided. By its submission of this Proposal and authorized signature below, Bidder certifies that:

1. The information contained in its response to this IFB is accurate;

2. Bidder complies with each of the mandatory requirements listed in the IFB and will meet or exceed the requirements specified therein; Bidder agrees to provide all tasks, services, and deliverables listed in Scope of Services for the total cost stated on Bid Form

3. Bidder accepts the procedures, evaluation criteria, mandatory contract terms, and all other administrative requirements set forth in this IFB.

4. Bidder confirms that its bid will be considered valid until award is made.

5. In making this bid, each Bidder represents that: They have read and understand the bid documents and the bid is made in accordance herewith, and the bid is based upon the specifications described in the bid documents without exception.

6. Bidder certifies, by signing and submitting a proposal for $25,000 or more, that their company, any subcontractors, or principals are not suspended or debarred by the General Services Administration (GSA) in accordance with the requirements in OMB Circular A-133. (A list of parties who have been suspended or debarred can be viewed via the internet at https://sam.gov/content/home.)

7. **FEDERAL CLAUSES, IF APPLICABLE**: Should Federal Funds be utilized in this procurement transaction, the following clauses apply:

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.

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 Federal Contracts, Grants or Loans of Facilities included on the EPA list of Violating Facilities.

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).

CLEAN WATER ACT: 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.

ANTI-LOBBYING AND DEBARMENT ACT: The contractor will be expected to comply with Federal Statues required in the Anti Lobbying Act and the Debarment Act.

Professional Job Title:		
Official Company Name:		
Federal Identification Number:		
Street Address:		
City:	State:	Zip:

SIGNATURE of Bidder's Authorized Representative: _____

(Signature MUST be HAND SIGNED and should be in Blue ink)

Date: _____

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: **Grambling State University**
Facilities Management and Campus Services
1 Facilities Drive
Grambling, LA 71245
(Owner to provide name and address of owner)

BID FOR: **Roadway Reconstruction, College Avenue**
(*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: _____ _____ and dated: _____
(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 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A Dollars ($ N/A)

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

N/A Dollars ($ N/A)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* 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: **Grambling State University**
Facilities Management and Campus Services
1 Facilities Drive
Grambling, LA 71245
(Owner to provide name and address of owner)

BID FOR: **Roadway Reconstruction, College Avenue**
(Owner to provide name of project and other identifying information)

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.# _ 1-1/2" min. thickness Superpave (Level 1) Asphaltic Concrete (Wearing Course)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
1	2,622	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# ___ 1-1/2 min. thickness Superpave (Level 1) Asphaltic Concrete (Base Course)			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
2	2,622	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# _ 2" min. thickness Superpave (Level 1) Asphaltic Concrete (Base Course)_			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
3	1,872	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# __ 12" min. thickness soil cement base treatment (7% by volume)_			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
4	2,622	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# ___ 2" min. cold plane asphalt			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
5	1,872	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# __ 3" min. cold plane asphalt			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
6	2,622	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# ___ Pavement patching			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
7	16	Square Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# __ 4" wide white edge striping_			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
8	3,194	Linear Foot		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# 4” wide yellow double centerline striping___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
9	1,469	Linear Foot		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# ___ 24” wide painted stop bar			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
10	51	Linear Foot		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# Shoulder material (RAP or crushed stone)__			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
11	15	Cubic Yard		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# _ Water valve adjustment__			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
12	2	Each		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# _ Painted crosswalk__			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
13	1	Lump Sum		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# _ Construction layout__			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
14	1	Lump Sum		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# __ Temporary signs, barricades, and traffic control_			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
15	1	Lump Sum		

DESCRIPTION:	☑ Base Bid or ❑ Alt.# __ Mobilization_			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
16	1	Lump Sum		

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.

Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See ***Specific Instructions*** on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

2 Business name/disregarded entity name, if different from above.

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

5 Address (number, street, and apt. or suite no.). See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person**	**Date**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

BID SUBMISSION CHECKLIST

___Certification statement w/original signature

___Certificate of Insurance

_____ Bid prices provided on the bid sheet(s) provided

_____Illustrative literature for items offered as equivalent

BID SUBMISSION DEADLINE:

Bid submissions for this solicitation are **due on June 9, 2026 by 2:00PMCST** – must be received electronically at purchasingbids@gram.edu. There are no exceptions to this deadline.

BID OPENING:

The public bid opening will take place on **6/9/2026 at 2:35PMCST** on Zoom, which is available for viewing by registering at: https://us06web.zoom.us/j/81180418887?pwd=03SKMM2bYA69RMKRxMX22aPQgcymbI.1

ZOOM MEETING ID: 811 8041 8887 **PASSWORD: 688268**

Opening of the bid submissions begins at five (5) minutes past the hour.

For further information about the bid or to view job/delivery site, prospective bidder is to email the Purchasing Staff Members Contact Information provided on page 1

BID SHEET (continued)

PAYMENT OF TAXES

Grambling State University is exempt from all Louisiana state and local sales and use taxes and will not pay taxes delineated on invoices for items, services, or work under this solicitation or any other project. Grambling State University is a tax-exempt State Agency. However, that tax-exempt status does not transfer to its contractors, subcontractors, suppliers or vendors for their use in purchasing materials to be procured under this solicitation.

ADDENDA ACKNOWLEDGEMENT(S)

BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA (if applicable):

ADDENDUM NO. ____ DATED: _____

ADDENDUM NO. ____ DATED: _____

ADDENDUM NO. ____ DATED: _____

FIRM NAME _____

LOUISIANA CONTRACTOR's LICENSE NUMBER:_____

SIGNED BY (signature)_____

SIGNED BY (printed) _____

By submitting your bid, you are acknowledging that you understand and agree that your company is capable of supplying the products/services in the timeline you have provided for the price(s) submitted in your bid.

Grambling State University reserves the right to reject any or all bids submitted.

GRAMBLING STATE UNIVERSITY

STANDARDIZED IFB LANGUAGE

1. **CHANGES IN THE WORK:** A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a Change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any Change Order not signed by the Owner will be considered null and void.

   The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order and shall be performed under the applicable conditions of the Contract Documents.

   When the Change Order is negotiated it shall be fully documented and itemized as to cost, including material quantities, material costs, insurance, employee benefits, other related costs, profit and overhead, and will be processed in accordance with LA R.S. 38:2222.

2. **QUALIFICATION REQUIRMENTS FOR COMPANIES SUBMITTING A BID:** All contractors submitting a bid for this contract shall meet these requirements listed below. Please include documentation in your bid submission that addresses each requirement. Submit the Bid including Unit Prices, Equipment List Breakout, executed & sworn; obtain and maintain throughout the term of the Contract, all required licenses, permits, certificates, insurances, performance and payment bonds, and agency signoffs to perform the Contract; demonstrate that it is an organization doing business for a minimum of three years prior to the Bid Opening Date; Must be an authorized dealer for all the Equipment; provide Bid Security – either a 5% percent Bid Bond.

3. **PERFORMANCE BOND LABOR AND MATERIAL PAYMENT BOND**: Performance and Payment Bonds shall be required on projects with an expected cost greater than $50,000. Performance and Payment Bonds, when required, shall be provided in an amount of 50% of the contract price. Performance and Payments Bonds shall be required by the successful bidder.

   Any surety bond required shall be written by a surety or insurance company currently on the U. S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register. For any Public Works projects, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U. S. Department of the Treasury Financial Management Service list. The surety bond written for a Public Works project shall be written by a surety or insurance company that is currently licensed to do business in the State of Louisiana**. PLEASE NOTE THAT A BID BOND MUST BE SIGNED BY THE AGENT OR ATTORNEY-IN-FACT OF THE SURETY.**

   The bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power.

   Contractor shall be licensed and certified as required by the State of Louisiana Secretary of State, and all other applicable agencies. Documentation to be provided within five (5) days after receipt of request from the University.

   Contractor awarded the bid shall provide a copy of their insurance certificate indicating proof of coverage as required in the insurance section of these bid within five (5) days from receipt of request.

4. **SUBSTITUTIONS:** Each bidder represents that his bid is based upon the materials and equipment described in the bidding documents.

5. **MANUFACTURER'S NUMBERS OR TRADE NAMES:** Where a manufacturer's product is named or specified, it is understood that "or equal" shall apply, whether stated or not. Such name and number is meant to establish the standard of quality desired and does not restrict bidders to the specific brand, make, manufacturer, or specification named; and are set forth and convey to prospective bidders the general style, type, character, and quality of product desired; and that equal products will be acceptable. Grambling State University shall be sole judge as to whether or not the material is equal to that specified.

6. **EXAMINATION OF BIDDING DOCUMENTS:** Each bidder shall examine the bidding documents carefully and, no later than seven days prior to the date for receipt of bids, shall make written request to the Owner for interpretation or correction of any ambiguity, inconsistency or error therein which he may discover. Any interpretation or correction will be issued as an Addendum by the Owner. Only a written interpretation or correction by Addendum shall be binding. No bidder shall rely upon any interpretation or correction given by any other method.

7. **INQUIRY PROCESS**: Contractors shall direct all inquiries, requests for information, requests for clarification, etc. in writing to the Grambling State University Purchasing Department. Inquiries may be emailed to Erin Walker at walkere@gram.edu. **The last day to receive inquires shall be by the close of business May 29, 2026.**

8. **CONTRACT COORDINATORS FOR THE UNIVERSITY:** The University will assign a contract coordinator for this contract. The University may assign one or more University employees to supervise and or coordinate work activities to be performed under this contract. The Contractor awarded the bid shall be provided the name(s) of University employee supervisors.

9. **AWARDS:** Awards may not be made to any person, firm, or company in default of any contract. Said person, firm, or company shall be considered non-responsible bidders and may be reinstated and awards made to them only after they have given evidence of good faith and have satisfactorily completed their obligations.

10. **PUBLICIZING AWARDS:** Written notice of award shall be sent to the successful bidder. In procurement over $50,000,each unsuccessful bidder shall be notified of the award provided that he/she submitted with his/her bid in and email requesting this information to purchasingbids@gram.edu. Notice of award will be made a part of the procurement file.

11. **RIGHT TO PROTEST:** Any person who is aggrieved in connection with the solicitation or award of a contract shall protest to the Director Purchasing. Protests with respect to a solicitation shall be submitted in writing at least (2) two days prior to the opening of bids on all matters except housing of state agencies, their personnel, operations, equipment, or activities pursuant to R.S. 39:1643 for which such protest shall be submitted at least (10) ten days prior to the opening of bids. Protests with respect to the award of a contract shall be submitted in writing within (14) fourteen days after contract award.

12. **AUTHORITY TO RESOLVE PROTESTS**: Prior to the commencement of an action in court concerning any controversy, the Director of Purchasing or his/her designee shall have the authority, to resolve the protest of any aggrieved person concerning the solicitation or award of a contract. This authority shall be exercised in accordance with regulations.

13. **REJECTION OF BIDS:** The Bidder acknowledges the right of the University to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the University to reject a bid if the Bidder failed to furnish any required bid security, or to submit the data required by the bidding documents, or if the bid is in any way incomplete or irregular.

14. **NORMAL / ROUTINE SCHEDULE**: The Contractor shall provide complete services Monday thru Thursday every week, from 8:00 AM to 4:00 PM.

15. **CONTRACTOR'S LICENSE:** On any bid amounting $50,000 or more, the Contractor shall certify that she/he is licensed under Act 377 of the 1976 Louisiana Regular Legislative Session and show the contractor license number and the bid number on the front portion of the envelope; except projects financed, partially or wholly, with Federal Funds, provided that any successful Bidder before signing Contract thereon, files application for a license and pays the fee as provided in this Act and complies with all terms and provisions of this Act and with the rules and regulations of the Licensing Board.

    A subcontractor who wishes to bid or perform commercial work where the total cost of the project including labor and materials for the following must be licensed:
    - $50,000 or more for major and specialty classifications
    - $10,000 or more for electrical, mechanical, and plumbing
    - $1 or more for hazardous

16. **CONTRACTOR'S AFFIDAVIT:** In accordance with the Louisiana R.S. 38:2190 -2220, if the Contract is awarded to the successful Bidder, the Bidder shall, at the time of the signing of the Contract, execute the Contractor's Affidavit included in the Contract Documents.

17. **INTEREST:** There shall be no payment of interest on money owed.

18. **SECURITY REQUIREMENTS:** The University may allow the contractor to store tools, equipment, materials, supplies, etc. on site at University facilities, however, the University in no way warrants the security of any of this property. The Contractor shall be responsible for security of their property. The University may allow the Contractor to store tools, equipment, supplies, and materials on site at University facilities in designated storage areas. The University reserves the right to change these designated areas as needed and additionally the University is not required to provide these storage areas. The Contractor shall be required to keep all designated areas in a neat / orderly manner. The Contractor shall be required to provide insurance coverage for all equipment stored on site at Grambling. The contractor assumes all risk with storing tools, equipment, and materials on site at University facilities. The University shall not be responsible for theft, damage, or other harm to any property of the contractor securing any property.

19. **DAMAGES TO FACILITIES:** Contractor shall be responsible for all damages to the existing site, facilities, furniture, and equipment that are caused by this project. The contractor shall carefully document existing site conditions and existing damages prior to commencing work. The contractor shall repair all damage to its original, undamaged condition prior to completing this project

20. **CONTRACTOR EMPLOYEE REQUIREMENTS**: Contractor shall provide a sufficient amount of adequately trained staff to perform all required services in a timely manner.

21. **Supervision and Professional Conduct**-

The Supervisor shall be responsible for communicating work schedules with the University's designated contract coordinator.

The Supervisor shall be present at all times when any contractor personnel are working at Grambling. The contractor shall designate employees who may fill in for the supervisor if the supervisor is absent for any reason. The University shall be notified by telephone and email as soon as possible if the normal supervisor will be absent. This notification shall be made no later than one hour after the normal work day schedule begins. The contractor shall provide complete contact information for the supervisors and the personnel designated as "back up" supervisors. The contractor shall provide the supervisors with a mobile cellular phone and shall provide the University with the phone number for the cellular phone so that the University can reach the supervisor at any time.

The University reserves the right to require the contractor to remove any contract employee who is not dressed appropriately or who is not taking care of their personal hygiene from any or all buildings employed under the contract when the University deems it to be in the University's best interest. Contractor's employees shall maintain a neat, clean, and professional appearance at all times. Contractor's employees shall wear clothing identifying the name of their company. The contractor shall be responsible for furnishing a replacement employee who also shall meet all previously stated requirements in the event of sickness or absence of the regular worker and notify the University contract coordinator of that replacement.

Contractor's employees will be able to use McCall Dining Hall for lunch. Pricing varies during the summer. The contractor, sub-contractors, material suppliers, and all workers associated with the project shall use University facilities such as restrooms, break rooms, vending machines, etc. The contractor shall supply a portable restroom for their employees to use.

Contractor's employees shall adhere to the university's tobacco-free policy. See GSU's tobacco use policy for detailed information at https://www.gram.edu/student-life/judicial-affairs/docs/Tobacco-Free%20Policy-2013-1.pdf

22. **SUPPLIES, MATERIALS, TOOLS, AND EQUIPMENT REQUIRED FORTHIS CONTRACT:** The Contractor must provide all supplies, materials, tools, equipment, etc. necessary to complete the requirements of this contract. In no case will the University be required to provide / supply any of these items. The tools and equipment provided shall be maintained in optimum condition at all times. Specifically, the tools and equipment provided shall include but not be limited to. Equipment and tools used for this contract shall be professional equipment / tools in good working condition. Contractor shall utilize equipment and tools that provide the least amount of interruption to normal building operations (very noisy equipment shall not be used, equipment that creates objectionable fumes shall not be used, etc.). The University reserves the right to deny the Contractor use of a certain tool or piece of equipment if the University deems that tool or piece of equipment to cause an unacceptable interruption. Contractor must have an adequate supply of appropriate equipment and tools to efficiently provide service to all facilities included in this contract. Furthermore, the Contractor must have backup equipment / tools that are immediately ready for use in the event that the normally used equipment / tool fails to operate, is lost / stolen, etc. A delay in service is not

acceptable due to equipment / tool failure or loss.

23. **SUPPLIES / MATERIALS**: Contractor shall supply and provide all needed materials to complete the scope of services. The quality of these materials shall meet or exceed the quality of materials currently being used at these facilities. Contractors are encouraged to inspect each facility prior to submitting a bid to ensure that the quality of materials in their bid meets or exceeds the quality of materials I supplies currently used.

24. **SAFETY / ENVIRONMENTAL / PUBLIC HEALTH COMPLIANCE REQUIREMENTS:** The Contractor shall emphasize that safety is the most important part of this contract. The goal of the contract is to provide safe and sanitary facilities for the University community. We want to ensure that the Contractor has a proactive approach to working safely and a written safety program that their employees are trained on. Additionally, we expect the Contractor to strictly comply with all applicable rules, guidelines, laws, requirements, etc. The University shall require the Contractor to take immediate action to remedy any deficiencies / areas of non-compliance.

Occupational Safety and Health Act (OSHA) Compliance - the Contractor shall meet or exceed all OSHA requirements, rules, laws, guidelines. Environmental Protection Agency (EPA) and Louisiana Department of Environmental Quality (LDEQ) Compliance the Contractor shall meet or exceed all EPA and / or LDEQ requirements, rules, laws, guidelines, etc.

Safety Program - the Contractor shall include a copy of their written safety program with their bid submission that covers all policies and procedures that pertain to compliance with safety / OSHA requirements.

Material Safety Data Sheets (MSDS) -the Contractor must keep a printed copy of a material safety data sheet for each chemical used to complete the requirements of this contract. The MSDS must be readily available and easily accessible to all employees.

25. **PAYMENTS AND COMPLETION and SUBSTANTIAL COMPLETION:** The Owner will issue a NOTICE OF ACCEPTANCE for the Contractor to record with the Clerk of Court in Lincoln Parish.

26. **FINAL COMPLETION AND FINAL PAYMENT:** The Contract is to provide that the contractor is not to be paid more than ninety percent (90%) of the amount of the contract upon completion of the work. The Contractor shall record the NOTICE OF ACCEPTANCE with the Lincoln Parish Clerk of Court and shall furnish a CLEAR LIEN CERTIFICATE from the Clerk of Court within forty-five days after recordation of NOTICE OF ACCEPTANCE. At that time, the remaining ten percent (10%) will be paid.

29. **LIQUIDATED DAMAGES:** The Owner will suffer financial loss if the Project is not substantially complete on the date set forth in the CONTRACT DOCUMENTS. The Contractor (and/or Surety) shall be liable for and shall pay to the Owner Liquidated Damages for each calendar day of delay until the work is Substantially Complete.

The Completion Time stated in Consecutive Calendar Days and the Liquidated Damages stated in ($250) two-hundred and fifty Dollars per Day are listed in the PROPOSAL FORM.

30. **PRICING REQUIREMENTS:** Pricing for all items shall be a complete, turnkey price and shall include but is not limited to: labor, equipment, tools, materials, supplies, insurance, permitting, taxes, and shipping.

31. **TAXES**: Applicable taxes are to be included in lump sum bid.

32. **INVOICING / PAYMENT TERMS:** The contractor will be required to submit an itemized monthly invoice, to Accounts Payable email address acctpayable@gram.edu. Monthly payments will be made by the Agency within approximately thirty (30) days after receipt of a properly executed invoice, and approval by the Agency.

All invoices must list the following information: the contract purchase order number, dates of services performed, building name and elevator number if applicable, a brief explanation of repair including any parts replaced. Invoices submitted without the requested documentation will not be approved for payment until the required information is provided.

STANDARDIZED INSURANCE REQUIREMENTS FOR STATE AGENCY CONTRACTS

EXHIBIT A
INSURANCE AND INDEMNIFICATION
REQUIREMENTS FOR CONTRACTORS

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. **WORKER 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. **COMMERICAL 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 Coverages**

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.

e. All property losses caused by the actions of the Contractor shall be adjusted with and made payable to the Agency.

f. Neither the acceptance of the completed work nor payment shall release the Contractor from the insurance requirements and indemnification agreement obligations.

g. Additional insurance may be required on an individual basis for hazardous activities and specific service agreements. If such additional insurance is required for a specific contract, that requirement should be added to the list of required coverages found in the appropriate Exhibit.

h. If the Contractor does not continue to comply with all of the insurance requirements at any time during the contract or at contract renewal, the Agency has the following options:

- Payments to the Contractor may be withheld until the requirements have been met;

- The Agency may pay any renewal policy premiums and withhold such payments from any monies due the Contractor;
- The Agency may suspend, discontinue or terminate the contract.

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 Coverages**
   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. 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.

H. **INDEMNIFICATION/HOLD HARMLESS AGREEMENT**: Contractor agrees to protect, defend, indemnify, save, and hold harmless, Grambling State University, 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 Grambling State University, 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.

TECHNICAL SPECIFICATIONS AND DRAWINGS

FOR

ROADWAY RECONSTRUCTION, COLLEGE AVENUE

PREPARED FOR

GRAMBLING STATE UNIVERSITY

MARCH 2026

PREPARED BY:
SHULER CONSULTING COMPANY
Civil Engineering Design & Consulting Services
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STATE OF LOUISIANA
E. HUNTER LANCASTER
REG. No. 30557
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING
3/18/26

ROADWAY RECONSTRUCTION,
COLLEGE AVENUE

FOR

GRAMBLING STATE UNIVERSITY

SCC PROJECT NO. 3570

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TECHNICAL SPECIFICATIONS

DIVISION 03

CONCRETE

CONCRETE REINFORCING

PART 1 GENERAL

1.1 SUMMARY

A. Related Documents:
   1. Drawings and general provisions of the Subcontract apply to this Section.
   2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes: Concrete reinforcement and accessories.

C. Related Sections:
   1. Division 01 Section "General Requirements."
   2. Division 01 Section "Special Procedures."

1.2 REFERENCES

A. General:
   1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
   2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
   3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.

B. ACI – American Concrete Institute:
   1. ACI 117 Tolerances for Concrete Construction
   2. ACI 301 Specifications for Structural Concrete
   3. ACI 315 Standard Practice for Detailing Reinforced Concrete Structures

C. ASTM International:
   1. ASTM A185 / A185M Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
   2. ASTM A615 / A615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
   3. ASTM A706 / A706M Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
   4. ASTM A970 / A970M Standard Specification for Headed Steel Bars for Concrete Reinforcement

D. CRSI - Manual of Standard Practice.

E. ICBO - Evaluation Reports.

1.3 SUBMITTALS

A. Submit under provisions of Division 01 Section "Submittal Procedures."

B. Shop Drawings: Prepare placing drawings in accordance with ACI 315. Show size, shape and location of bars and wire fabric in structure. Show splice locations and lengths. Where details are not shown, conform to standards of practice indicated in ACI 315 and submit for approval.
   1. Bill reinforcing bars for walls on elevations. Bill reinforcing bars for slabs on plans. Plans and elevations need not be true views. When more than one wall or slab are identical, only one such wall or slab is required. Take sections to clarify the arrangement of reinforcement. Identify, but do not bill bars on sections.
   2. Unless the location of reinforcing is clear, give dimensions to some structural feature that will be readily distinguishable at time bars are placed.
   3. Make placing drawings complete, including the location of support bars and chairs, without reference to the design drawings.

C. Submit data required to evaluate proposed mechanical splices.

D. Submit manufacturer's certified mill test reports on each heat of reinforcing steel delivered, showing physical and chemical analysis before placing reinforcement.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of ACI 301 CRSI's "Manual of Standard Practice", except where more stringent requirements are shown or specified.

B. Requirements of Regulatory Agencies: Proprietary products, including bar couplers, shall have an active ICBO Evaluation Report.

C. Material Quality Assurance: Mill test reports including chemical analysis, tensile properties and bend test shall be examined for all reinforcing. Conform to one of the following:

D. Maintain positive identification of reinforcing by heat number. Provide certified mill test reports to Testing Laboratory.

E. Where positive identification cannot be made and procedures are not deemed adequate to ensure compliance, Testing Laboratory will randomly sample and make one tensile and one bend test from each 2-1/2 tons or fraction thereof of each size of reinforcement. Subcontractor will bear the cost of testing.

PART 2 PRODUCTS

2.1 REINFORCING MATERIALS

A. Bar Reinforcement: ASTM A615, Grade 60, deformed billet bars.
   1. ASTM A706, where noted on Drawings.
   2. Recycled content shall be a minimum of 75 percent recycled post consumer steel.

B. Headed Bar Reinforcement: ASTM A970.

C. Spirals: ASTM A82.

D. Welded Wire Fabric: ASTM A185.

E. Threaded Bars: Grade 75, manufactured by DYWIDAY Systems International, Williams Form Engineering Corp. or equal substituted per Division 1.

F. Smooth Dowels, ASTM A615, Grade 40 or 60, smooth; sawcut or grind one end to remove offsets; shop paint with iron oxide zinc chromate primer.

G. Welded Deformed Bar Anchors: ASTM A-108 f_y = 70,000 psi, flux-filled deformed bar anchors welded to structural steel as shown; Nelson D2L, or equal substituted per Division 1.

H. Mechanical Bar Couplers: Provide mechanical couplers with a current ICC evaluation report. Coupler shall develop 160% percent of specified minimum yield strength of spliced reinforcement. Subject to compliance with requirements provide one of the following, or approved equal:
   1. Barteck, Dextra Inc.
   2. Lenton Taper Threaded Connection, Erico Inc.
   3. Bar Lock, Dayton Superior Inc.

2.2 ACCESSORIES

A. Tie Wire: Minimum 16-gage black annealed wire.

B. Bar Supports:
   1. At surfaces not exposed to view in completed structure: Precast concrete bar supports with two 16 ga. embedded wires or CRSI Class 2 wire supports.
   2. Supports placed against ground or on top of vapor barrier: Precast concrete blocks not less than 3 inches square (1935 mm²) with two 16 ga. embedded wires.
   3. At Architectural Concrete and surfaces exposed to weather: CRSI Class 2 stainless steel or CRSI Class 1 plastic protected.
   4. Where support is no closer to concrete surface than 1/2 inch (13 mm): CRSI Class 3 wire supports.

2.3 FABRICATION

A. Fabricate reinforcement in accordance with ACI 315 where specific details are not shown.

PART 3 EXECUTION

3.1 PLACEMENT

A. Surface Condition of Reinforcement: Before placing concrete, clean reinforcement of loose scale, dirt, grease and other substances which would impair bond with concrete.

B. Place reinforcement in accordance with the Drawings and the CRSI Manual.
   1. Steel bars shall be of size and length indicated, accurately bent or formed to shapes detailed or scheduled by experienced shops by methods that will not injure the materials. Reinforcing bars shall be shop fabricated to lengths and bends shown on the drawings. Fabrication tolerance shall be in accordance with the requirements of ACI 315.
   2. Reinforcing bars shall be as long as possible with a minimum number of joints.
   3. Steel reinforcement shall not be bent or straightened in a manner that will injure the material or the embedding concrete. Bars with kinks or bends not shown on the Drawings shall not be used. Heating of reinforcement for bending will not be permitted.
   4. Reinforcement shall be tagged with suitable identification to facilitate sorting and placing.

C. Place reinforcing bars accurately as to spacing and clearance and securely tied at intersections and supports with wire and in such a manner as will preclude displacement during pouring of concrete. Placing tolerances shall be in conformance with the requirements of ACI 117.

D. Place and secure reinforcement to maintain the proper distance and clearance between parallel bars and from the forms. Provide vertical steel with metal spreaders to maintain steel properly centered in the forms. Horizontal reinforcement shall be supported at proper height on concrete pads, chairs or transverse steel bars.

E. After placing, maintain bars in a clean condition until completely embedded in concrete.

F. Bars shall not be spaced closer than 1-1/2 diameters of the largest of two adjacent bars, 1-1/2 times the maximum aggregate size, nor one inch, except at bar laps. Where reinforcement in members is placed in two layers, the clear distance between layers shall be not less than one inch (25 mm) or more than 1-1/2 inches (13 mm) unless otherwise noted on the drawings. The bars in the upper layer shall be placed directly above those in the bottom layer unless otherwise detailed.

G. Coverage of bars shall be as shown and scheduled. Conform to ACI 301 where not indicated.

H. Where obstruction prevents the intended placement of reinforcement, provide additional reinforcement as directed by the University around the obstruction.

I. Splice bars as indicated by lapping and securely wiring together. Splices at locations other than those indicated are subject to the approval of the University. Splices of reinforcement shall not be made at the point of maximum stress. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear. Bars shall be spread the minimum distance specified. Stagger splices of adjacent bars where possible.

J. Reinforcing bars shall not have welded joints.

K. Mechanical Bar Couplers: Install in accordance with applicable ICC evaluation report. Maintain clearance and coverage at coupler. Stagger couplers wherever practical.

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor and materials required and install cast-in-place concrete complete as shown on the Drawings and as specified herein.

B. Furnish all sampling and testing of products and materials by an independent testing laboratory acceptable to the Engineer but engaged by and at the expense of the Contractor.

1.02 RELATED WORK

A. Concrete Reinforcing is included in Section 03 20 00.

1.03 SUBMITTALS

A. Submit to the Engineer, in accordance with Section 01 33 00, shop drawings and product data shall include the following:

1. Sources of cement and aggregates.

2. Material Safety Data Sheets (MSDS) for all concrete components and admixtures.

3. Air-entraining admixture. Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations and conformity to ASTM standards.

4. Water reducing admixture. Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations and conformity to ASTM standards.

5. High range water-reducing admixture (plasticizer). Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations, retarding effect, slump range and conformity to ASTM standards. Identify proposed locations of use.

6. Sheet curing material. Product data including catalogue cut, technical data and conformity to ASTM standard.

7. Liquid curing compound. Product data including catalogue cut, technical data, storage requirements, product life, application rate and conformity to ASTM standards. Identify proposed locations of use.

B. Samples

1. Fine and coarse aggregates if requested for examination by the Engineer.

C. Test Reports

1. Sieve analysis, mechanical properties and deleterious substance content for coarse and fine aggregate.

2. Chemical analysis and physical tests of each type of cement.

3. Concrete mix for each formulation of concrete proposed for use including constituent quantities per cubic yard, water cementitious ratio, concrete slump, type and manufacturer of cement.

   a. Standard deviation data for each proposed concrete mix based on statistical records.

   b. Water cementitious ratio curve for concrete mixes based on laboratory tests. Give average cylinder strength test results at 28 days for laboratory concrete mix designs. Provide results of 7 and 14 day tests if available.

D. Certifications

1. Certify admixtures used in the same concrete mix are compatible with each other and the aggregates.

2. Certify admixtures are suitable for use in contact with potable water after 30 days of concrete curing.

3. Certify curing compound is suitable for use in contact with potable water after 30 days (non-toxic and free of taste or odor).

4. Certify the Contractor is not associated with the independent testing laboratory nor does the Contractor or its officers have a beneficial interest in the laboratory.

5. Shrinkage test reports.

E. Qualifications

1. Independent testing laboratory: Name, address and qualifications. Laboratories affiliated with the Contractor or in which the Contractor or its officers have a beneficial interest are not acceptable.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

2. ASTM C33 - Standard Specification for Concrete Aggregates.

3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

4. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

5. ASTM C94 - Standard Specification for Ready-Mixed Concrete.

6. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete

7. ASTM C150 - Standard Specification for Portland Cement

8. ASTM C157 -Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete

9. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete

10. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.

11. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

12. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.

13. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

14. ASTM C311 - Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland-Cement Concrete.

15. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.

16. ASTM C596 - Standard Test Method for Drying Shrinkage of Mortar Containing Portland Cement.

17. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

B. American Concrete Institute (ACI).

1. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.

2. ACI 304R - Guide for Measuring, Mixing, Transporting and Placing Concrete.

3. ACI 304.2R - Placing Concrete by Pumping Methods.

4. ACI 305R - Hot Weather Concreting.

5. ACI 306R - Cold Weather Concreting.

6. ACI 318 - Building Code Requirements for Reinforced Concrete.

7. ACI 350R - Environmental Engineering Concrete Structures.

C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. Only one source of cement and aggregates shall be used. Concrete shall be uniform in color and appearance.

B. Well in advance of placing concrete, discuss with the Engineer the sources of individual materials and batched concrete proposed for use. Discuss placement methods, waterstops and curing. Propose methods of hot and cold weather concreting as required.

C. If, during the progress of the work, it is impossible to secure concrete of the required workability and strength with the materials being furnished, the Engineer may order such changes in proportions or materials, or both, as may be necessary to secure the desired properties. All changes so ordered shall be made at the Contractor's expense.

D. If, during the progress of the work, the materials from the sources originally accepted change in characteristics, the Contractor shall, at his/her expense, make new acceptance tests of aggregates and establish new design mixes. Such testing and design shall be accomplished with the assistance of an independent testing laboratory acceptable to the Engineer.

E. Reinforced concrete shall comply with ACI 318, the recommendations of ACI 350R and other stated requirements, codes and standards.

F. All field testing and inspection services required will be provided by the Owner. The cost of such work, except as specifically stated otherwise, shall be paid for by the Owner. Methods of testing will comply with the latest applicable ASTM methods.

G. Samples of constituents and of concrete as-placed will be subjected to laboratory tests. All materials incorporated in the work shall conform to accepted samples.

1.06 DELIVERY, STORAGE AND HANDLING

A. Cement: Store in weathertight buildings, bins or silos to provide protection from dampness and contamination and to minimize warehouse set.

B. Aggregate: Arrange and use stockpiles to avoid excessive segregation or contamination with other materials or with other sizes of like aggregates. Build stockpiles in successive horizontal layers not exceeding 3-ft in thickness. Complete each layer before the next is started. Do not use frozen or partially frozen aggregate.

C. Sand: Arrange and use stockpiles to avoid contamination. Allow sand to drain to a uniform moisture content before using. Do not use frozen or partially frozen aggregates.

D. Admixtures: Store in closed containers to avoid contamination, evaporation or damage. Provide suitable agitating equipment to assure uniform dispersion of ingredients in admixture solutions which tend to separate. Protect liquid admixtures from freezing and other temperature changes which could adversely affect their characteristics.

E. Sheet Curing Materials: Store in weathertight buildings or off the ground and under cover.

F. Liquid Curing Compounds: Store in closed containers.

1.07 Construction Tolerances: The CONTRACTOR shall set and maintain concrete forms and perform finishing operations so as to ensure that the completed work is within the tolerances specified herein. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the specified permissible variation from lines, grades, or dimensions shown. Where tolerances are not stated in the specifications, permissible deviations will be in accordance with ACI 117.

1. The following construction tolerances are hereby established and apply to finished walls and slab unless otherwise shown: All tolerances must comply with manufacturer's requirements. The elevation of the aeration basins

and clarifiers top of wall cannot vary more than 1/4-inch throughout the entire circumference.

Item	Tolerance
Variation of the constructed linear outline from the established position in plan.	In 10 feet: 1/4-inch; In 20 feet or more: ½-inch
Variation from the level or from the grades shown.	In 10 feet: 1/4-inch In 20 feet or more: ½-inch
Variation from the plumb.	In 10 feet: 1/4-inch In 20 feet or more: ½-inch
Variation in the thickness of slabs and walls.	Minus 1/4-inch; Plus ½-inch
Variation in the locations and sizes of slabs and wall openings.	Plus or minus 1/4-inch

PART 2 PRODUCTS

2.01 GENERAL

A. The use of manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.

B. Like items of materials shall be the end products of one manufacturer in order to provide standardization for appearance, maintenance and manufacturer's service.

2.02 MATERIALS

A. Materials shall comply with this Section and any applicable State or local requirements.

B. Cement: Domestic portland cement complying with ASTM C150. Air entraining cements shall not be used. Cement brand shall be subject to approval by the Engineer and one brand shall be used throughout the Work. The following cement type(s) shall be used:

1. Class A & B Concrete - Type I

2. Class D Concrete - Type II

C. Fine Aggregate: Washed inert natural sand conforming to the requirements of ASTM C33.

D. Coarse Aggregate: Well-graded crushed stone or washed gravel conforming to the requirements of ASTM C33. Grading requirements shall be as listed in ASTM C33 Table 2 for the specified coarse aggregate size number. Limits of Deleterious Substances and Physical Property Requirements shall be as listed in ASTM C33 Table 3 for severe weathering regions. Size numbers for the concrete mixes shall be as shown in Table 1 herein.

E. Water: Potable water free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

F. Admixtures: Admixtures shall be free of chlorides and alkalis (except for those attributable to water). When it is required to use more than one admixture in a concrete mix, the admixtures shall be from the same manufacturer. Admixtures shall be compatible with the concrete mix including other admixtures and shall be suitable for use in contact with potable water after 30 days of concrete curing.

1. Air Entraining Admixture: The admixture shall comply with ASTM C260. Proportioning and mixing shall be in accordance with manufacturer's recommendations.

2. Water Reducing Agent: The admixture shall comply with ASTM C494, Type A. Proportioning and mixing shall be in accordance with manufacturer's recommendations.

3. High-Range Water Reducer (Plasticizer): The admixture shall comply with ASTM C494, Type F and shall result in non-segregating plasticized concrete with little bleeding and with physical properties of low water/cement ratio concrete. The treated concrete shall be capable of maintaining plastic state in excess of 2 hours. Proportioning and mixing shall be in accordance with manufacturer's recommendations.

4. Admixtures causing retarded or accelerated setting of concrete shall not be used without written approval from the Engineer. When allowed, the admixtures shall be retarding or accelerating water reducing or high range water reducing admixtures.

G. Sheet Curing Materials. Waterproof paper, polyethylene film or white burlap-polyethylene sheeting all complying with ASTM C171.

H. Liquid Curing Compound. Liquid membrane-forming curing compound shall comply with the requirements of ASTM C309, Type 1-D (clear or translucent with fugitive dye) and shall contain no wax, paraffin, or oil. Curing compound shall be approved for use in contact with potable water after 30 days (non-toxic and free of taste or odor).

2.03 MIXES

A. Development of mix designs and testing shall be by an independent testing laboratory acceptable to the Engineer engaged by and at the expense of the Contractor.

B. Select proportions of ingredients to meet the design strength and materials limits specified in Table 1 and to produce concrete having proper placability, durability, strength, appearance and other required properties. Proportion ingredients to produce a homogenous mixture which will readily work into corners and angles of forms and around reinforcement without permitting materials to segregate or allowing excessive free water to collect on the surface.

C. The design mix shall be based on standard deviation data of prior mixes with essentially the same proportions of the same constituents or, if not available, be developed by laboratory tests. Water content of the concrete shall be based on a curve showing the relation between water cementitious ratio and 7 and 28 day compressive strengths of concrete made using the proposed materials. The curves shall be determined by four or more points, each representing an average value of at least three test specimens at each age. The curves shall have a range of values sufficient to yield the desired data, including the compressive strengths specified, without extrapolation. The water content of the concrete mixes to be used, as determined from the curve, shall correspond to strengths 16 percent greater than the required design strengths. The resulting mix shall not conflict with the limiting values for maximum water cementitious ratio and net minimum cementitious content as specified in Table 1.

D. Compression Tests: Provide testing of the proposed concrete mix or mixes to demonstrate compliance with the compression strength requirements in conformity with the provisions of ACI 318.

E. Shrinkage Tests: Perform shrinkage tests on the design mix for Class D concrete. The tests shall conform to ASTM C157 as modified by ASTM C596. Concrete and not mortar specimens shall be used.

1. The average shrinkage at 28 days of air storage shall not exceed 0.036 percent.

F. Entrained air, as measured by ASTM C231, shall be as shown in Table 1.

1. If the air entraining agent proposed for use in the mix requires testing methods other than ASTM C231 to accurately determine air content, make special note of this requirement in the admixture submittal required under Paragraph 1.03 above.

G. Slump of the concrete as measured by ASTM C143, shall be as shown in Table 1. If plasticizer is used, the slump indicated shall be that measured before plasticizer is added. Plasticized concrete shall have a slump ranging from 7 to 10-in.

H. Proportion admixtures according to the manufacturer's recommendations. Two or more admixtures specified may be used in the same mix provided that the admixtures in combination retain full efficiency and have no deleterious effect on the concrete or on the properties of each other.

TABLE 1

Class	Design Strength (1)	Cement (2)	Fine Aggregate (2)	Coarse Aggregate (3)	Cementitious Content (4)
A	2500	C150 Type I	C33	57	440
B	3000	C150 Type I	C33	57	480
D	4000	C150 Type II	C33	57	560
E	6000	C150 Type II	C33	57	600

Class	W/C Ratio (5)	AE Range (6)	WR (7)	Slump HRWR (8)	Range Inches
A	0.60 max.	3.5 to 5	Yes	No	1-4
B	0.50 max.	3.5 to 5	Yes	No	1-3
D	0.45 max.	3.5 to 5	Yes	No	3-4
E	0.40 max.	3.5 to 5	Yes	No	3-4

NOTES:

(1) Minimum compressive strength in psi at 28 days
(2) ASTM designation
(3) Size Number in ASTM C33
(4) Minimum cementitious content in lbs/cu yd
(5) W/C is Water Cementitious ratio by weight
(6) AE is percent air entrainment
(7) WR is water reducing admixture
(8) HRWR is high range water reducer

PART 3 EXECUTION

3.01 MEASURING MATERIALS

A. Concrete shall be composed of portland cement, fine aggregate, coarse aggregate, water and admixtures as specified and shall be produced by a plant acceptable to the Engineer. All constituents, including admixtures, shall be batched at the plant.

B. Measure materials for batching concrete by weighing in conformity with and within the tolerances given in ASTM C94 except as otherwise specified. Scales shall have been certified by the local Sealer of Weights and Measures within 1 year of use.

C. Measure the amount of free water in fine aggregates within 0.3 of a percent with a moisture meter. Compensate for varying moisture contents of fine aggregates. Record the number of gallons of water as-batched on printed batching tickets.

D. Admixtures shall be dispensed either manually using calibrated containers or measuring tanks, or by means of an automatic dispenser approved by the manufacturer of the specific admixture.

1. Charge air-entraining and chemical admixtures into the mixer as a solution using an automatic dispenser or similar metering device.

2. Inject multiple admixtures separately during the batching sequence.

3.02 MIXING AND TRANSPORTING

A. Concrete shall be ready-mixed concrete produced by equipment acceptable to the Engineer. No hand-mixing will be permitted. Clean each transit mix truck drum and reverse drum rotation before the truck proceeds under the batching plant. Equip each transit-mix truck with a continuous, nonreversible, revolution counter showing the number of revolutions at mixing speeds.

B. Ready-mix concrete shall be transported to the site in watertight agitator or mixer trucks loaded not in excess of their rated capacities as stated on the name plate.

C. Keep the water tank valve on each transit truck locked at all times. Any addition of water must be directed by the Engineer. Added water shall be incorporated by additional mixing of at least 35 revolutions. All added water shall be metered and the amount of water added shall be shown on each delivery ticket.

D. All central plant and rolling stock equipment and methods shall comply with ACI 318 and ASTM C94.

E. Select equipment of size and design to ensure continuous flow of concrete at the delivery end. Metal or metal-lined non-aluminum discharge chutes shall be used

and shall have slopes not exceeding 1 vertical to 2 horizontal and not less than 1 vertical to 3 horizontal. Chutes more than 20-ft long and chutes not meeting slope requirements may be used if concrete is discharged into a hopper before distribution.

F. Retempering of concrete or mortar which has partially hardened (that is, mixing with or without additional cement, aggregate, or water) will not be permitted.

G. Handle concrete from mixer to placement as quickly as practicable while providing concrete of required quality in the placement area. Dispatch trucks from the batching plant so they arrive at the work site just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms.

H. Furnish a delivery ticket for ready mixed concrete to the Engineer as each truck arrives. Each ticket shall provide a printed record of the weight of cement and each aggregate as batched individually. Use the type of indicator that returns for zero punch or returns to zero after a batch is discharged. Clearly indicate the weight of fine and coarse aggregate, cement and water in each batch, the quantity delivered, the time any water is added, and the numerical sequence of the delivery. Show the time of day batched and time of discharge from the truck. Indicate the number of revolutions of transit mix truck.

I. Temperature and Mixing Time Control

1. In cold weather (see Paragraph 3.06D below) maintain the as-mixed temperature of the concrete and concrete temperatures at the time of placement in the forms as indicated in Table 2.

2. If water or aggregate has been heated, combine water with aggregate in the mixer before cement is added. Do not add cement to mixtures of water and aggregate when the temperature of the mixture is greater than 90 degrees F.

3. In hot weather, cool ingredients before mixing to maintain temperature of the concrete below the maximum placing temperature of 90 degrees F. If necessary, substitute well-crushed ice for all or part of the mixing water.

4. The maximum time interval between the addition of mixing water and/or cement to the batch and the placing of concrete in the forms shall not exceed the following:

TABLE 2

AIR OR CONCRETE TEMPERATURE (WHICHEVER IS HIGHER) MAXIMUM TIME

(27 Degree C) 80 to 90 Degree F (32 Degree C)...45 minutes

(21 Degree C)	70 to 79 Degree F	(26 Degree C)...60 minutes
(5 Degree C)	40 to 69 Degree F	(20 Degree C)...90 minutes

If an approved high range water reducer (plasticizer) is used to produce plasticized concrete, the maximum time interval shall not exceed 90 minutes.

3.03 INSPECTION AND COORDINATION

A. The batching, mixing, transporting, placing and curing of concrete shall be subject to the inspection of the Engineer at all times. The Contractor shall advise the Engineer of his/her readiness to proceed at least 24 hours prior to each concrete placement. The Engineer will inspect the preparations for concreting including the preparation of previously placed concrete, the reinforcing and the alignment, cleanliness and tightness of formwork. No placement shall be made without the inspection and acceptance of the Engineer.

3.04 CONCRETE APPEARANCE

A. Concrete mix showing either poor cohesion or poor coating of the coarse aggregate with paste shall be remixed. If this does not correct the condition, the concrete shall be rejected. If the slump is within the allowable limit, but excessive bleeding, poor workability, or poor finishability are observed, changes in the concrete mix shall be obtained only by adjusting one or more of the following:

1. The gradation of aggregate.

2. The proportion of fine and coarse aggregate.

3. The percentage of entrained air, within the allowable limits.

B. Concrete for the work shall provide a homogeneous structure which, when hardened, will have the required strength, durability and appearance. Mixtures and workmanship shall be such that concrete surfaces, when exposed, will require no finishing. When concrete surfaces are stripped, the concrete when viewed in good lighting from 10-ft away shall be pleasing in appearance, and at 20-ft shall show no visible defects.

3.05 PLACING AND COMPACTING

A. Placing

1. Verify that all formwork completely encloses concrete to be placed and is securely braced prior to concrete placement. Remove ice, excess water, dirt and other foreign materials from forms. Confirm that reinforcement and other embedded items are securely in place. Have a competent workman at the location of the pour who can assure that reinforcement and

embedded items remain in designated locations while concrete is being placed. Sprinkle semi-porous subgrades or forms to eliminate suction of water from the mix. Seal extremely porous subgrades in an approved manner.

2. Deposit concrete as near its final position as possible to avoid segregation due to rehandling or flowing. Place concrete continuously at a rate which ensures the concrete is being integrated with fresh plastic concrete. Do not deposit concrete which has partially hardened or has been contaminated by foreign materials or on concrete which has hardened sufficiently to cause formation of seams or planes of weakness within the section. If the section cannot be placed continuously, place construction joints as specified or as approved.

3. Pumping of concrete will be permitted. Use a mix design and aggregate sizes suitable for pumping and submit for approval.

4. Remove temporary spreaders from forms when the spreader is no longer useful. Temporary spreaders may remain embedded in concrete only when made of galvanized metal or concrete and if prior approval has been obtained.

5. Do not place concrete for supported elements until concrete previously placed in the supporting element (columns, slabs and/or walls) has reached adequate strength.

6. Where surface mortar is to form the base of a finish, especially surfaces designated to be painted, work coarse aggregate back from forms with a suitable tool to bring the full surface of the mortar against the form. Prevent the formation of excessive surface voids.

7. Slabs

   a. After suitable bulkheads, screeds and jointing materials have been positioned, the concrete shall be placed continuously between construction joints beginning at a bulkhead, edgeform, or corner. Each batch shall be placed into the edge of the previously placed concrete to avoid stone pockets and segregation.

   b. Avoid delays in casting. If there is a delay in casting, the concrete placed after the delay shall be thoroughly spaded and consolidated at the edge of that previously placed to avoid cold joints. Concrete shall then be brought to correct level and struck off with a straightedge. Bullfloats or darbies shall be used to smooth the surface, leaving it free of humps or hollows.

c. Where slabs are to be placed integrally with the walls below them, place the walls and compact as specified. Allow 1 hour to pass between placement of the wall and the overlying slab to permit consolidation of the wall concrete. Keep the top surface of the wall moist so as to prevent cold joints.

8. Formed Concrete

a. Place concrete in forms using tremie tubes and taking care to prevent segregation. Bottom of tremie tubes shall preferably be in contact with the concrete already placed. Do not permit concrete to drop freely more than 4-ft. Place concrete for walls in 12 to 24-in lifts, keeping the surface horizontal. If plasticized concrete is used, the maximum lift thickness may be increased to 7-ft and the maximum free fall of concrete shall not exceed 15-ft.

B. Compacting

1. Consolidate concrete by vibration, puddling, spading, rodding or forking so that concrete is thoroughly worked around reinforcement, embedded items and openings and into corners of forms. Puddling, spading, etc, shall be continuously performed along with vibration of the placement to eliminate air or stone pockets which may cause honeycombing, pitting or planes of weakness.

2. All concrete shall be placed and compacted with mechanical vibrators. The number, type and size of the units shall be approved by the Engineer in advance of placing operations. No concrete shall be ordered until sufficient approved vibrators (including standby units in working order) are on the job.

3. A minimum frequency of 7000 rpm is required for mechanical vibrators. Insert vibrators and withdraw at points from 18 to 30-in apart. At each insertion, vibrate sufficiently to consolidate concrete, generally from 5 to 15 seconds. Do not over vibrate so as to segregate. Keep a spare vibrator on the site during concrete placing operations.

4. Concrete Slabs: Concrete for slabs less than 8-in thick shall be consolidated with vibrating screeds; slabs 8 to 12-in thick shall be compacted with internal vibrators and (optionally) with vibrating screeds. Vibrators shall always be placed into concrete vertically and shall not be laid horizontally or laid over.

5. Walls and Columns: Internal vibrators (rather than form vibrators) shall be used unless otherwise approved by the Engineer. In general, for each vibrator needed to melt down the batch at the point of discharge, one or

more additional vibrators must be used to densify, homogenize and perfect the surface. The vibrators shall be inserted vertically at regular intervals, through the fresh concrete and slightly into the previous lift, if any.

6. Amount of Vibration: Vibrators are to be used to consolidate properly placed concrete but shall not be used to move or transport concrete in the forms. Vibration shall continue until:

   a. Frequency returns to normal.

   b. Surface appears liquefied, flattened and glistening.

   c. Trapped air ceases to rise.

   d. Coarse aggregate has blended into surface, but has not disappeared.

3.06 CURING AND PROTECTION

A. Protect all concrete work against injury from the elements and defacements of any nature during construction operations.

B. Curing Methods

1. Curing Methods for Concrete Surfaces: Cure concrete to retain moisture and maintain specified temperature at the surface for a minimum of 7 days after placement. Curing methods to be used are as follows:

   a. Water Curing: Keep entire concrete surface wet by ponding, continuous sprinkling or covered with saturated burlap. Begin wet cure as soon as concrete attains an initial set and maintain wet cure 24 hours a day.

   b. Sheet Material Curing: Cover entire surface with sheet material. Securely anchor sheeting to prevent wind and air from lifting the sheeting or entrapping air under the sheet. Place and secure sheet as soon as initial concrete set occurs.

   c. Liquid Membrane Curing: Apply over the entire concrete surface except for surfaces to receive additional concrete. Curing compound shall NOT be placed on any concrete surface where additional concrete is to be placed, where surface coatings are to be used, or where the concrete finish requires an integral floor product. Curing compound shall be applied as soon as the free water on the surface has disappeared and no water sheen is visible, but not after the concrete is dry or when the curing

compound can be absorbed into the concrete. Application shall be in compliance with the manufacturer's recommendations.

2. Specified applications of curing methods.

   a. Slabs for Water Containment Structures: Water curing only.

   b. Slabs on Grade and Footings (not used to contain water): Water curing, sheet material curing or liquid membrane curing.

   c. Structural Slabs (other than water containment): Water curing or liquid membrane curing.

   d. Horizontal Surfaces which will Receive Additional Concrete, Coatings, Grout or Other Material that Requires Bond to the substrate: Water curing.

   e. Formed Surfaces: None if nonabsorbent forms are left in place 7 days. Water cure if absorbent forms are used. Sheet cured or liquid membrane cured if forms are removed prior to 7 days. Exposed horizontal surfaces of formed walls or columns shall be water cured for 7 days or until next placement of concrete is made.

   f. Concrete Joints: Water cured or sheet material cured.

C. Finished surfaces and slabs shall be protected from the direct rays of the sun to prevent checking and crazing.

D. Cold Weather Concreting:

1. "Cold weather" is defined as a period when for more than 3 successive days, the average daily outdoor temperature drops below 40 degrees F. The average daily temperature shall be calculated as the average of the highest and the lowest temperature during the period from midnight to midnight.

2. Concrete placed during cold weather shall be batched, delivered, placed, cured and protected in compliance with the recommendations of ACI 306R and the additional requirements specified herein.

3. Discuss a cold weather work plan with the Engineer. The discussion shall encompass the methods and procedures proposed for use during cold weather including the production, transportation, placement, protection, curing and temperature monitoring of the concrete. The procedures to be implemented upon abrupt changes in weather conditions or equipment failures shall also be discussed. Cold weather concreting shall not begin until the work plan is acceptable to the Engineer.

4. The minimum temperature of concrete immediately after placement and during the protection period shall be as indicated in Table 3. The temperature of the concrete in place and during the protection period shall not exceed these values by more than 20 degrees F. Prevent overheating and non-uniform heating of the concrete.

TABLE 3

Concrete Temperatures Minimum Dimension of Section

	< 12-in	12 to 36-in
Min. conc temp:	55 Degree F	50 Degree F

5. During periods of cold weather, concrete shall be protected to provide continuous warm, moist curing (with supplementary heat when required) for a total of at least 350 degree-days of curing.

   a. Degree-days are defined as the total number of 24 hour periods multiplied by the weighted average daily air temperature at the surface of the concrete (eg: 5 days at an average 70 degrees F = 350 degree-days).

   b. To calculate the weighted average daily air temperature, sum hourly measurements of the air temperature in the shade at the surface of the concrete taking any measurement less than 50 degrees F as 0 degrees F. Divide the sum thus calculated by 24 to obtain the weighted average temperature for that day.

6. Salt, manure or other chemicals shall not be used for protection.

7. At the end of the protection period, allow the concrete to cool gradually to the ambient temperature. If water curing has been used, the concrete shall not be exposed to temperatures below those shown in Table 3 until at least 24 hours after water curing has been terminated.

8. During periods not defined as cold weather, but when freezing temperatures are expected or occur, protect concrete surfaces from freezing for the first 24 hours after placing.

E. Hot Weather Concreting

1. "Hot weather" is defined as any combination of high air temperatures, low relative humidity and wind velocity which produces a rate of evaporation as estimated in ACI 305R, approaching or exceeding 0.2 lbs/sqft/hr).

2. Concrete placed during hot weather, shall be batched, delivered, placed, cured and protected in compliance with the recommendations of ACI 305R and the additional requirements specified herein.

   a. Temperature of concrete being placed shall not exceed 90 degrees F and every effort shall be made to maintain a uniform concrete mix temperature below this level. The temperature of the concrete shall be such that it will cause no difficulties from loss of slump, flash set or cold joints.

   b. All necessary precautions shall be taken to promptly deliver, to promptly place the concrete upon its arrival at the job and to provide vibration immediately after placement.

   c. The Engineer may direct the Contractor to immediately cover plastic concrete with sheet material.

3. Discuss with the Engineer a work plan describing the methods and procedures proposed to use for concrete placement and curing during hot weather periods. Hot weather concreting shall not begin until the work plan is acceptable to the Engineer.

3.07 REMOVAL OF FORMS

A. Except as otherwise specifically authorized by the Engineer, forms shall not be removed before the concrete has attained a strength of at least 30 percent of its specified design strength, nor before reaching the following number of day-degrees of curing (whichever is the longer):

TABLE 4

Forms for	Degree Days
Beams and slabs	500
Walls and vertical surfaces	100

(See definition of degree-days in Paragraph 3.06D above).

B. Shores shall not be removed until the concrete has attained at least 60 percent of its specified design strength and also sufficient strength to support safely its own weight and the construction live loads upon it.

3.08 FIELD TESTS

A. Sets of field control cylinder specimens will be taken by the Engineer (or inspector) during the progress of the work, in compliance with ASTM C31. The number of sets of concrete test cylinders taken of each class of concrete placed each day shall not be less than once a day, nor less than once for each 150 cu yds of concrete nor less than once for each 5,000 sq ft of surface area for slabs or walls.

1. A "set" of test cylinders consists of four cylinders: one to be broken at 7 days and two to be broken and their strengths averaged at 28 days. The fourth may be used for a special break at 3 days or to verify strength after 28 days if 28 day breaks are low.

2. When the average 28 day compressive strength of the cylinders in any set falls below the required compressive strength or below proportional minimum 7 day strengths (where proper relation between seven and 28 day strengths have been established by tests), proportions, water content, or temperature conditions shall be changed to achieve the required strengths.

B. Cooperate in the making of tests by allowing free access to the work for the selection of samples, providing an insulated closed curing box for specimens, affording protection to the specimens against injury or loss through the operations and furnish material and labor required for the purpose of taking concrete cylinder samples. All shipping of specimens will be paid for by the Owner. Curing boxes shall be acceptable to the Engineer.

C. Slump tests will be made in the field immediately prior to placing the concrete. Such tests shall be made in accordance with ASTM C143. If the slump is greater the specified range, the concrete shall be rejected.

D. Air Content: Test for air content shall be made on a fresh concrete sample. Air content for concrete made of ordinary aggregates having low absorption shall be made in compliance with either the pressure method complying with ASTM C231 or by the volumetric method complying with ASTM C173. If lightweight aggregates or aggregates with high absorptions are used, the latter test method shall be used.

3.09 FIELD CONTROL

A. The Engineer may have cores taken from any questionable area in the concrete work such as construction joints and other locations as required for determination of concrete quality. The results of tests on such cores shall be the basis for acceptance, rejection or determining the continuation of concrete work.

B. Cooperate in obtaining cores by allowing free access to the work and permitting the use of ladders, scaffolding and such incidental equipment as may be required. Repair all core holes. The work of cutting and testing the cores will be at the expense of the Owner.

3.10 FAILURE TO MEET REQUIREMENTS

A. Should the strengths shown by the test specimens made and tested in compliance with the previous provisions fall below the values given in Table 1, the Engineer shall have the right to require changes in proportions outlined to apply to the remainder of the work. Furthermore, the Engineer shall have the right to require additional curing on those portions of the structure represented by the test specimens which failed. The cost of such additional curing shall be at the Contractor's expense. In the event that such additional curing does not give the strength required, as evidenced by core and/or load tests, the Engineer shall have the right to require strengthening or replacement of those portions of the structure which fail to develop the required strength. The cost of all such core borings and/or load tests and any strengthening or concrete replacement required because strengths of test specimens are below that specified, shall be entirely at the expense of the Contractor. In such cases of failure to meet strength requirements the Contractor and Engineer shall confer to determine what adjustment, if any, can be made in compliance with Sections titled "Strength" and "Failure to Meet Strength Requirements" of ASTM C94. The "purchaser" referred to in ASTM C94 is the Contractor in this Section.

B. When the tests on control specimens of concrete fall below the required strength, the Engineer will permit check tests for strengths to be made by means of typical cores drilled from the structure in compliance with ASTM C42 and C39. In case of failure of the cores, the Engineer, in addition to other recourses, may require, at the Contractor's expense, load tests on any one of the slabs, beams, piles, caps, and columns in which such concrete was used. Test need not be made until concrete has aged 60 days.

C. Should the strength of test cylinders fall below 60 percent of the required minimum 28 day strength, the concrete shall be rejected and shall be removed and replaced.

3.11 PATCHING

A. As soon as the forms have been stripped and the concrete surfaces exposed, fins and other projections shall be removed; recesses left by the removal of form ties shall be filled; and surface defects which do not impair structural strength shall be repaired. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to approval of the Engineer.

B. Immediately after removal of forms remove plugs and break off metal ties as required by Section 03100. Holes are then to be promptly filled upon stripping as follows: Moisten the hole with water, followed by a 1/16-in brush coat of neat cement slurry mixed to the consistency of a heavy paste. Immediately plug the hole with a 1 to 1.5 mixture of cement and concrete sand mixed slightly damp to the touch (just short of "balling"). Hammer the grout into the hole until dense, and an

excess of paste appears on the surface in the form of a spiderweb. Trowel smooth with heavy pressure. Avoid burnishing.

C. When patching exposed surfaces the same source of cement and sand as used in the parent concrete shall be employed. Adjust color if necessary by addition of proper amounts of white cement. Rub lightly with a fine Carborundum stone at an age of 1 to 5 days if necessary to bring the surface down with the parent concrete. Exercise care to avoid damaging or staining the virgin skin of the surrounding parent concrete. Wash thoroughly to remove all rubbed matter.

3.12 REPAIRS

A. It is the intent of this Section to require quality work including adequate forming, proper mixture and placement of concrete and curing so completed concrete surfaces will require no patching.

3.13 SCHEDULE

A. The following (Table 5) are the general applications for the various concrete classes and design strengths, unless otherwise specified in the plans:

TABLE 5

Class	(psi)	Design Strength Description
A	2,500	Concrete fill
B	3,000	Concrete overlay slabs and pavements
D	4,000	Concrete slab on grade

*REFERENCE PLANS FOR CONCRETE

DIVISION 31

EARTHWORK

SLOPE PROTECTION AND EROSION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary and permanent erosion control systems.

B. Slope Protection Systems.

1.02 RELATED SECTIONS

A. Section 31 00 00 - Earthwork

B. Section 31 11 00 – Site Preparation

C. Section 32 00 01 - General

D. Construction Drawings

1.03 ENVIRONMENTAL REQUIREMENTS

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

1.04 COORDINATION

Coordinate erosion control grassing with required permanent grassing required by landscape plans.

PART 2 PRODUCTS

2.01 MATERIALS

A. Quick growing grasses such as wheat, rye or oats.

B. Hay or straw bales.

C. Fencing for siltation control as specified on the plans.

D. Curlex blankets by American Excelsior Company or approved equal.

E. Bale stakes for each bale shall be a minimum of 4 feet in length and shall be

either 2 #4 rebars, 2 steel pickets or 2-2"x2" hardwood stakes driven 1'-6" to 2'-0" into ground.

F. Temporary mulches such as loose hay, straw, netting, wood cellulose or agricultural silage.

G. Fence stakes shall be metal stakes a minimum of 8 feet in length.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare a site Storm Water Pollution Prevention Plan in accordance with the erosion control plan and submit any variations "for information only" to the Owner.

B. Deficiencies or changes in the erosion control plan as it is applied to current conditions will be evaluated and implemented as necessary by the Contractor and brought to the attention of the Owner and the Engineer.

3.02 EROSION CONTROL AND SLOPE PROTECTION IMPLEMENTATION

A. Place erosion control systems in accordance with the erosion control plan.

B. The contractor will be required to incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and practical.

C. The temporary erosion control systems installed by the contractor shall be maintained to control siltation at all times during the life of the contract. The contractor must respond to any maintenance or additional work ordered by the Owner within a 48 hour period.

D. Any additional material and work required and authorized by the Owner which is beyond the extent of the erosion control plan shall be paid for by the owner.

E. Slopes that erode easily shall be temporary seeded as the work progresses with a rye grass application.

F. Upon acceptance of stabilized slopes and permanent erosion protection measures, the Contractor shall remove all temporary devices and dress areas to the satisfaction of the Owner.

DIVISION 32

EXTERIOR IMPROVEMENTS

GENERAL

1.1 DESCRIPTION: The technical specifications governing this project are the Louisiana DOTD "Standard Specifications for Roads and Bridges," 2006 Edition, inclusive of any supplemental or special specifications or provisions contained herein. Various sections of such standard shall be included within the overall specification contained herein whether specifically mentioned or not except where such specifications conflict with any other provisions contained herein. All references to the "Department" shall mean the "Owner."

COLD PLANING ASPHALTIC PAVEMENT

PART 1 GENERAL

1.1 DESCRIPTION: This work consists of removing asphaltic concrete surfacing in accordance with these specifications and in conformity with the average depth, width, grade, cross-slope and typical sections shown on the plans or established.

References to "DOTD" shall be understood as "Owner/Engineer."

1.2 EQUIPMENT: Equipment for cold planing asphaltic surfacing shall be an approved, self-propelled planing machine or grinder. Equipment shall have sufficient power, traction and stability to remove the thickness of asphaltic concrete necessary to provide profile grade and cross slope uniformly across the surface. Cold planing equipment shall be capable of working 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 shall have an automatic system for controlling cross slope at a given rate. Adequate loading equipment shall be provided to immediately remove materials cut from the surface and discharge the cuttings into a truck or on the shoulder as specified or directed. Adequate personnel shall be provided to ensure that the millings are removed from the surface daily. The drum shall be round and true with sufficient number of teeth to yield a uniform and fine textured surface. The machine shall be equipped with means to control dust created by the cutting action and shall have a system providing for uniformly varying the depth of cut while the machine is in motion.

1.3 CONSTRUCTION REQUIREMENTS:

(a) General: The maximum forward speed of the planing machine shall be 40 feet (12.0 m) per minute. The engineer may approve forward speeds greater than 40 feet (12.0 m) per minute provided the planed surface is uniform and fine textured and conforms to the surface tolerance requirements for a binder course. This speed may be reduced as directed to provide a planed surface of uniform and fine texture with the specified grade and cross slope. If ridges are excessive, the engineer may require additional milling, replacement of teeth, or other corrective action. The maximum depth of cold planing shall be 2 inches (50 mm) per pass when traffic is being maintained.

The traveling reference plane will be used on the first pass of the cold planing machine. The shoe device may be used on adjacent passes. This is the minimum acceptable method and the contractor must meet or exceed current surface tolerance specifications.

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 (50 mm) in height, this longitudinal face shall be sloped as directed. The contractor shall place smooth transitions at transverse joints prior to restoring to

traffic by milling or by using an asphaltic concrete mix. RAP shall not be used. Transitions shall be a minimum length of one linear foot per 1/4 inch (0.3 m per 0.6 mm) of cold planed depth. Provisions shall be made at drives and turnouts to maintain local traffic.

Asphaltic concrete next to structures or in small irregular areas that cannot be removed by the planing machine shall be removed by other acceptable methods.

Pavement surfaces resulting from planing operations shall be of uniform texture, grade and cross-slope and free from loose material. Planed surfaces not meeting these requirements shall be replaned at no direct pay. No uneven, undulating surfaces will be accepted. The contractor shall provide drainage of planed areas where needed by cutting through the shoulder to the ditch on the same day that adjacent cold planing is performed.

The cold planing operation shall not precede the subsequent paving operation by more than 15 calendar days. This time may be extended by the engineer if extensive joint repairs, patching or shoulder stabilization is required.

In accordance with Section 34 41 17, temporary pavement markings shall be in place prior to opening the roadway to traffic.

The DOTD encourages reclamation and recycling of all materials obtained within the project limits. All reclaimed asphaltic pavement (RAP) material to be retained by the DOTD for its recycling program, or by other government entities, shall be hauled by the contractor to the storage facility indicated on the plans and stockpiled as directed. The contractor may also be required to retain a specified percentage or quantity of the RAP generated by the project. When so specified, the bidder shall indicate in his bid the value of the retained material that he used in calculating his bid.

Millings containing lightweight aggregate shall not be used as RAP in asphaltic concrete mixtures.

Required joint repairs shall be made after planing. Pavement patching shall be completed before planing, unless additional areas requiring patching are exposed by the cold planing. Pavement patching and joint repair shall be in accordance with Section 32 12 16.01.

(b) The surface tolerance requirements of the cold planed surface for single lift overlays shall meet the requirements for binder course in Section 32 11 26.

PART 2 MEASUREMENT AND PAYMENT

2.1 MEASUREMENT: Measurement of cold planing will be made by the square yard (sq m) of asphaltic concrete surfacing satisfactorily removed. No additional measurement will be made for multiple passes required to achieve total cold planing depth indicated in the plans. Measurement of contractor retained RAP will be by the cubic yard (cu m), 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.

2.2 PAYMENT: Payment for cold planing of asphaltic pavement will be made at the contract unit price per square yard (sq m), 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 and transitions at transverse joints will be at no additional pay.

Payment for temporary pavement markings will be included under appropriate pay items.

ASPHALTIC CONCRETE EQUIPMENT AND PROCESSES

PART 1 GENERAL

1.1 DESCRIPTION: This section specifies requirements for certification of plant and paving equipment. It includes methods and equipment for handling and storing materials, producing asphaltic concrete, and transporting and placing asphaltic concrete at the job site.

The Department's publication entitled "Application of Quality Assurance Specifications for Asphaltic Concrete Mixtures" is hereby made a part of this specification by reference.

1.2 PLANT EQUIPMENT:

(a) General: Asphaltic concrete shall be mixed at a central mixing plant by either the batch, or continuous drum mixing process. Aggregates, additives and asphalt cement shall be proportioned in accordance with the approved Job Mix Formula. When the automatic adjustments or other critical control and shutoff devices are not functioning, the plant shall not operate. The plant shall operate with clean, easily accessible, and accurate thermometers, scales and meters, which shall be immediately repaired, replaced, or recalibrated when faulty operation is detected.

The system shall provide positive weight (mass) 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. Aggregates shall be heated, dried and mixed with asphalt to produce a homogeneous mixture in which all aggregate particles are uniformly coated. Approved methods shall be provided to discard the first and last output of the plant after each interruption. Special requirements pertaining to batch plants shall be in accordance with Subsection 1.11.

Rates of production of every material used on a DOTD project shall be digitally displayed and the quantities totalized.

(b) Certification and Calibrations: Plants furnishing asphaltic concrete mixtures in accordance with Section 32 11 26 shall be certified at least every two years in accordance with current Departmental procedures. All plant components and processes are subject to inspection and approval by the District Laboratory Engineer. The meters, scales, and measuring devices shall be tested, inspected and certified every 90 calendar days, and more often when directed, by a qualified independent scale service or the Weights and Measures Division, Louisiana Department of Agriculture and Forestry.

The contractor shall have a plant site laboratory conforming as a part of the plant facilities. The plant lab shall be equipped with a "land-based" telephone and made available for DOTD use. The plant site laboratory shall be located in close

proximity to the plant operations, so that plant operations may be observed. All laboratory equipment shall be calibrated and verified by the procedures in AASHTO R18 and the appropriate test methods and by the frequency directed in AASHTO R18. Traceable standards and accreditation are not required. Documentation for the calibrations and verifications shall be available upon request by DOTD personnel.

1.3 AGGREGATES:

(a) Stockpiles: Aggregates shall be stored at the plant site so that no intermixing, segregation, or contamination will occur. Stockpiles shall be well drained.

Blending and proportioning of aggregates shall be done from cold feed bins and not in stockpiles or on the ground at the plant site or the source. Gradation and other properties of aggregate in stockpiles shall be such that when the aggregates are combined in proper proportions, the resulting combined gradation will meet the requirements of the approved job mix formula.

(b) Cold Feed: Cold aggregate bins shall be of sufficient size to store the amount of aggregates required for continuous plant operation. Partitions between bins shall extend a minimum of 1 foot (300 mm) above the top of bins and be sufficient to prevent intermixing of aggregate sizes. The unit shall include a feeder mounted under the bins with each bin compartment having an accurately controlled individual gate to form an orifice for measuring the material drawn from it. The orifice shall be rectangular, with one dimension adjustable by positive mechanized adjustment with locking system. Indicators shall be provided on each gate to show the gate opening in inches (mm) or a predetermined setting to match the calibration curves.

Calibration of the cold feed system shall be based on the weight (mass) of bin material. Material shall be fed from a bin through the individual orifice and bypassed to a container to be weighed, or over the calibrated weigh bridge. Material from each bin shall be calibrated separately. Calibration shall be performed at three different production rates with records kept on file. The calibration process shall be part of the contractor's quality control.

An automatic plant shutoff shall be provided to operate when any aggregate bin becomes empty or flow is interrupted. The contractor shall provide belt scales for conveyor systems when the drum-mixer process is used, calibrated in accordance with Subsection 1.2(b).

The plant shall have an accurate mechanical means for uniformly feeding aggregate into the dryer. Feeders shall be capable of uniformly delivering the maximum number of required aggregate sizes in their proper proportion. When more than one cold bin feeder is used, each shall operate as a separate unit. The individual controls shall be integrated with a master control for all materials.

(c) Moisture: The contractor's Certified Asphaltic Concrete Plant Technician shall measure the moisture content of the cold feed aggregates daily in accordance with DOTD TR 319 when starting the plant. Adequately scheduled tests during plant operations and adjustments to the plant shall be made to correct for moisture in the aggregate. The schedule for moisture content testing will be subject to approval.

Provisions shall be made for introducing the latest moisture content of the cold feed aggregates into the belt weighing system, thereby correcting the conversion of wet aggregate weight (mass) to dry aggregate weight (mass). Dry weight (mass) of the aggregate flow shall be displayed digitally in appropriate units.

(d) Screens: The plant shall have a scalping system on the fine sand cold bin, the RAP bin and other bins as necessary, to ensure removal of objectionable material.

For continuous drum mix plants, and when a belt scale is used, an additional vibrating scalping screen will be required between the aggregate cold feed discharge and belt scale. Other processes will require a vibrating scalping screen between the cold feed discharge and mixing process. The screens shall be sized to remove all oversize aggregate and other objectionable material.

(e) Reclaimed Asphaltic Pavement (RAP): If used, a separate cold feed system, shall be provided for reclaimed asphaltic pavement (RAP). This system shall include a scalping screen, bin, feeder belt and weigh bridge which is fully integrated with the cold feed system and asphalt cement supply system. This system shall be calibrated in accordance with Subsections 1.2(b) and 1.3(b). RAP must be added to the dryer in a location, in accordance with the manufacturer's recommendation, that does not expose the material to direct flame.

1.4 ASPHALT CEMENT:

(a) Working Tank: The asphalt cement working tank shall be capable of uniformly heating the material by approved methods, under positive control, to the required temperature as recommended by the supplier. The asphalt circulating system shall be of adequate size to ensure proper and continuous circulation (except while asphalt is being measured). New tanks shall be equipped with paddle-type mixers or agitators which keep the material in motion and minimize prolonged exposure to the heating source. Proper mixing temperature of asphalt shall be maintained. Pipelines and fittings shall be heated or insulated. A sampling spigot shall be provided in each tank or the supply line. Strainers or screens must be placed between the working tank and mixing unit to filter undesirable material. A thermometer graduated in 5°F (2°C) increments and having an accuracy of ±5°F (±2°C) shall be fixed 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.

(b) Measurement: Asphalt cement shall be measured either by weight (mass) or volume. All scales and meters shall be accurate to 0.5 percent and be calibrated and

verified in accordance with Subsection 1.2(b). The rate of flow of asphalt cement shall also be digitally displayed and the quantity used totalized.

(1) Weight Measurement: Scales shall read to the nearest pound (kg).

(2) Volume Measurement: Measurement by volume shall be by means of a positive displacement pump and shall be recorded in digital form to the nearest gallon (L). Provisions shall be made to periodically check by weight (mass) the quantity of asphalt cement delivered. The rate of asphalt cement delivery and the total quantity delivered shall be continuously displayed in digital form corrected to 60°F (15°C). The quantity of asphalt cement delivered shall be corrected to the approved job mix temperature. Measurement shall be continuous and accurate to 1.0 percent of the required measurement.

1.5 ADDITIVES: The rate of flow of anti-strip, shall be digitally displayed and the quantity used totalized. When used, the rate of flow of mineral filler, lime and/or fibers shall also be digitally displayed and the quantity used totalized. All meters shall be accurate to 0.5 percent.

(a) Anti-strip: The anti-strip additive storage tank shall be a recirculating tank provided with uniform heat and an indicating thermometer at an approved location near the tank discharge point. A thermometer graduated in 5°F (2°C) increments and having an accuracy of ±5°F (±2°C) shall be placed at an approved point near the anti-stripping tank discharge point before the meter. Anti-strip additive shall be dispensed directly into the asphalt feed line at a location between the asphalt control valve and the end of the asphalt discharge line. The anti-strip delivery system shall ensure that the proper amount of material is delivered continuously and in correct proportion to the asphalt cement. This system may be a paddle-type 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. Other similar systems may be allowed with approval by the District Laboratory Engineer. In either system, if the anti-strip flow is not restored within 15 minutes, production shall be discontinued 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 (L). Additionally, a measuring dip stick and a chart correlating tank quantity with height of anti-strip liquid shall be provided.

(b) Mineral Filler: Mineral filler shall be proportioned separately from a hopper equipped with an adjustable feed which can be accurately and conveniently calibrated and which shall be interlocked with the aggregate and asphalt feeds. The feeder shall accurately proportion the mineral filler and provide a constant flow of material. For batch plants, the mineral filler shall be batched into the mix along with the aggregates. For continuous drum mixer plants, the mineral filler shall be introduced to the mix at an approved location sufficiently in advance of the addition of the asphalt to allow proper drying time.

For mineral filler, a separate bin and feeder in accordance with Subsection 32 10 01.03(b) shall be furnished with its drive interlocked with the aggregate feeders. Mineral filler shall be introduced directly into the drum near the asphalt discharge.

(c) Hydrated Lime: When hydrated lime additive is mixed with aggregate on the belt feed, the hydrated lime additive equipment shall be interlocked and synchronized with cold feed controls to operate concurrently with the cold feed operation. A positive signal system that will automatically shut the plant down when a malfunction causes an improper supply of additive or water shall be installed. The plant shall not operate unless the entire additive system is functioning properly. The hydrated lime additive system shall consist of the following equipment:

(1) A separate bulk storage bin with a vane feeder or other approved feeding system which can be readily calibrated. The system shall provide a means for easy sampling of additive and verification of the quantity dispensed by weight (mass). The feeder system shall continuously record the total amount of additive dispensed.

(2) An approved spray bar or other approved system capable of spraying the composited aggregate with potable water before the addition of hydrated lime additive when the moisture content of the composited aggregate falls below 3 percent. An alternate system for spraying coarse aggregate stockpiles may be allowed when approved. The approved equipment and methods shall consistently maintain the aggregates in a uniform, surface wet condition. The moisture content of the aggregate-lime additive mixture following spraying and mixing shall be introduced into the automatic moisture controls of the plant.

(3) An approved pugmill or other approved mixing device to uniformly coat the composited aggregates with the hydrated lime additive shall be located between the point at which the additive is placed on the composited aggregate and the dryer.

The hydrated lime additive shall be dispensed directly onto the composited aggregate between the cold feed and the dryer. When cold feed control is used, the additive shall be introduced after the composited aggregate has passed through the vibrating scalping screen. The additive shall be uniformly blended with the composited aggregate before entry into the dryer. The process and equipment used for mixing the lime additive and aggregate shall be approved and shall provide that no less than the required amount of additive is continuously blended with the aggregate. When a belt scale is used on the composited aggregate feed belt, it shall be positioned to record the combined weight (mass) of the blended aggregate and hydrated lime additive.

(d) Fibers: A separate feed system shall be used to accurately proportion the required quantity of mineral fibers into the mixture in such a manner that uniform distribution is obtained. The proportioning device shall be interlocked with the aggregate feed or weigh system to maintain the correct proportions for all rates of production. The fiber proportion shall be controlled to within plus or minus 10 percent of the amount of fibers required. Flow indicators or sensing devices shall be provided for the fiber system, interlocked with plant controls so that the mixture production will be interrupted if introduction of the fiber fails. For drum plants, the fiber shall be added in such a manner that it will not become entrained in the exhaust system of the dryer or plant.

1.6 DRYER: The plant shall include one or more dryers, with automatic burner controls, that continuously agitate aggregates during heating and drying. The equipment shall be capable of heating and drying aggregates in the necessary quantities to supply the mixing unit continuously at its operating capacity and at a specified temperature and acceptable moisture content. Aggregates shall be heated and dried to produce a mixture meeting specification requirements without burner fuel contamination. Slope of dryers shall be in accordance with approved recommendations of the dryer manufacturer.

1.7 SECONDARY DUST COLLECTOR: When a dust collection system returns fines to the mixture, the fines shall be returned at a uniform and regulated rate and at an approved location. In the drum-mix process, baghouse fines shall be added near the asphalt cement discharge. Baghouse fines shall be dispensed into the aggregate mixture by an approved feed control device from a collector box, surge bin or filler silo. This provision does not apply to primary collectors.

1.8 MIXER: The mixer unit shall produce a uniform blend at the specified production rate, with rapid and complete asphalt coating of aggregate. As a minimum, 95 percent of the coarse aggregate particles retained on the No. 4 (4.75 mm) sieve shall be completely coated when tested in accordance with DOTD TR 328.

The aggregate, asphalt cement and the mixture shall be processed at the temperature specified in the approved job mix formula. The temperature of the mixture at discharge from the mixer shall be within ±25°F (±14°C) of the optimum mixing temperature in the job mix formula. When the mixing, coating, placing or density requirements are not being met, the engineer may require that the job mix temperature be changed or that the foregoing temperature range be restricted.

1.9 STORAGE AND LOADING ASPHALTIC CONCRETE MIXTURE:
(a) Mix Conveyors: The mix shall be transported directly from plant to silos or bins by means of an enclosed continuous type conveyor system designed to prevent spillage and match the production rate of the plant. The mixture from the silo or surge bin shall remain within ±15°F (±8°C) of plant discharge temperature.

The plant shall be equipped with an approved recording thermometer graduated in maximum 10°F (5°C) increments and having an accuracy of ±5°F (±2°C) and a sensitivity which will provide an indication of temperature change at a rate of at least 10°F (5°C) per minute. It shall be placed at the dryer discharge chute or approved location to register automatically the temperature of, the asphaltic concrete mixture at discharge.

(b) Storage Silos and Surge Bins: For drum mix plants storage silos or surge bins shall be used for storing asphaltic concrete mixtures and approved by the engineer.

Use of silos or bins shall 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. An indicator device which is activated when material in the bin drops below the top of the sloped portion shall be affixed to each bin and be visible to the loading operator. Mixtures shall be maintained above this level during production, except for extended periods when the plant is not in operation. If extra storage time is anticipated, 0.1 percent asphalt cement may be added to the mix.

When the mixture is placed into a silo or bins through a surge device, an automatic warning system shall be provided to audibly warn the operator of a gate malfunction. Silo or bin unloading gates shall be either clam shell gates operating under gravity feed or other approved gates that will not cause segregation or be detrimental to the mix.

(1) Silos: If heated, the storage silo heating system shall be capable of uniformly maintaining mix temperature without localized heating.

Without prior approval, maximum allowable storage time for asphaltic concrete mixtures is 18 hours. The Department may grant permission to exceed the storage time, provided test results and other data indicate that the additional storage time is not detrimental to the mix.

(2) Unheated Surge Bins: Storage time for surge bins depends on the temperature of the stored mix. The mix temperature, when discharged from the surge bin, must not be lower than 25°F (±14°C) below the optimum mixing temperature in the job mix formula.

(c) Loading and Sampling: Haul trucks shall conform with Subsection 1.13.

The sampling platform shall be a sturdy, secured metal platform with protective rails, at least 15 square feet in area, and set at the proper height to easily obtain a sample.

The plant shall be equipped 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. Diesel is not allowed as a mix release agent.

1.10 SCALES AND METERS:

(a) Scales: Scales and meters shall be accurate to ±0.5 percent of the indicated load. They shall be designed, constructed and installed so that operations do not affect their accuracy. Calibrations are required in accordance with Subsection 32 10 01.02(b). All asphaltic concrete mixtures shall be measured by weigh hoppers or truck platform scales to determine weight (mass) for pay.

(b) Weigh Hoppers: Weigh hoppers weigh the mixture or individual material components. Hoppers for weighing a mixture from a storage or surge bin shall not leak or cause segregation. Weigh hoppers shall be suspended from calibrated springless dial scales or load cell scales. The weigh hopper shall be equipped with an approved automatic printer system that will print the certified tare weight (mass) of the truck, each batch weight (mass) and total weight (mass) of mixture loaded into the truck

(c) Platform Scales: Truck-platform scales shall be of sufficient length to weigh the entire unit transporting the mix. Scales shall be equipped with an approved automatic printer system that will print the tare weight (mass) as well as the total weight (mass) of the unit and the mix. The truck must be weighed empty to determine tare weight prior to mixture loading.

(d) Printers: In the event of a breakdown of the printing mechanism, the contractor may be permitted to operate during the 48-hour period immediately following the breakdown provided an accurate weight (mass) of mixture can be determined and recorded, and repeated breakdowns do not occur.

1.11 BATCH PLANTS:

(a) Screens: Batch plant screens, if used, shall proportion and screen aggregates to the required sizes. The normal capacity of the screens shall exceed the full capacity of the mixer or dryer. The screens shall be exposed for inspection as directed.

(b) Hot Bins: Hot aggregate shall be stored in bins. Storage shall be accomplished to minimize segregation and loss of temperature of aggregates. Bin sizes shall be adequate for continuous operation of the plant at rated capacity. Bins shall be arranged to ensure separate and adequate storage of appropriate fractions of aggregate. Adequate dry storage shall be provided with an overflow pipe or chute to prevent contamination of materials. Each size of aggregate shall be stored in separate bins when screens are used. For screenless operation, aggregate shall be stored in one or more bins with adequate provisions to prevent segregation.

The temperature of the heated aggregates shall be measured at an approved location and continuously recorded. The thermometer shall be graduated in maximum 10°F

(5°C) increments with an accuracy of ±5°F (±2°C) and a sensitivity to temperature change at a minimum rate of at least 10°F (5°C) per minute.

When plant operation is interrupted and the temperature of material in hot storage cools to 25°F (14°C) or more below the specified mixing temperature, or when a plant changes type of mix and the change requires a change of materials, bins shall be pulled and the material discarded.

Fiber, if used in a batch plant, must be added to the aggregate in the weigh hopper or as approved and directed by the engineer. Also, for batch plants, the dry mixing time shall be increased by 8 to 12 seconds, or as directed by the engineer, from the time the aggregate is completely emptied into the pugmill.

(c) Mixer Unit: Batch plants shall have an approved pugmill and spray bar. Prior to adding asphalt cement, the combined aggregate shall be thoroughly mixed dry, after which the proper amount of asphalt cement shall be sprayed over aggregates and mixed to produce a homogeneous mixture in which all aggregate particles are uniformly coated. Mixing times shall be in accordance with the approved job mix formula. The mixer shall have an approved timing device to prevent entrance of additional material during mixing. The device shall also lock the asphalt cement bucket throughout the dry mixing period. The pugmill shall not be operated above the rated capacity. The discharge gates shall be locked to ensure proper mixing.

(d) Weigh Hoppers: In batch plants, asphalt cement and aggregate hoppers shall be of sufficient size to weigh the total batch in one operation.

To determine percent asphalt cement for the mix, the contractor shall provide an approved printer system which will print separately the weight (mass) of aggregates and asphalt cement. These weights (masses) shall be used for calculating the percent asphalt cement in the mixture. When a mixture is loaded directly into the haul truck, these weights (masses) shall be used for the purpose of determining pay weights (masses) for the mix. Printing equipment shall also print zero weight (mass) for each batch and total weight (mass) of mixture loaded in trucks.

In the event of a breakdown of the printing mechanism, the contractor may be permitted to operate during the 48-hour period immediately following the breakdown, provided an accurate weight (mass) of mixture can be determined and recorded, and provided repeated breakdowns do not occur.

1.12 PAVING EQUIPMENT: All primary roadway equipment, including asphalt distributors, pavers, rollers and hauling equipment, must be certified at least every two years in accordance with current DOTD policies.

1.13 HAUL TRUCKS: Equipment for transporting asphaltic mixtures shall have tight, clean, smooth metal beds or approved equal, sprayed daily or as often as directed with an approved asphalt mix release agent.

Each vehicle shall have a cover of canvas or other suitable material 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 due to excessive haul time. The cover shall have sufficient tie-downs to hold the cover to the bed during hauling. The covers shall be used as directed.

The hauling unit shall discharge the mixture in a continuous manner so the spreader apron of the paver or MTV will not be overloaded. If the hauling unit or paver is causing surface tolerance penalties or excessive bumps, its use shall be discontinued.

Bottom dump equipment producing windrows will not be allowed.

When size, speed and condition of trucks interfere with orderly paving operations, changes in equipment and/or operations shall be made. Load restrictions shall be in accordance with Subsection 1.09.

1.14 DISTRIBUTORS: The asphalt cement distributor shall meet the requirements of 507.03(a) of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges or the following:

The asphalt distributor shall be equipped with a suitable spray bar and nozzles designed to distribute material within the specified temperature range and shall be equipped with thermometers to indicate temperature of material in the tank. The distributor shall be designed to maintain a constant uniform pressure on asphalt material as it passes through nozzles and to apply asphalt material at the required rate. The distributor shall be equipped with a valve system that controls the flow of asphalt materials, a pump tachometer or pressure gauge that registers pump output, a bitumeter and odometer that indicates both the speed of the distributor in feet (m) per minute and total distance traveled, and measuring devices, as necessary.

Charts shall be provided for an accurate, rapid determination and control of the amount of asphalt materials being applied per square yard (sq m) of surface under operating conditions. The bitumeter shall be calibrated to ensure accurate spraying operations and shall be kept clean of asphalt buildup. The distributor shall be equipped with a hand-held spray attachment for applying asphalt materials to areas inaccessible with the spray bar.

1.15 MATERIAL TRANSFER VEHICLE (MTV): When placing the final two lifts of asphaltic concrete on the roadway travel lanes, an approved material transfer vehicle (MTV) will be required to deliver mixtures from the hauling equipment to the paving equipment, and to prevent segregation of the asphaltic concrete hot-mix. The MTV is required regardless of average daily traffic (ADT). The MTV shall perform additional mixing of the asphaltic concrete mixtures and then deposit the mixture in the paving equipment hopper to reduce segregation and facilitate

continuous production. As a minimum, the MTV shall have a high capacity truck unloading system which will receive mixtures from the hauling equipment; a 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, deliver the mixture to a paving equipment hopper while allowing the MTV to operate from an adjacent lane; and a paver insert hopper with a minimum capacity of 18 tons (18 Mg) which can be inserted into conventional paving equipment hoppers. Other pavers approved by the Department may be used without an insert.

If the weight of the MTV is determined by the engineer to cause settlement or movement in the base or sub-base, the use of the MTV shall be discontinued for this section.

When a malfunction occurs in the MTV during lay-down operations, work may continue for the balance of that day on any course other than the final wearing course. When an MTV malfunctions during final wearing course paving operations, plant operations shall be immediately discontinued and shall not resume until the MTV malfunctions have been remedied. Wearing course materials in transit may be placed. This procedure in no way alleviates the contractor from meeting contract specifications.

Due to the weight of the loaded MTV, the following restrictions shall apply at bridge crossings:

(a) The MTV shall abide by posted weight limits.
(b) The MTV shall be as near empty as possible prior to crossing a bridge.
(c) The MTV shall be moved across a bridge without any other vehicles being on the bridge.
(d) The MTV shall be moved on a bridge only within the limits of the travel lanes and shall not be moved on the shoulders of the bridge.
(e) The MTV shall move at a speed no greater than 5 miles per hour without acceleration or deceleration when crossing a bridge.

1.16 PAVERS: Pavers shall be equipped with automatic screed and slope control devices for use with an approved traveling reference plane or erected stringline, as directed.

Pavers shall be capable of placing mixtures within specified tolerances. A screed or strike-off assembly shall be used to distribute the mixture over the entire paving strip. The width of the paving strip will be approved. Assemblies, including extensions, shall place mixtures that are uniform in appearance and quality. The assembly shall be adjustable to provide the required cross section. The assembly shall be equipped with a heater and a vibrator.

In hilly terrain, when mix is discharged directly into the paver hopper, a positive connection shall be provided between paver and hauling unit. When the hauling unit

discharges directly into the paver hopper, the paver shall be capable of pushing the hauling unit.

Pavers shall be equipped with hoppers adequately designed and maintained to prevent spillage. Pavers shall also be equipped with augers to place the mix evenly in front of the screed, including extensions. Pavers shall be equipped with a quick and efficient steering device and shall be capable of traveling both forward and in reverse. Pavers shall be capable of spreading mixes to required thickness without segregation or tearing.

For shoulder construction or other incidental applications, modified pavers or widening machines may be used when permitted.

A screed extension shall consist of a screed plate or plates, which meet all requirements for the screed set forth in these specifications. Screed extensions used during roadway paving operations shall be heated. The bottom surface of the screed extension shall be in the same plane as the bottom surface of the screed plate. Auger assembly extensions shall be used when screed extensions in excess of 1 foot (300 mm) on a side are to be continuously used in the pavement operation. Such auger extensions shall extend to within 1 foot (300 mm) of the end of the screed. With approval, the use of an auger extension with screed extensions in excess of 1 foot (300 mm) on one side may be waived for transitions, taper sections and similar short sections. The engineer may waive the requirement for auger extensions when hydraulically extended screeds, which trail the main screed assembly, are used, provided required density and surface texture are obtained.

A strike-off assembly or boxed extension shall not be used for paving within the traveled way, except when approved for short irregular sections or non-typical sections.

Pavers shall be equipped with automatic screed and adjustable slope control devices capable of placing the mixture to grade within the tolerances specified, and distributing the mixture over the entire lane width and such partial lane widths as may be approved. Pavers shall be equipped with two grade sensors when required.

Pavers shall be equipped to work from an erected stringline, shoe device or an approved traveling reference plane that will accurately reflect, the average grade of the surface on which it is to be operated and which will result in a finished surface conforming to grade and surface requirements.

1.17 COMPACTION EQUIPMENT:

(a) General: Compaction equipment shall be self-propelled and be capable of reversing without backlash. It is the contractor's responsibility to provide the number, type and size of rollers sufficient to compact the mixture to the specified density and surface smoothness. The contractor shall establish, and modify as necessary, the number, type, size and rolling pattern on the first day of production.

Poorly performing compaction equipment will not be allowed and shall be replaced with suitable equipment or supplemented as necessary.

(b) Steel Wheel Rollers: Steel wheel rollers may be either vibratory or non-vibratory. Wheels shall be true to round and equipped with suitable scrapers and watering devices. Vibratory rollers shall be designed for asphaltic concrete compaction and shall have separate controls for frequency, amplitude and propulsion.

(c) Pneumatic Tire Rollers: All tires shall be treadless, shall be the same size and ply rating, and shall be inflated to a uniform pressure not varying more than ±5 psi (±35 kPa) between tires. Wheels shall not wobble and shall be aligned so that gaps between tires on one axle are covered by tires of the other axle. Tires shall be equipped 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.

1.18 MISCELLANEOUS EQUIPMENT AND HAND TOOLS: Power revolving brooms or power blowers shall be provided and maintained in a satisfactory working condition.

In areas that are inaccessible to conventional rollers, satisfactory mechanical compaction equipment, or hot hand tampers, shall be used. Tamping tools may be used for compacting edges.

PART 2 MEASUREMENT

2.1 Asphaltic concrete mixtures shall be measured for payment in accordance with appropriate subsections. Scales and meters for measuring asphalt materials and mixture shall conform to the requirements in this subsection.

SUPERPAVE ASPHALTIC CONCRETE MIXTURES

PART 1 GENERAL

1.01 DESCRIPTION

(A) General: These specifications are applicable to Superpave asphaltic concrete wearing, binder and base course mixtures of the plant mix type. This work consists of furnishing and constructing one or more courses of asphaltic concrete mixture applied hot in conformance with these specifications and in conformity with the lines, grades, thicknesses and typical sections shown on the plans or established. The mixture shall consist of aggregates and asphalt with additives combined in proportions which meet the requirements of this section. Equipment and processes shall conform to Section 32 10 01.

(B) Quality Assurance: Quality assurance requirements and design procedures shall be as specified herein elsewhere and in the latest edition of the Department's publication entitled "Application of Quality Assurance Specifications for Asphaltic Concrete Mixtures" which is hereby made a part of this contract by reference.

It is the intent of these specifications that the mixtures produced and placed meet the requirements for 100 percent payment. Work shall meet the requirements of this section and be subject to acceptance by the Department.

The contractor shall be responsible for and shall exercise quality control over materials and their assembly, design, processing, production, hauling, laydown and associated equipment. Quality control is defined as the constant monitoring of equipment, materials and processes to ensure that mixtures produced and placed are uniform, within control limits, and meet specification requirements. When these specifications are not being met and satisfactory control adjustments are not being made, operations shall be discontinued until proper adjustments and uniform operations are established. Control shall be accomplished by a program independent of the Department's testing and shall ensure that the requirements of the job mix are being achieved and that necessary adjustments provide the specified results.

The quality of mixtures will be evaluated during two phases, mixture produced at the plant, and mixture hauled, placed and compacted. Quality of both phases will be evaluated continuously as stated herein elsewhere.

Plant quality control testing shall be conducted continuously throughout production independent of delivery points. Project site quality control testing shall be conducted on each project for the mix placed on that project.

When the plant is in operation, the contractor shall have a Certified Asphaltic Concrete Plant Technician at the plant or jobsite who is capable of designing asphaltic concrete mixes, conducting any test or analysis necessary to put the plant into operation and producing a mixture meeting specifications. Daily plant operations shall not begin unless the Certified Asphaltic Concrete Plant Technician is at the plant. The Asphaltic Concrete Plant Technician certification will be awarded by the Department upon satisfactory completion of the Department's requirements.

(C) Mixture Substitutions: Changes in design level will not be allowed on the roadway. Substitutions will be allowed for mixes without requiring a change order as follows. Wearing course [0.75 inch (19 mm)] may be substituted for binder course but not substituted for base course. Binder course [1 inch (25 mm)] may be substituted for base course. Wearing Course, 0.5 inch (12.5 mm) may be substituted for Incidental Paving, Level A. Shoulders may be any mixture type shown in Table 32 11 26-5 regardless of design level.

When any substitution is made, all specification requirements for the mixture used shall apply with the following exceptions. When wearing course is substituted for binder course, RAP will be allowed in accordance with binder course requirements in Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. The lift thickness placed shall be as specified in Subsection 3.01 and Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges for the mix type used.

PART 2 MATERIALS

2.01 All materials must be sampled in accordance with the Materials Sampling Manual and shall be tested in accordance with the test procedures in Table 32 11 26-1. The contractor shall keep accurate records, including proof of deliveries of materials for use in asphaltic concrete mixtures. Copies of these records shall be furnished to the engineer upon request. Materials shall comply with the following Subsections of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges:

Asphalt	1002
Silicone and Anti-Strip Additives	1002.02
Aggregates	1003.01 & 1003.06
Reclaimed Asphaltic Pavement (RAP)	1003.01 & 1003.06
Hydrated Lime	1018.03(a)
Mix Release Agent	1018.25

Table 32 11 26 - 1

Test Procedures for Superpave Asphaltic Concrete Description	Test Method
Specific Gravity and Density of Compressed Asphaltic 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
Moisture Sensitivity (Lottman) (Tensile Strength Ratio)	DOTD TR 322
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

(A) Asphalt Cement: The asphalt cement grades used shall be as specified in Table 32 11 26 - 2 using the design traffic load levels shown on the plans.
If the asphalt cement does not comply with the requirements of Section 1002 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, mix production shall cease until proper asphalt material is supplied.

Table 32 11 26 - 2

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

Base course mixtures containing 20 to 30 percent RAP shall use PG 58-28 asphalt cement.

When mixtures are used for bike paths, curbs, detour roads, driveways, guardrail widening, islands, joint repair, leveling, parking lots, patching, or widening, PG 64-22 asphalt cement may be used in lieu of the modified asphalts. Unless otherwise noted on the plans, PG 64-22 asphalt cement may also be used on shoulders in lieu of the modified asphalts.

PG 76-22m asphalt cement may be substituted for PG 70-22m or PG 64-22 asphalt cements at no increase in price. PG 70-22m asphalt cement may be substituted for PG 64-22 at no increase in price. When average daily traffic (ADT) is less than 2500, PG 70-22m Alternate asphalt cement may be substituted for PG 70-22m asphalt cement for Level 1 and Level A mixes at no increase in price.

(B) Additives:

(1) Silicone: Silicone additives, when needed, shall be dispersed into the asphalt cement by methods and in concentrations given in QPL 22.

(2) Anti-Strip (AS): An anti-strip additive shall be added at the minimum rate of 0.5 percent by weight (mass) of asphalt cement and thoroughly mixed in-line with the asphalt cement at the plant. Additional anti-strip shall be added up to 1.2 percent by weight (mass) of asphalt in accordance with Subsection 2.02.

When the amount of anti-strip additive is not in accordance with the approved job mix formula, production shall be discontinued until satisfactory adjustments are made.

(3) Hydrated Lime: Hydrated lime additive may be incorporated into all asphaltic concrete mixtures at the rate specified in the approved job mix formula. The minimum rate shall not be less than 1.5 percent by weight (mass) of the total mixture. Hydrated lime additive shall be added to and thoroughly mixed with aggregates in conformance with Subsection 32 10 01.1.505(c). Hydrated lime may be added as a mineral filler in accordance with Heading (c)(3).

(C) Aggregates: Aggregates shall meet the requirements of Table 502-5 and Section 1003 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

(1) Friction Ratings: Friction ratings for aggregates shall be determined in accordance with Subsection 1003.06. The friction ratings and allowable usage of aggregates shall be as shown in Table 32 11 26 - 3. Friction rating

requirements shall apply only to the final lift of the travel lane wearing course. Bike paths, curbs, driveways, guardrail widening, islands, joint repair, leveling, parking lots, patching, shoulders, widening and incidental paving uses, and roadway binder and base courses may use any combination of Friction Rating I, II, III, and IV aggregates, in combination with the allowable RAP percentages.

Table 32 11 26 – 3

Aggregate Friction Rating Friction Rating	Allowable Usage
I	All mixtures
II	All mixtures
III	All mixtures, except travel lane wearing courses with plan ADT greater than 7000[1]
IV	All mixtures, except travel lane wearing courses[2]

(2) Reclaimed Asphaltic Pavement (RAP): Reclaimed asphaltic pavement shall be stockpiled separate from other materials at the plant and will be subject to approval prior to use. Such stockpiles shall be uniform and free of soil, debris, foreign matter and other contaminants. Reclaimed materials that cannot be broken down during mixing or that adversely affect paving operations shall be screened or crushed to pass a 2 inch (50 mm) sieve prior to use.

(3) Mineral Filler: Mineral filler complying with the requirements of Subsection 1003.06(a)(6) may be used in all mixtures.

(4) Natural Sand: Natural sand shall meet the requirements of Table 502-5 and Subsection 1003.06(a)(3) of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

2.02 DESIGN OF ASPHALTIC MIXTURES, JOB MIX FORMULA (JMF)

The contractor shall design the mixtures for optimum asphalt content and comply with requirements of the Superpave Mix Design for the level of mixture in Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges in accordance with AASHTO M 323. The job mix formula shall include the recommended formula, extracted gradation, and supporting design data. The recommended formula shall be submitted for approval to the District Laboratory Engineer on a properly completed Superpave Asphaltic Concrete Job Mix Formula form with all supporting design data. No mixture shall be produced until the proposed job mix formula has been approved.

The contractor's proposed job mix formula shall indicate a single anti-strip additive rate which is 0.1 percent greater than the percentage which will yield a minimum Tensile Strength Ratio (TSR) of 80 percent up to a maximum of 1.2 percent anti-strip additive when tested in accordance with DOTD TR 322.

The job mix formula shall indicate a single rate of hydrated lime additive, when used. The job mix formula rate of hydrated lime additive shall not be less than 1.5 percent by weight (mass) of total mixture.

The job mix formula shall indicate the optimum mixing temperature. The job mix formula limits for mix temperature will be ±25°F (±14°C) from the optimum mixing temperature.

The job mix formula is to be inside the control points as detailed in Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Blending of aggregates, i.e., gravel and stone, will be allowed provided the final composite mixture and final product meets or exceeds all specifications requirements.

The plant shall be operated to produce, on a continuing basis, a mixture uniformly conforming to the approved job mix formula. When this is not the case, the contractor shall make satisfactory adjustments or cease operations. The District Laboratory Engineer may permit the contractor to submit a new Asphaltic Concrete Job Mix Formula form for approval. The contractor shall submit a new job mix formula whenever a plant begins initial operations for the Department in a specific location or whenever a plant experiences a change in materials or source of materials. A new job mix formula will also be required whenever there are significant changes in equipment, such as the introduction of a new crusher, drum mixer, burner, etc.

When reclaimed asphaltic pavement (RAP) is used in a roadway mix, the quantity of RAP shall be designated in the job mix formula and meet the requirements of Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. The engineer may require the contractor to reduce the percentage of RAP to meet acceptance requirements.

When the contractor changes a source of RAP, the new mix design shall be submitted, validated and approved if the type of aggregate changes (e.g. gravel to limestone) or the source change causes a change in acceptance tolerances. If the contractor determines that the source change will not cause a change in acceptance tolerances, the contractor may elect to integrate the new RAP source into the existing approved mix design provided the contractor submits a revised job mix formula cover sheet which shows the new source of RAP and other changes. A new validation will not be required. If subsequent acceptance tests indicate that the mix is out of tolerance, a new design will be required and appropriate payment adjustments will apply.

2.03 JOB MIX FORMULA VALIDATION

The first day's production or a maximum of 2000 tons (2000 Mg) of mix shall be used to validate a new JMF. The contractor and the Department, using the stratified random sampling approach, shall jointly take five (5) samples, one per validation sublot, during the validation lot. The contractor may elect to exclude test results representing the first 250 tons (250 Mg) from the validation analysis in order to make slight adjustments to the mix. The remaining validation lot, up to 1750 tons (1750 Mg), shall be divided into five (5) equal validation sublots and tested for validation analysis. If excluded from validation, the 250 tons (250 Mg) will be paid in accordance with Table 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Minimum testing shall include one theoretical maximum specific gravity (G_{mm}), one gyratory specimen compacted to N_{design}, one gyratory specimen compacted to N_{max}, and one oven extraction. As approved by the district laboratory engineer, the contractor and the Department shall jointly analyze the test results for the following parameters:

(1) Extracted Gradation
(2) Percent Extracted Asphalt Cement
(3) Percent Crushed Aggregate, (from cold feed blends)
(4) Theoretical Maximum Specific Gravity (G_{mm}) (aged for one hour)

The following parameters apply to samples aged for one hour in an oven at gyratory compaction temperature and compacted to N_{design}.

(5) Bulk Specific Gravity (G_{mb}) at N_{design}
(6) Percent G_{mm} at $N_{initial}$
(7) Percent Air Voids, VMA and VFA

The following parameters apply to samples aged for one hour in an oven at gyratory compaction temperature and compacted to N_{max}

(8) Bulk Specific Gravity (G_{mb}) at N_{max} measured and estimated
(9) Percent G_{mm} at N_{max} and Corrected percent G_{mm} at N_{design}
(10) Slope of the Gyratory Compaction Curve

The mean, standard deviation, Quality Index and percent within limits (PWL) of the test results shall be calculated in accordance with Subsection 5.04, Quality Level Analysis. The test data will be used to validate the JMF.

A JMF is considered validated if the following parameters are 90 percent within limits of the JMF and meet the specifications requirements.

(1) Extracted Gradations for the No. 8 and No. 200 (2.36 mm and 75 μm) sieves

(2) Theoretical Maximum Specific Gravity (G_{mm})

(3) Percent G_{mm} at $N_{initial}$

(4) Percent Air Voids at N_{design}

Additionally, the average of all validation tests for the other parameters shall be within the specifications limits.

Should the JMF validate on all but one parameter, the contractor may make adjustments and repeat the validation testing using the next day's production or a maximum of 2000 tons (2000 Mg). Should the JMF fail to validate on more than one parameter, the JMF will be considered non-valid, and the contractor will be required to submit a new JMF for approval. Upon validation of the JMF, the validation averages will be used for JMF target values. Payment for validation lots will be in accordance with acceptance pay parameters, except that five cores shall be obtained to determine density pay. After validating the JMF for mix properties, the contractor, witnessed by the Department, shall sample the next day's production and perform validation testing at the plant for DOTD TR 322 and AASHTO T 312 specimens. When the validation results are less than 80 percent, no further production for that job mix formula or any proposed job mix formula substituted for that mix type will be accepted on any DOTD project having DOTD TR 322 requirements until a passing plant-produced Tensile Strength Ratio (TSR) value is verified by the Department. A previously validated and approved JMF may be produced in lieu of the disapproved JMF.

Validation is not required for mixture designs used solely for bike paths, crossovers, curbs, driveways, guardrail widening, islands, joint repair, leveling, parking lots, patching, shoulders, turnouts, widening, and miscellaneous handwork, but the mixture must meet specifications requirements.

2.04 PLANT QUALITY CONTROL

For quality control purposes, the contractor shall obtain a minimum of two (2) samples of mixture from each sublot using a stratified random sampling approach. Test results for theoretical maximum specific gravity (G_{mm}) and measured bulk specific gravity (G_{mb}) at N_{max} and percent G_{mm} at $N_{initial}$, on samples of each sublot shall be reported. Control charts may be requested by the engineer if mixture problems develop. Quality control gyratory samples may be aged or unaged at the contractor's option, but the method chosen shall be used consistently throughout the project. If aged samples are used, report the measured G_{mb} at N_{max}. If unaged samples are used, report the estimated G_{mb} at N_{max}. One loose mix sample shall be taken from each sublot after placement of the mix in the truck. The mix shall be tested by the contractor at the plant for aggregate gradation, asphalt content and percent crushed aggregate. The mix shall be tested in accordance with DOTD TR 309, TR 323 and TR 306. The lot average and standard deviation shall be

determined for aggregate gradation and asphalt content. The percent within limits (PWL) shall be determined on the Nos. 8 and 200 (2.36 mm and 75 μm) sieves and for G_{mm}. Corrective action shall be taken if these parameters fall below 90 PWL. For each lot, the contractor shall report all quality control data to the DOTD Certified Plant Technician. 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.

The moisture content of the final mixture shall be minimized and uniformly controlled to ensure that placement and density requirements are met. The percent moisture in loose mix shall be reported once per lot and shall not exceed 0.3 percent by weight (mass) when tested in accordance with DOTD TR 319.

2.05 PLANT ACCEPTANCE

All Department inspection procedures, including sampling and testing, form the basis for acceptance of the asphaltic concrete. Sampling and testing shall be accomplished following a stratified sampling plan in accordance with the Materials Sampling Manual and specified test procedures. Times and locations shall be established by the engineer.

The Department will take samples or perform tests as outlined in these specifications, to ensure that the asphaltic concrete conforms to Department standards, which include job mix limits, typical sections, material properties, and surface deviations. Plant acceptance tests will be performed for VFA and air voids in the specimen compacted to N_{design} to determine the acceptability of the asphaltic concrete at the plant unless directed otherwise by the engineer. If the average VFA for 5 samples is outside the specifications limits, satisfactory adjustments must be made or production shall be discontinued. The plant acceptance tests for air voids shall be subject to payment adjustments and sampling and testing in accordance with the requirements specified herein.

Testing for percent air voids will be conducted by the Department. Test results of mixture specimens compacted to N_{design} shall comply with Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges when tested in accordance with AASHTO T 312 and DOTD TR 304. One sample will be taken from each of five (5) sublots. The data will be used to determine if the lot is outside acceptance limits shown in Table 502-5. If the lot is outside the acceptance limits, an adjustment in unit price for the lot will be made in accordance with Tables 502-7 or 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Acceptance testing for air voids will be conducted on the total lot quantity.

2.06 ROADWAY OPERATIONS

(A) Weather Limitations: Asphaltic concrete mixtures shall not be applied on a wet surface or when the ambient temperature is below 50°F (10°C) for wearing courses and 40°F (5°C) for base and binder courses, except that material in transit, or a maximum of 50 tons (45 Mg) in a surge bin or silo used as a surge bin at the time plant operation is discontinued may be placed; however, mixture placed shall perform satisfactorily and meet specification requirements. Inclement weather will be sufficient reason to terminate or not begin production.

When base course materials are placed in plan thicknesses of 2 3/4 inches (70 mm) or greater, these temperature limitations shall not apply provided all other specification requirements are met. When a wearing course is substituted for a binder course mixture the temperature limitation for binder course shall apply.

(B) Surface Preparation: The surface to be covered shall be approved prior to placing mixtures. The contractor shall maintain the surface until it is covered.

(1) Cleaning: The surface to be covered shall be swept 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. When mixtures are to be placed on portland cement concrete pavement or overlaid portland cement concrete, the contractor shall remove excess joint filler from the surface by an approved burning method. The contractor shall remove any existing raised pavement markers prior to asphaltic concrete overlay operations.

When brooming does not adequately clean the surface, the contractor shall wash the surface with water in addition to brooming to clean the surface.

When liquid asphalt is exposed to traffic for more than 1 calendar day, becomes contaminated, or degrades due to inclement weather, the liquid asphalt shall be reapplied at the initial recommended rate at no direct pay.

(2) Applying Liquid Asphalt Materials:
a. Existing Pavement Surfaces: Before constructing each course, an approved asphalt tack coat shall be applied in accordance with Section 32 12 13.16. The contractor shall protect the tack coat and spot patch as required.
b. Raw Aggregate Base Course and Raw Embankment Surfaces: The contractor shall apply an approved asphalt prime coat to unprimed surfaces, or protect in-place prime coat and spot patch as required with asphalt prime coat, in accordance with Section 32 12 13.19.
c. Cement and Lime Stabilized or Treated Embankment and Base Course Surfaces: The contractor shall apply an approved asphalt curing membrane when none is in place, or protect the in-place curing membrane and spot

patch, as required, with asphalt material in accordance with Section 32 12 13.20.

d. Other Surfaces: Contact surfaces of curbs, gutters, manholes, edges of longitudinal and transverse joints, and other structures shall be covered with a uniform coating of an approved asphalt tack coat complying with Section 32 12 13.16 before placing asphaltic mixtures.

(C) Joint Construction:

(1) Longitudinal Joints: Longitudinal joints shall be constructed by setting the screed to allow approximately 25 percent fluff and also overlapping the paver approximately 2 inches (50 mm) onto the adjacent pass. Prior to rolling, the overlapped mix shall be pushed back to the uncompacted side, without scattering loose material over the uncompacted mat, to form a vertical edge above the joint. The vertical edge shall then be compacted by rolling to form a smooth, sealed joint. Longitudinal joints in one layer shall offset those in the layer below by a minimum of 3 inches (75 mm); however, the joint in the top layer shall be offset 3 inches (75 mm) to 6 inches (150 mm) from the centerline of pavement when the roadway comprises two lanes of width, or offset 3 inches (75 mm) to 6 inches (150 mm) from lane lines when the roadway is more than two lanes. The narrow strip shall be constructed first.

Where adjacent paving strips are to be placed, the longitudinal edge joint of the existing strip shall be tacked.

(2) Transverse Joints: Transverse joints shall be butt joints formed by cutting back on the previously placed mixture to expose the full depth of the lift. An approved 10 foot (3.0 m) static straightedge shall be used to identify the location at which the previously placed mixture is to be cut back to maintain no greater than a 1/8 inch (3 mm) deviation in grade. The cut face of the previously placed mat shall be lightly tacked before fresh material is placed. The screed shall rest on shims that are approximately 25 percent of plan thickness placed on the compacted mat. Transverse joints shall be formed by an adequate crew. Transverse joints shall be checked by the engineer for surface tolerance using a stringline extended from a point 10 feet (3 m) before the joint to a point approximately 40 feet (12 m) beyond the joint. Any deviation in grade from the stringline in excess of 3/16 inch (5 mm) for roadway wearing courses and 1/4 inch (6 mm) for other courses shall be immediately corrected prior to the paving operation continuing beyond 100 feet (30 m) of the transverse joint. Additionally, the transverse joint shall meet the surface tolerance requirements of Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. The contractor shall make necessary corrections to the joint before continuing placement operations.

Transverse joints in succeeding lifts shall be offset at least 3 feet (1.0 m).

PART 3 HAULING, PAVING AND FINISHING

3.01 Mixtures shall be transported from the plant and delivered to the paver at a temperature no cooler than 25°F (14°C) below the lower limit of the approved job mix formula. The temperature of the mix going through the paver shall not be cooler than 250°F (120°C).

No loads shall be sent out 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.

When segregation occurs, haul trucks shall be loaded with a minimum of three drops of mix, the last of which shall be in the middle.

Each course of asphaltic mixture shall be placed in accordance with the specified lift thickness. When no lift thickness is specified, or when substitute mixtures are utilized as specified in Subsection 1.01(c), mixtures shall be placed in accordance with Table 502-5 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

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

(A) Coordination of Production: The contractor shall coordinate and manage plant production, transportation of mix and placement operations to achieve a high quality pavement and shall have 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 (50 mm) compacted thickness or less, the contractor will be permitted to pave one travel lane for a full day. The contractor shall pave the adjacent travel lane the next work day. When the adjacent travel lane is not paved the next calendar day and the longitudinal joint is exposed to traffic for more than 3 calendar days, and it has been determined that the subsequent roadway edge is not true to line and grade as previously constructed, the entire length of exposed longitudinal joint shall be cut back to plan thickness to a vertical edge and heavily tacked. When pavement layers are greater than 2 inches (50 mm) compacted thickness, the contractor shall place approximately 1/2 of each day's production in one lane and the remainder in the adjacent lane.

Pavement shall be protected from traffic until it has sufficiently hardened to the extent the surface is not damaged.

(B) Paving Operations: When placing the final two lifts of asphaltic concrete on the roadway travel lanes, a material transfer vehicle (MTV), as described in Subsection 32 10 01.1.15, will be required to deliver mixtures from the hauling equipment to the paving equipment, and to prevent segregation of the asphaltic concrete hot mix. The MTV is required regardless of ADT. All mixtures shall flow through the paver hopper. Mixtures dropped in front of the paver shall be either lifted into the hopper or rejected and cast aside. Delivery of material to the paver shall be at a uniform rate and in an amount within the capacity of paving and compacting equipment. The paver speed and number of trucks shall be adjusted to have one truck waiting in addition to the one at the paver in order to maintain continuous paving operations. The height of material in front of the screed shall remain uniform.

During mixture transfer, the paver shall not be jarred or moved out of alignment. The level of mix in the paver hopper shall not drop so low as to expose the hopper feed slats.

Pavers shall be designed and operated to place mixtures to required line, grade and surface tolerance without resorting to hand finishing.

Longitudinal joints and edges shall be constructed along lines established. Stringlines or other forms of longitudinal control shall be placed by the contractor for the paver to follow. The paver shall be positioned and operated to closely follow the established line. Irregularities in alignment shall be corrected by trimming or filling directly behind the paver.

After each load of material has been placed, the texture of the unrolled surface shall be checked to determine its uniformity. The adjustment of screed, tamping bars, feed screws, hopper feed, etc., shall be checked frequently and adjusted 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, paving operations shall be suspended until the cause is determined and corrected.

Surface irregularities shall be corrected directly behind the paver. Excess material forming high spots shall be removed. Indented areas shall be filled and finished smooth. Hand placement in accordance with Heading (c) for surface repair will be permitted. Material shall not be cast over the surface.

When a screed control device malfunctions during binder or wearing course operations, paving operations shall be immediately discontinued and shall not be resumed until the screed malfunction has been remedied. Material in transit may be placed. Material placed shall perform satisfactorily and meet specification requirements. Any cost overrun resulting from placing material without the automatic screed control device shall be borne by the contractor.

When paving and finishing operations are interrupted so that the mixture remaining in trucks, paver, paver hopper or on the pavement cools to such extent that it cannot be placed, finished or compacted to the same degree of smoothness and with the same texture and density as the uncooled mixture, the cooled mixture shall be removed and replaced at no direct pay.

When additional mix is required to increase superelevation in curves, the use of automatic slope control will be optional with the contractor.

The traveling reference plane method of construction will be required for airport runways unless designated otherwise on the plans. Unless the erected stringline is required or directed, the 30-foot (minimum) traveling reference plane method of construction shall be used for roadway travel lanes. The following requirements shall apply for mechanical pavers:

(1) Traveling Reference Plane: The traveling reference plane method shall be approved before use. After the initial paving strip of each lift is finished and compacted, adjacent paving strips shall be placed 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, the slope control device shall not be used. 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.

(2) Erected Stringline: The erected stringline method shall be used 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. Pavers for roadway travel lanes shall be equipped 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 (7.5 m) intervals tensioned between supports so that there is less than 1/8 inch (3 mm) variance between

supports when the sensor is in place. The stringline elevation will be verified by the Department using standard surveying practices.

If required, the initial paving strip of the first lift shall be 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, adjacent paving strips shall be laid using an approved traveling reference plane.

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

(C) 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. No casting will be allowed including casting the mixture from the truck to the grade. 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. The surface shall be checked before rolling and irregularities corrected.

PART 4 COMPACTION

4.01 (A) General: After placement, mixtures shall be uniformly compacted, by rolling while still hot, to at least the density specified in Table 502-4 of the 2006 Edition of the Louisiana Standards for Roads and Bridges. If continuous roller operation is discontinued, rollers shall be removed to cooler areas of the mat, where they will not leave surface indentations. The use of steel wheel rollers which result in excessive crushing of aggregate will not be permitted.

The rolling pattern established by the contractor shall be conducted by experienced operators in consistent sequences and by uniform methods that will obtain specified density and smoothness. Individual roller passes shall uniformly overlap preceding passes to ensure complete coverage of the paving area. The

speed and operation of rollers shall not displace, tear or crack the mat. Non-vibrating steel wheel rollers shall be operated with drive wheels toward the paver. Any operations causing displacement, tearing or cracking of the mat shall be immediately corrected.

Equipment which leaves tracks or indented areas which cannot be corrected in normal operations or fails to produce a satisfactory surface shall not be used. Operation of equipment resulting in accumulation of material and subsequent shedding of accumulated material into the mixture or onto the mat will not be permitted.

To prevent adhesion of mixture, wheels of steel wheel rollers shall be kept properly moistened, but excess water will not be permitted.

Pneumatic tire rollers shall be operated so that tires will retain adequate heat to prevent mix from adhering to tires. The pneumatic tire roller shall be operated at a contact pressure which will result in a uniform, tightly knit surface. The pneumatic tire roller shall be kept approximately 6 inches (150 mm) from unsupported edges of the paving strip; however, when an adjacent paving strip is down, the roller shall overlap the adjacent paving strip approximately 6 inches (150 mm).

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 asphaltic concrete placed over the asphalt treated drainage blanket. When mix is placed on newly constructed cement or lime stabilized or treated layers, vibratory rollers shall not be used for at least 7 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. The rolling equipment shall be capable of maintaining the pace of the paver and shall conform to Subsection 503.17.

The surface of mixtures after compaction shall be smooth and true to cross slope and grade within the tolerances specified. Mixtures that become loose, broken, contaminated or otherwise defective shall be removed and replaced with fresh hot mixture compacted to conform with 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. There shall be no more than 12 ripples or peaks in any 100-foot (30 m) section. Rippling indicates a problem with the paving operation or mix that requires immediate corrective action by the contractor; otherwise operations shall cease. Unacceptable areas shall be corrected at no direct pay. A profilograph trace may be required to define these areas.

(B) Rolling: After rolling, newly finished pavements shall have a uniform, tightly knit surface free of cracks, tears, roller marks or other deficiencies. Deficiencies shall be corrected at no direct pay and the contractor shall adjust operations to correct the problem. This may require the contractor to adjust the mix or furnish additional or different equipment.

(C) Hand Compaction: Along forms, curbs, headers, walls and at other places inaccessible to rollers, mixture shall be uniformly compacted to the satisfaction of the engineer with approved hand tampers or mechanical tampers, conforming to Subsection 32 10 01.1.18.

PART 5 ROADWAY QUALITY CONTROL

5.01 (A) Density: The contractor shall constantly monitor equipment, materials, and processes to ensure that density requirements are met.

(B) Surface Tolerance: The contractor shall constantly monitor equipment, materials, and processes to ensure that surface tolerance requirements are met. The contractor shall test the pavement during the first workday following placement, but in no case any later than 7 calendar days.

Surface tolerance testing will be required on wearing and binder courses for roadway travel lanes. It will be required on the wearing course only for shoulders, parking areas and airport runways and taxiways. For surface tolerance purposes, the wearing course is defined as the final lift placed. The binder course is defined as the last lift placed prior to the final lift.

Other lifts on which additional asphaltic concrete is to be placed shall be finished so that succeeding courses will meet the requirements of this subsection. Base courses on which portland cement concrete pavement is to be placed shall be finished so that the portland cement concrete pavement will meet the requirements of Section 32 13 13.

(1) Equipment: The contractor shall furnish an approved 10 foot (3.0 m) metal static straightedge for quality control and acceptance testing for transverse, cross slope and grade.

The contractor shall also furnish a DOTD certified inertial profiler, for quality control and acceptance, to measure both wheelpaths simultaneously with laser or infrared height sensing equipment. Inertial profilers shall be capable of testing the finished surface in the longitudinal direction for conformance to the surface tolerance requirements listed in this subsection. Longitudinal surface profile shall be measured in inches per mile (mm per km) in

accordance with DOTD TR 644 and reported as the International Roughness Index (IRI).

The Department will evaluate and verify the accuracy of the inertial profiler annually using static and dynamic tests in accordance with DOTD TR 644. Approved profilers will have a DOTD decal indicating the date of profiler verification and profiler system parameter settings. These settings shall be verified by the inspector before the first day of binder course paving and randomly thereafter.

For each project, a Department representative will observe the daily set up procedure and pre-operation tests, which shall be performed by the contractor in accordance with the manufacturer's procedures and DOTD TR 644. A copy of the manufacturer's setup procedure, pre-operation procedures, and operating procedure for measuring surface tolerance shall be available at all times during measurement.

(2) Transverse, Cross Slope and Grade:
a. Transverse: The contractor shall monitor and test the roadway for conformance to the requirements of Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. For turnouts, crossovers, detour roads, parking areas, and roadway or shoulder sections less than 500 feet (150 mm) in length, the wearing course shall be tested and the surface deviations shall not exceed 1/2 inch (15 mm). Areas with surface deviations in excess of specification limits shall be isolated and corrected by the contractor in accordance with Heading (4). The contractor shall control the transverse surface finish.

b. Cross Slope: When the plans require the section to be constructed to a specified cross slope, the contractor shall take measurements at selected locations, using a stringline, slope board or other comparable method. The contractor shall control the cross slope so that the values shown in Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges are not exceeded for each lane constructed. The contractor shall make corrections in accordance with Heading (4) of this subsection.

c. Grade: When the plans require the pavement to be constructed to a grade, the contractor shall perform tests for conformance at selected locations, using a stringline or other comparable method. The contractor shall control grade variations so that the tolerances shown in Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges are not exceeded. Grade tolerances shall apply to only one longitudinal line, such as the centerline or outside edge of pavement. The contractor shall make corrections in accordance with Heading (4) of this subsection.

(3) Longitudinal: The contractor shall report an average IRI number in inches per mile (mm per km) and shall measure and report the average IRI value for each wheelpath on every 0.05-mile (0.08 km) segment of highway. Isolated rough areas will not be allowed. Any 0.05-mile (0.08 km) individual wheelpath segment measurement of the binder and wearing courses shall meet the requirements of Table 502-8B of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. The contractor shall make corrections in accordance with Heading (4) of this subsection.

(4) Correction of Deficient Areas: The contractor shall correct areas not meeting Table 502-8B of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges requirements for individual wheelpath measurements in a 0.05-mile (0.08 km) segment.

a. Deficiencies in Wearing Course: The contractor shall correct deficiencies in the final wearing course by diamond grinding and applying a light tack coat, removing and replacing, or furnishing and placing a supplemental layer of wearing course mixture at least 1 1/2 inches (40 mm) 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, the contractor shall remove and replace or correct it by other methods approved by the engineer.

b. Deficiencies in Binder Courses: The contractor shall correct deficiencies in binder course, transverse, cross slope, and grade measurements to meet specification requirements at no direct pay. Corrections shall be made before subsequent courses are constructed.

c. Deficiencies in Shoulder Transverse, Cross Slope and Grade: The contractor shall correct deficiencies in these areas by grinding at the project engineer's direction.

5.02 ROADWAY ACCEPTANCE

Acceptance testing for pavement density, surface tolerance and dimensional tolerances will be conducted on that portion of the lot placed on each contract.

Hot mix exhibiting deficiencies before placement such as segregation, contamination, lumps, non-uniform coating, excessive temperature variations or other deficiencies, apparent on visual inspection, shall not be placed.

Hot mix exhibiting deficiencies, such as segregation, contamination, alignment deviations, variations in surface texture and appearance or other deficiencies, apparent on visual inspection, will not be accepted and shall be satisfactorily corrected and/or replaced at no direct pay. Poor construction practices such as

handwork, improper truck exchanges, improper joint construction, or other deficiencies, apparent on visual inspection, will not be accepted.

(A) Density: Acceptance testing for pavement density will be conducted by the Department. Three pavement samples for each mix use shall be obtained from each sublot within 24 hours after placement. When this falls on a day the contractor is not working, sampling shall be done within 3 calendar days. Sampling shall be performed using the random number tables shown in DOTD S605. If there are different mix uses within the same sublot, i.e. shoulder and roadway, then an additional core may be taken to ensure that there is at least one core per mix use. The density requirement for each lot will be as shown in Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges determined in accordance with DOTD TR 304. Payment will be made in accordance with Table 502-7B of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges using the total number of cores for the lot in accordance with Subsection 5.04. Payment for small quantity lots will be made in accordance with Table 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

When the sampling location determined by random sampling falls within areas that are to be replaced or within 1 foot (0.3 m) of the unsupported pavement edge, another random sampling location will be used.

Samples shall be cores approximately 4 inches (100 mm) or 6 inches (150 mm) in diameter taken by an approved core drill. The contractor shall furnish samples cut from the completed work. The removed pavement shall be replaced with hot or cold mixture and refinished during the work day coring is performed. No additional compensation will be allowed for furnishing test samples and replacing the areas with new pavement. Samples shall be taken by the contractor in the presence of the engineer's representative from areas selected by the Department in accordance with this subsection. Cores less than 1 3/8 inches (35 mm) thick shall not be used as pavement samples for payment determination.

Cores shall be transported to the plant in approved transport containers. Transportation containers will be sealed, signed, and dated by the inspector using an approved method. The individually wrapped core will also be sealed, signed, and dated by the inspector using an approved method. Any evidence of tampering with the core wrappings, sticker, or of opening the container or friction top can will result in the cores being rejected. Additional pavement samples will be required.

(B) Surface Tolerance: The contractor shall measure the top two lifts of the roadway travel lanes. 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. The contractor shall test the pavement

during the first workday following placement, but in no case any later than 7 calendar days.

(1) Equipment: For longitudinal surface tolerance testing, equipment and daily set-up and pre-operation procedures shall be in accordance with Subsection 5.01(B)(1). For transverse, cross slope and grade testing, the contractor shall furnish a 10-foot metal static straightedge for Department use.

(2) Transverse, 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 Subsection 5.01(B)(2) and Table 502-4 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, which shall not be exceeded. The contractor shall make corrections as directed in accordance with Subsection 5.01(B)(4).

(3) Longitudinal Surface Tolerance:
a. Acceptance: The contractor shall report an average IRI number in inches per mile (mm per km) and shall measure and report the average IRI value for each wheelpath on every 0.05-mile (0.08 km) segment of highway. The IRI values for the inside and outside wheelpaths shall be averaged and reported as the segment average and the mean of each segment average shall be reported as the sublot average. The individual wheelpath IRI values shall conform to the requirements of Table 502-8B of the 2006 Edition of the Louisiana Standard Specification for Roads and Bridges. The average sublot values shall conform to the requirements listed in Tables 502-8A. A DOTD inspector will be present for the final test run and will immediately receive a copy of the IRI results via USB flash drive. The contractor shall provide the engineer a copy of the IRI report. Acceptance of each sublot will be in accordance with Tables 502-8A and 502-8B of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, based on the IRI profile report. The Department may elect to perform and utilize independent ride quality test results for acceptance at any time.

b. Exceptions and Exclusions:
1. Excluded Areas: The Department will review the profile report obtained for each binder and wearing course on a sublot basis. In special cases or extenuating circumstances, the engineer may isolate or exclude sections of the profile. These special cases or extenuating circumstances may be curb and gutter sections that require the adjustment of cross-slope in order to maintain adequate drainage, manholes, catch basins, valve and junction boxes, street intersections, or other structures located in the roadway which cause abrupt deviations in the profile. This specification exclusion will not be used to simply isolate sections of road that are in poor condition when the project is let.
2. Secondary Areas: Ramps less than 1500 feet (460 m), tapers, shoulders and medians, or sections of pavement surfaces as directed by the engineer such as

300 feet (90 m) from bridge ends, will not be included in the ride quality index for payment purposes, but shall have a maximum IRI average of 110 or less in a sublot.

5.03 DIMENSIONAL REQUIREMENTS

Mixtures that are specified for payment on a cubic yard (cu m) or square yard (sq m) basis shall conform to the following dimensional requirements. Overthickness and overwidth will be accepted at no direct pay.

(A) Thickness: Thickness of mixtures will be determined in accordance with DOTD TR 602. Underthickness shall not exceed 1/4 inch (6 mm).
When grade adjustments are permitted for all mixtures except the final wearing course, areas with underthickness in excess of 1/4 inch (6 mm) shall be corrected to plan thickness at no direct pay by furnishing and placing additional mixture in accordance with Subsection 5.01(B)(4)b. For the final wearing course, areas with underthickness in excess of 1/4 inch (6 mm) shall be corrected to plan thickness at no direct pay by furnishing and placing a supplemental layer of wearing course mixture meeting specification requirements in accordance with Subsection 5.01(B)(4)a over the entire area for the full width of the roadway when grade adjustments are permitted.

When grade adjustments do not permit, the deficient underthickness area shall be removed and replaced at no direct pay.

(B) Width: The width of completed courses will be determined in accordance with DOTD TR 602. Underwidths shall be corrected by furnishing and placing additional mixture to a minimum width of 1 foot (0.3 m) and plan thickness at no direct pay.

5.04 QUALITY LEVEL ANALYSIS

The Quality Level Analysis is a statistical quality control/quality acceptance (QC/QA) method for validating Job Mix Formulas (JMF), contractor's quality control, project acceptance and payment for all Superpave asphaltic concrete.

The mean ($\overline{X}$) is the average of a set of numbers. To determine the mean add the numbers (X_i) in the set and divide by the number of numbers (n) in the set.

$$Mean = \overline{X} = \frac{X_1 + X_2 + X_3 + \cdots + X_n}{n} = \frac{\sum_{i=1}^{n} X_i}{n}$$

The standard deviation of a set of numbers measures the spread of the numbers in the set or the deviation from the mean. Calculate the standard deviation according to the following formula:

$$Standard\ Deviation = s = \sqrt{\frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 + \cdots + (X_i - \overline{X})^2}{n-1}} = \sqrt{\frac{\sum_{i=1}^{n}(X_i - \overline{X})^2}{n-1}}$$

A Quality Index is calculated using both the upper and lower specification limits (if applicable). The Quality Index calculated using the upper or higher specification limit is called the Upper Quality Index (Q_U). The Quality Index calculated using the lower specification limit is called the Lower Quality Index (Q_L).

$$Upper\ Quality\ Index = Q_U = \frac{USL - \overline{X}}{s} \qquad Lower\ Quality\ Index = Q_L = \frac{\overline{X} - LSL}{s}$$

To determine each Quality Index, the specification limits are added or subtracted from the mean of the test results and the result is divided by the standard deviation as shown below.

Where: USL = upper specification limit
LSL = lower specification limit

Table 502-6 of the 20056 Edition of the Louisiana Standard Specifications for Roads and Bridges is used to convert the Quality Index into the PWL value. A PWL is calculated for each Quality Index (upper and lower) and combined for a total PWL calculated in accordance with the formula:

$$PWL = PWL_L + PWL_U - 100$$

where: PWL_L = lower percent within limits
PWL_U = upper percent within limits

In using Table 502-6, the appropriate columns corresponding to the number of test results must be used.

If a specification requirement does not have both an upper and lower limit only one Quality Index and PWL, upper or lower as appropriate, is calculated and the other PWL is equal to 100 in the total PWL calculation.

5.03 LOT SIZES

A lot is a segment of continuous production of asphaltic concrete mixture from the same job mix formula produced for the Department at an individual plant. A standard lot size is 5,000 tons (5000 Mg). A standard sublot size is 1,000 tons (1000 Mg). Additional adjustments may be made to the standard lot or sublot size as specified in this subsection. The final sublot, at the end of a project lot, may be increased up to 150 percent to accommodate hauling unit capacity.

With good historical performance, and when agreed upon by the engineer and contractor, the lot size may be increased up to 10,000 tons, with corresponding sublot size up to 2000 tons (2000 Mg). Twenty-four hour per day plant production usually necessitates such an increase.

The engineer or contractor may decrease the size of an individual lot for any of the following conditions:

(1) The interval between continuous production exceeds 7 calendar days.
(2) A new job mix formula is accepted.
(3) The final lot is less than 5,000 tons (5000 Mg).
(4) The total project quantity is less than 5000 tons (5000 Mg).
(5) A payment adjustment will be applied to the portion of the lot already produced, provided adjustments have been made to bring the asphaltic concrete into compliance with specifications.

For lots with 3000 tons or greater, PWL calculations will be required in accordance with Table 502-6 and Table 502-7 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Lots with less than 3000 tons (3000 Mg) of mix are paid as Small Quantity Lots. Only standard 1000 ton (1000 Mg) sublots will be allowed when determining pay for Small Quantity Lots. Each 1000 ton (1000 Mg) sublot, or less, as applicable, will be paid individually in accordance with Table 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Any mixtures used for bike paths, crossovers, curbs, driveways, guardrail widening, islands, joint repair, leveling, parking lots, shoulders, turnouts, patching, widening, and miscellaneous handwork will be paid as a Small Quantity Lot, and separately in 1000 ton sublots, or portions thereof, in accordance with this subsection and Table 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Pavement density and surface tolerance requirements will not be applied for short irregular sections, such as curbs, driveways, guardrail widening, islands, joint repair, leveling, and turnouts; however, hot mix shall be placed to provide a neat, uniform appearance and shall be compacted by satisfactory methods.

For projects, or separate locations within a project, requiring less than 250 tons (250 Mg), the job mix formula, 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.

PART 6 MEASUREMENT

Asphalt tack coat, prime coat or curing membrane will not be measured for payment.

(A) Weight Measurement: Asphaltic concrete will be measured by the ton of 2,000 pounds (megagrams) from printed weights as provided in Section 32 10 01. Stamped printer tickets will be issued for each truckload of material delivered. Material lost, wasted, rejected or applied contrary to specifications will not be measured for payment.

Estimated quantities of asphaltic concrete shown on the plans are based on 110 lb/sq yd/inch (2.35 kg/sq m/mm) thickness. The measured quantity of asphaltic mixtures will be multiplied by the following adjustment factor 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

(B) 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 to 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.

(C) Surface Tolerance Incentive Measurement: At the completion of construction of the wearing course travel lanes, the contractor, in the presence of a DOTD representative, shall measure a continuous profile from the start station to the end station of the construction project for the purpose of determining qualification for incentive pay under Subsection 32 11 26.16(e). Bridges and 300 feet (90 m) on each end of the bridge will be excluded from measurements for surface tolerance incentive pay.

PART 7 PAYMENT

6.01 (A) General: Payment for asphaltic 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.

Payment for asphaltic concrete will be made at the contract unit price on a lot basis as defined in Subsection 5.03. When the mix does not meet requirements in the areas listed in this subsection, the Payment Adjustment Schedule shown in Tables 502-7, 502-8 or 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges will be applied. 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 adjustments shall be made, or production shall be discontinued.

(B) Wearing Course Mixes: For wearing course travel lanes, adjustments in contract price for plant and roadway deficiencies or incentives will be based on the average of the percent payments for plant air voids, roadway density, and surface tolerance. For all other wearing course applications, payment adjustment will be based on the average of the percent payments for plant air voids and roadway density.

(C) Base, Binder and Shoulder Mixes: For base and binder courses for travel lanes and all shoulder mixes, adjustments in contract price for plant and roadway deficiencies or incentives will be based on the average of the percent payments for plant air voids and roadway density. Final adjustments in unit price will be as described in Tables 502-7 and 502-9 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

(D) Erected Stringline: When the use of an erected stringline is not specified, but directed by the engineer, an additional payment of $500 per contract plus $0.25 per linear foot ($0.75 per lin m) 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.

(E) Longitudinal Surface Tolerance Incentive Pay: For Category A projects and in accordance with Table 502-8A of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, a surface tolerance incentive payment equal to 5 percent of the contract unit price for the theoretical travel lane quantity of the wearing course item will be paid if the contractor achieves a project average IRI of 45 or less as measured at the completion of the project. No lot of wearing course on the project shall be less than 100 percent for surface tolerance. Only Category A projects are eligible for incentive pay. Any grinding except within 300 feet (90 m) of a bridge end will cause the roadway to be ineligible for surface tolerance incentive pay.

Payment will be made under: Item No.	Pay Item	Pay Unit
32 11 26-01	Superpave Asphaltic Concrete	Ton (Mg)
32 11 26-02	Superpave Asphaltic Concrete	Cubic Yard (Cu m)
32 11 26-03	Superpave Asphaltic Concrete	Square Yard (Sq m)

REFERENCES: Table 32 11 26-4 thru 32 11 26-8 are hereby included as part of this specification by reference (LADOTD Standard Specifications for Roads and Bridges, 2006 Edition).

IN-PLACE CEMENT STABILIZED BASE COURSE

PART 1 DESCRIPTION

1.01 This work consists of scarifying, pulverizing, blending, shaping and stabilizing roadbed material with portland cement or portland-pozzolan cement in accordance with the lines, grades, thickness and sections established or shown on the plans.

This cement stabilization is primarily for existing roadbed materials. When specified, the contractor shall furnish and place materials under different pay items to be stabilized in accordance with this section.

With approval, concrete complying with Section 32 13 13 or asphaltic concrete complying with Section 32 11 26 may be used in lieu of the specified base course material in areas that are inaccessible for mixing and compacting in turnouts and crossovers, and in other isolated or irregular areas. The concrete shall be placed, consolidated, finished, and cured as directed in accordance with Section 03 30 00. The contractor shall remove and satisfactorily dispose of existing materials as required to accommodate placement of the portland cement concrete or asphaltic concrete at no direct pay. Excess material shall be disposed of in accordance with Subsection 202.02 of the 2006 Edition of the Louisiana Standard Specification for Roads and Bridges.

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

PART 2 MATERIALS

2.01 Materials shall comply with the following Sections or Subsections of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges:

Portland Cement 1001.01
Portland-Pozzolan Cement 1001.02
Emulsified Asphalt 1002
Water 1018.01

Portland cement shall be Type I or II. Portland-pozzolan cement shall be Type IP. The quantity of cement used shall be supported by proof of delivery.

Soils or soil-aggregate combinations furnished by the contractor for stabilization in accordance with this section shall comply with the requirements of Subsection 302-.02(a) of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

PART 3 EQUIPMENT

3.01 Equipment necessary to produce a finished base course which meets specification requirements shall be furnished and maintained by the contractor. Equipment shall be approved prior to use. Pulverization shall be accomplished using an approved in-place mixer.

The in-place mixer shall be equipped with a spray bar which has the capability of applying water across the full width of the cut and shall be adjustable to prevent overlap of water distribution on adjacent paths.

Cement may be distributed from transports using spreader bars approved by the engineer. The engineer may require the use of a cement spreader capable of width adjustment and equipped with a calibrated spreader box if a uniform cement spread cannot be achieved, or to control dust. The distribution of dry additives shall be monitored using DOTD TR 436, Method A.

Compaction equipment shall be conventional sheepsfoot type roller or a self-propelled tamping foot compactor-type roller for initial compaction. The spikes shall be sufficient in size and number to provide uniform compaction for the full width and depth of the base course. Finish rolling shall be with a pneumatic tire roller.

PART 4 PREPARATION OF ROADBED

4.01 Unless otherwise designated in the plans, all existing asphaltic concrete surfacing except the bottom 1 inch (25 mm) shall be removed in accordance with Section 509 prior to cement stabilization. Removed asphaltic concrete surfacing shall be used in accordance with Subsection 32 01 16.71 (1.3) as amended by the project specifications. During these removal and replacement operations, the contractor shall maintain the areas being used by public traffic in a safe condition. The contractor shall scarify and pulverize materials to be stabilized for the full width and depth of the base course. Existing asphaltic surfacing which is not removed shall be pulverized and uniformly mixed with materials below the surfacing.

Preparation of roadbed shall not be performed in excess of 2 miles (3 km) in advance of roadway base course stabilization. When approved by the project engineer, the 2-mile (3 km) limit may be extended. However, when the 2 mile (3 km) limit is extended, the lag between preparation of roadbed and base stabilization shall not exceed 5 working days. When shoulders are stabilized separately from roadway base, the 2-mile (3 km) limitation will not apply.

The scarified and pulverized material shall be blended from edge of base to edge of base to achieve uniform blending. When existing material is not uniform across

the full width to be stabilized, the material shall be blended to form a uniform blend for the full width and depth of the base course.

The roadbed shall be scarified and pulverized to at least 60 percent passing the No. 4 (4.75 mm) sieve in accordance with DOTD TR 431 prior to mixing with cement. The contractor shall identify and remove existing concrete or asphaltic concrete patches encountered during roadbed preparation operations. Patches will be removed and disposed of in accordance with Subsection 202.02 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. The provisions of Subsections 32 11 33.12 and 32 11 33.13 will apply for measurement and pay.

After the roadbed has been prepared as specified above, the contractor shall shape the roadbed to the required section and uniformly compact the roadbed material to at least 93.0 percent of maximum dry density prior to mixing with cement. Maximum dry density will be determined in accordance with DOTD TR 415 or TR 418 and in-place density will be determined in accordance with DOTD TR 401. Areas which cannot be compacted to 93.0 percent of maximum dry density shall be corrected at no direct pay.

PART 5 MIXING

5.01 The method of spread shall be such that the amount of cement used can be readily determined when tested in accordance with DOTD TR 436. Cement shall be uniformly spread and mixed with the material. A minimum of two passes with the mixer (stabilizer) will be required. The mixture shall be shaped to the required section. Water shall be added as needed by means of the mixer and shall be uniformly incorporated in the mixture in amounts required to attain optimum moisture for the mixture. During the mixing process, water shall be added 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. Wet streaks or spots will not be allowed. Optimum moisture of the mixture will be determined in accordance with DOTD TR 415 or TR 418. The percentage of moisture determined in accordance with DOTD TR 403 in the mixture by dry weight shall not vary from optimum moisture by more than ±2 percent at the time of compaction.

PART 6 COMPACTING AND FINISHING

6.01 The mixture shall be uniformly compacted immediately upon completion of mixing to the specified depth and width shown in the plans. Initial compaction shall be completed with an approved sheepsfoot-type roller or a self-propelled tamping foot compactor-type roller in such a manner that no internal laminations occur in the completed base course. Final compaction shall be with a pneumatic tire roller.

The surface shall be kept uniformly moist during compacting and final finishing. Compaction shall continue until each lift of base course has met the requirements of Subsection 32 11 33.11.

At places inaccessible to rollers, such as edges adjacent to curb and gutter sections, the mixture shall be compacted using devices that will obtain the specified density without damage to adjacent structures.

Compaction and finishing operations shall be completed within 3 hours after initial placement of cement on base course materials. Upon expiration of the 3-hour period after initial placement, only tight blading of the base course surface will be allowed. Bladed material shall not be drifted along the base, but shall be wasted. Stabilized material shall be utilized in the base course except that small amount necessary for tight blading. Excessive blading to achieve plan depth will not be allowed. The contractor shall complete operations, including tight blading, before the end of the day. The finished base course shall have a smooth, uniform, closely knit surface, free from ridges, waves, laminations, or loose material. No cement shall be spread within two hours of sunset, unless otherwise approved by the project engineer.

PART 7 QUALITY CONTROL

7.01 The contractor shall control the preparation of roadbed, selection and placement of materials, cement spread, mixing, compaction, moisture content, density, thickness, width, surface finish, grade and cross slope so that the completed base course is uniform and conforms to plan dimensions and other acceptance requirements as provided herein. The contractor shall control his operations so that contamination, segregation, soft spots, wet spots, laminations and other deficiencies are prevented. The contractor shall be responsible for taking such tests as necessary to adequately control the work.

PART 8 PROTECTION AND CURING

8.01 Upon completion of final finishing, the base shall be immediately protected against rapid drying by applying an asphalt curing membrane in accordance with Section 32 12 13.20. Asphalt curing membrane shall be placed on the same day as stabilizing. Complete coverage of curing membrane shall be maintained from initial application until the placement of the next course. When traffic, including construction equipment, is allowed on the base course, at least the first lift of surfacing shall be placed within 30 calendar days unless otherwise directed.

PART 9 MAINTENANCE

9.01 The contractor shall protect the completed base course from damage due to either public traffic or the contractor's operations, and shall satisfactorily maintain the

completed base course including asphalt curing membrane. Damaged base course shall be repaired by the contractor at no direct pay. When patching of the base course is required, in addition to removing damaged or unsound base course, the contractor shall remove a sufficient width and depth of base course to ensure satisfactory placement of patching material. The engineer will approve the type of patching materials before use. Patching or other repair of the base course shall be made in such manner as to restore a uniform surface, shall conform to the requirements of the material being used and shall be completed prior to surfacing operations.

When maintenance of traffic is not required, neither public traffic nor construction traffic shall be allowed on the completed base course for a 72-hour curing period. When maintenance of traffic is required, both public traffic and construction traffic shall be routed off the completed base course onto shoulders or other suitable areas during the 72-hour curing period when conditions permit.

When traffic is permitted to use the completed base after a 72-hour curing period and prior to the construction of the surface course, the base shall be further protected by additional applications of asphalt curing membrane as directed at no direct pay in accordance with Subsection 32 11 33.10.

Prior to surface course construction, the contractor shall clean the base course and apply and maintain additional asphalt curing membrane as directed at no direct pay.

Any weak spots that develop shall be satisfactorily corrected and the base kept free from deficiencies and true to grade and cross section at no direct pay. When the surfacing is asphaltic concrete the first lift of surfacing shall be placed within 30 calendar days.

PART 10 WEATHER LIMITATIONS

10.01 Mixing will not be permitted when the base course material is frozen, when raining, when the ambient air temperature is below 35°F (2°C), or the temperature forecasted by the U.S. Weather Service is to be 25°F (-3°C) or less within the 24 hour period following placement.

PART 11 ACCEPTANCE REQUIREMENTS

11.01 Soils and aggregates will be tested by the Department from samples taken after preparation of the roadbed.

Cement spread rate will be tested in accordance with DOTD TR 436.

The moisture content of the cement stabilized mixtures will be tested for compliance with optimum moisture content in accordance with DOTD TR 403 at placement at least twice per day.

The pulverization of the prepared roadbed will be tested in accordance with DOTD TR 431, and shall be at least 60 percent passing the No. 4 (4.75 mm) sieve.

The completed base course will be checked for determining acceptance in increments of 1,000 linear feet (300 lin m) per roadway or 2,000 linear feet (600 lin m) per shoulder constructed separately.

(a) Density Requirements: Upon completion of compaction operations, in-place density will be determined in accordance with DOTD TR 401. The density requirement as based on DOTD TR 415 or TR 418 will be 95.0 percent of maximum density. When the density test value for the section is below 95.0 percent, a payment adjustment will be applied in accordance with Table 1 below.

Table 32 11 33-1

Density Acceptance and Payment Schedule Density Test Value	Percent of Contract Unit Price
95.0 & Above	100
93.0 to 94.9	90
90.0 to 92.9	75
Below 90.0	50 or Remove[1]

[1] At the option of the Department after investigation.

(b) Thickness Requirements: The thickness of the completed base course will be determined in accordance with DOTD TR 602. The completed base course shall not vary from plan thickness in excess of the tolerances in Table 32 11 33-2 as follows. Base course thickness deficiencies in excess of these tolerances shall be corrected as specified herein at no direct pay.

Table 32 11 33-2

Base Course Thickness Tolerance Underthickness, Inches (mm)	Overthickness, Inches (mm)
3/4 (20)	1 1/2 (40)

Any failing area will be isolated for purposes of correction. Base course thickness deficiencies in excess of the foregoing tolerances shall be corrected as follows. When no grade adjustments are permitted, thickness deficiencies shall be corrected by restabilizing with cement or removing and replacing the full depth of base course in deficient areas with one of the following materials:

(1) Cement stabilized base course.

(2) Asphaltic concrete complying with Section 32 11 26.

(3) Concrete complying with Section 32 13 13.

When grade adjustments are permitted, the contractor shall have the option of correcting deficiencies by furnishing and placing a supplemental layer of asphaltic concrete complying with Section 32 11 26 for the full width of base course in lieu of removing and replacing deficient base course. When approved, corrections may be made by restabilizing the existing material in accordance with this section. Thickness of the supplemental layer of asphaltic concrete shall be in accordance with Table 32 11 33-3 as follows.

Table 32 11 33-3

Supplemental Asphaltic Concrete Layer Thickness Underthickness, Inches (mm)	**Overthickness, Inches (mm)**	**Minimum Thickness of Supplemental Asphaltic Concrete[1], Inches (mm)**
1 to 1 1/2 (30 to 40) 1 3/4 to 2 (45 to 50) 2 1/4 to 2 1/2 (60 to 65) Over 2 1/2 (Over 65)	1 3/4 to 2 (45 to 50) 2 1/4 to 2 1/2 (60 to 65) 2 3/4 to 3 (70 to 80) Over 3 (Over 80)	1 1/4 (35) 1 1/2 (40) 2 (50) Remove and Replace[2]

[1] May be placed with subsequent lift of asphaltic concrete.

[2] At the option of the Department after investigation

(c) Width Requirements: The width of the completed base course will be determined in accordance with DOTD TR 602. Roadway base course width shall not vary from plan width in excess of +6 inches (+150 mm). Shoulder base course width shall not vary from plan width in excess of +3 inches (+75 mm). No tolerances are provided for underwidths of shoulder or roadway bases. When the base course for roadway and shoulders are constructed at the same time, the 6-inch (150 mm) width tolerance will be applied. Base course width deficiencies in excess of foregoing tolerances shall be corrected as follows at the contractor's expense.

(1) Overwidth: When no grade adjustments are permitted, the full depth and width of base course in isolated areas having overwidths in excess of the foregoing tolerances shall be restabilized full width with cement or removed and replaced to the plan width with asphaltic concrete complying with Section 32 11 26 or concrete complying with Section 32 13 13.

In lieu of removing and replacing overwidth base course, areas of the deficient base course will be allowed to remain in place at a payment adjustment of 90 percent of the contract unit price for the entire lot.

When grade adjustments are permitted, the contractor shall correct base course width deficiencies by removing and replacing as specified above, or by furnishing and placing a 1 1/4 inch (35 mm) thick supplemental layer of asphaltic concrete complying with Section 502 for the full width of the roadway.

(2) Underwidth: Underwidths of base course in excess of the foregoing tolerances shall be corrected to plan width by restabilizing the full width with cement or by furnishing and placing additional materials; however, the width and thickness of the widening materials shall be not less than 12 inches (300 mm). Materials used for widening the deficient base course shall be the same as specified for overwidth correction in Heading (1).

(d) Grade and Cross-slope: The finished grade shall be within ±1/2 inch (±15 mm) of the established grade. The cross-slope shall not vary by more than ±0.003 ft/ft (±3 mm/m).

(e) Correction of Deficiencies: The contractor shall correct deficiencies in surface finish, grade, contamination, segregation, soft spots, wet spots, laminations and other deficiencies at no direct pay. Deficiencies shall be corrected by removing and replacing or as directed.

PART 12 MEASUREMENT

12.01 The quantity of in-place cement stabilized base course for payment will be the design areas as specified in the plans and adjustments thereto. The design quantity is based on the horizontal dimensions of the completed base course shown on the plans. The design quantity will be adjusted if the engineer makes changes to adjust to field conditions, if design errors are proven, or if design changes are necessary.

Removal of existing patches will be measured by the square yard (sq m). This measurement will be determined and documented jointly by the contractor and project engineer. If no item is included in the contract, measurement will be in accordance with 109.04 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

PART 13 PAYMENT

13.01 Payment for in-place cement stabilized base course will be made at the contract unit price, adjusted as specified in Subsection 303.11 and the following provisions, which include furnishing required portland cement, water, and asphalt curing membrane, and performing necessary roadbed preparation. Payment for removing all existing asphaltic concrete surfacing will be made under Section 32 01 16.71 except for the bottom 1 inch (25 mm). No direct payment will be made for removal and disposal of the remaining [bottom 1 inch (25 mm)] of asphaltic surfacing or maintaining the areas in safe condition for traffic.

If the actual required percent of cement differs from that required by the contract documents, payment will be increased or decreased based on the difference in required quantity of cement at the price of cement shown on paid invoices (total

of all charges). The contractor shall provide copies of paid invoices for this determination. If the contract documents do not specify a percent cement, 8 percent cement will be used for bid purposes.

Removal of existing patches will be paid at the contract unit price or if no item is provided, in accordance with Subsection 109.04 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. However, no payment will be made unless the contractor identifies the patches and participates in the measurement and documentation.

Payment adjustments will be applied for specification deviations of asphalt materials in accordance with Section 1002 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges based on the invoice price per gallon (L). The Materials and Testing Section will provide the payment adjustment percentage for properties of asphaltic materials.

Item No.	Pay Item	Pay Unit
01	In-Place Cement Stabilized Base Course	
	8 in Thick	Square Yard (Sq Yd)
02	In-Place Cement Stabilized Base Course	
	12 in Thick	Square Yard (Sq Yd)
03	Removal of Existing Patches	Square Yard (Sq Yd)

ASPHALT TACK COAT

PART 1 DESCRIPTION

1.01 This work consists of preparing and treating existing asphaltic or portland cement concrete pavement surfaces with asphalt material in accordance with these specifications and in conformity with the lines shown on the plans or established.

PART 2 MATERIALS

2.01 ASPHALT MATERIALS: Tack coat shall be an undiluted modified asphalt emulsion Grade CRS-2P, CSS-1, SS-1, SS-1P, or SS-1L complying with Section 1002.

2.02 WEATHER LIMITATIONS: Asphalt tack coat shall not be applied on a wet surface or when the ambient air temperature is below 40°F (5°C).

2.03 EQUIPMENT: The contractor shall provide equipment for applying asphalt material and preparation of the surface to be tacked. Equipment shall conform to Subsections 32 10 01.1.14 and 32 10 01.1.18. A hand-held pressure nozzle may be used for tack coat application in lieu of the spray bar/tachometer combination for irregular sections or short sections of 1500 feet (450 m) or less.

2.04 SURFACE PREPARATION: The surface shall be cleaned by sweeping or other approved methods. Edges of existing pavements which will form joints with new pavement shall be satisfactorily cleaned before tack coat is applied.

2.05 APPLICATION: Asphalt shall be uniformly applied to a clean dry surface with no bare areas, streaks or puddles with an asphalt distributor at a rate in accordance with Table 32 12 13.16-1. These rates may be raised or reduced as directed.

Table 32 12 13.16 - 1

Asphalt Tack Coats Existing Surface	Rate; Gal/Sq yd (L/Sq m)[1]
Bleeding Surface Treatment	0.02 (0.09)
Dry Surface Treatment	0.03 (0.14)
New Hot Mix	0.03 (0.14)
Old Hot Mix	0.07 (0.32)
Portland Cement Concrete	0.07 (0.32)
Friction Course	0.05 (0.23)
Cold Planed Surface[2]	0.08 (0.36)

[1] Rates are minimum rates of undiluted asphalt emulsion. [2] Minimum of two applications.

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

Tack coat shall be applied in such manner as to cause the least inconvenience to traffic. The contractor will be permitted to apply the tack coat one calendar day prior to the mixture laydown; however, when tack coat has been damaged by traffic pick-up or contaminated by dirt, dust or mud, the surface shall be cleaned and retacked prior to the mixture laydown at no direct pay. Tacked surfaces exposed to traffic for more than 24 hours or damaged due to inclement weather shall be retacked at no direct pay.

PART 3 MEASUREMENT AND PAYMENT

3.01 Asphalt tack coat will not be measured for payment; however, payment under the contract will be subject to the payment adjustment provisions of Section 1002 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges for specification deviations of the asphalt materials. The Materials and Testing Section will provide the payment adjustment percentage for asphalt materials.

ASPHALT PRIME COAT

PART 1 GENERAL

1.01 DESCRIPTION: This work consists of preparing and treating a surface with asphalt material in conformance with these specifications and in conformity with lines shown on the plans or established.

1.02 ASPHALTIC MATERIALS: Prime coat shall be cutback asphalt Grade MC-30, MC-70, or AEP Emulsified Asphalt complying with Section 1002.

1.03 WEATHER LIMITATIONS: Asphalt materials shall not be applied on a wet surface or when ambient air temperature is less than 35°F (2°C) in the shade.

1.04 EQUIPMENT: The contractor shall provide the necessary equipment for proper construction of the work. Equipment shall be approved before construction begins and shall be maintained in satisfactory working condition. Equipment shall conform to Subsection 32 10 01.1.14.

1.05 SURFACE PREPARATION: The surface to be coated shall be shaped to required grade and section, shall be free from ruts, corrugations, segregated material or other irregularities, and shall be compacted to required density. Delays in priming may necessitate reprocessing or reshaping to provide a smooth, compacted surface.

1.06 APPLICATION: Prime coat shall extend 6 inches (150 mm) beyond the width of surfacing shown on the plans. The prime coat shall not be applied until the surface has been satisfactorily prepared and is dry.

Prime coat shall be applied at the rates and temperatures shown in Table 32 12 13.19 - 1. Quantities of prime coat shall not vary from that shown in Table 32 12 13.19 - 1.

Table 32 12 13.19 - 1

Prime Coats Asphalt Grade	Application Rate Gal/Sq Yd (L/Sq m)		Application Temperature °F (°C)	
	Min.	Max.	Min.	Max
MC-30	0.25 (1.15)	0.30 (1.35)	60 (15)	120 (50)
MC-70	0.25 (1.15)	0.30 (1.35)	100 (40)	180 (80)
AEP	0.25 (1.15)	0.30 (1.35)	60 (15)	120 (50)

1.07 PROTECTION: After prime coat has been applied it shall cure for a minimum of 24 hours before the surfacing is placed. The contractor shall keep traffic off the surface until the prime coat has properly cured, unless otherwise permitted.

If traffic is permitted, the contractor may be required to spread approved granular material, as directed, over the prime coat at no direct pay.

The prime coat shall be maintained intact. When required, the primed surface shall be thoroughly cleaned prior to the placement of surfacing.

Where the prime coat has failed, the failed area shall be cleaned and be recoated with prime coat at no direct pay. When the prime coat is generally unsatisfactory, the contractor shall reprime the unsatisfactory surface at no direct pay.

PART 2 MEASUREMENT AND PAYMENT

2.01 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 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges 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.

ASPHALT CURING MEMBRANE

PART 1 GENERAL

1.01 DESCRIPTION: This work consists of the application and maintenance of an asphalt curing membrane to the surface of cement or lime treated or stabilized materials in compliance with these specifications or as directed.

1.02 MATERIALS: Asphalt for curing membrane shall be an emulsified asphalt or an emulsified petroleum resin (EPR-1) complying with Section 1002 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Water shall comply with Subsection 1018.01 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

1.03 WEATHER LIMITATIONS: Asphalt curing membrane shall not be applied when the temperature is below 35°F (2°C), unless otherwise permitted.

1.04 EQUIPMENT: The contractor shall provide and maintain the necessary equipment for proper construction of this work. The equipment shall be approved before construction begins.

1.05 SURFACE PREPARATION: The surface to which curing membrane is to be applied shall be free from ruts, corrugations, loose material or other irregularities.

1.06 APPLICATION: The asphalt curing membrane shall be applied immediately upon completion of final finishing of the final lift of the surface. The emulsified asphalt curing membrane shall be uniformly applied at a minimum rate of 0.10 gallon per square yard (0.45 L/sq m) of undiluted emulsified asphalt. The EPR-1 curing membrane shall be uniformly applied at a minimum rate of 0.20 gallon per square yard (0.90 L/sq m) of undiluted resin. The undiluted emulsified petroleum resin shall consist of 5 parts water and 1 part resin concentrate. Any additional applications required shall be placed by the contractor at no direct pay. When emulsified asphalt is diluted with water and applied in multiple passes of the distributor, the total amount of asphalt material applied shall be increased so that the residual amount of asphalt material equals a minimum of 0.10 gallon per square yard (0.45 L/sq m). Extraneous material which has collected on the base shall be removed before additional application of asphalt curing membrane. The surface shall be maintained and repaired before additional applications.

1.07 PROTECTION: After the curing membrane has been applied, the contractor shall keep public and construction traffic off the surface until the curing membrane has properly cured, unless otherwise directed. The curing membrane shall be maintained by the contractor at no direct pay until the surfacing has been placed. When traffic is permitted, additional curing membrane shall be applied at intervals to protect and cure the surface at no direct pay.

PART 2 MEASUREMENT AND PAYMENT

2.01 Asphalt curing membrane will not be measured for payment; however, payment under the contract will be subject to the payment adjustment provisions of Section 1002 of the 2006 Edition of the Standard Specifications for Roads and Bridges for specification deviations of the asphalt materials. The Materials and Testing Section will provide the payment adjustment percentage for asphalt materials. Water will not be measured for payment.

ASPHALTIC CONCRETE PAVEMENT PATCHING, WIDENING, AND JOINT REPAIR

PART 1 GENERAL

1.1 DESCRIPTION: This work consists of patching, widening and joint repair of existing asphaltic concrete pavements in accordance with these specifications and in conformity with the lines, grades and typical sections shown on the plans or as directed. Asphaltic concrete shall be used for patching, widening, and joint repair.

1.2 MATERIALS: Asphaltic concrete for patching and widening may be any type mixtures listed in Section 502 of the 2006 Edition of the Louisiana Standard Specifications for Road and Bridges, except that 1/2 inch (12.5 mm) nominal maximum size mixtures shall not be used. Asphaltic concrete for joint repair shall be Superpave Asphaltic Concrete (Level A) complying with Section 502 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Asphalt tack coat shall comply with Section 504 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

1.3 EQUIPMENT: Equipment furnished shall meet the specification requirements for the types of material used.

1.4 GENERAL CONSTRUCTION REQUIREMENTS: The contractor shall remove existing surfacing and base materials and perform all required excavation for patching and widening. When through traffic is maintained, the contractor shall complete the replacement of pavement, place the widening material, or fill and compact open areas or trenches at the end of each day's operations.

Excavation and compaction of the subgrade shall be in accordance with the plans or as directed. The subgrade shall be compacted uniformly.

Existing surfacing and excess excavation shall be disposed of beyond the right-of-way in accordance with Section 202 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

For joint repair, contact surfaces of existing pavement shall be cleaned and a thin, uniform asphalt tack coat applied prior to placing asphaltic mixture in the joint.

Patching and widening with asphaltic concrete shall conform to Section 502 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges, except that priming of the subgrade will not be required. Contact surfaces of pavement shall be cleaned and a uniform coat of asphalt tack coat applied before placement of asphaltic concrete. Patches shall not be overlayed for a minimum of 5 calendar days.

Spreading, finishing and compaction of asphaltic concrete shall leave the surface smooth and level with, or slightly above, the edge of existing pavement. To provide lateral support, the contractor will be permitted to construct temporary berms of excavated material against the outside edge of widening strips prior to rolling.

1.5 MEASUREMENT:

(a) Patching: Patching of pavement will be measured by the square yard (sq m) of existing pavement designated to be removed and replaced. Removal of existing surfacing and base course, tack coat, and required excavation will not be measured for payment.

(b) Widening: The quantities of widening for payment will be the design areas 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. Design quantities are based on the horizontal dimensions shown on the plans. Required excavation, removal of existing pavement and base course, asphaltic tack coat and disposal of removed material will not be measured for payment. No measurement for payment will be made for widening placed outside the dimensions shown on the plans or established by the engineer.

(c) Joint Repair: Joint repair will be measured by the ton (Mg) of asphaltic concrete used to fill the joint. Measurement will be made in accordance with Subsection 502.15.

PART 2 PAYMENT

2.1 (a) Patching: Payment for pavement patching will be made at the contract unit prices per square yard (sq m), subject to the following provisions:

Payment adjustments for deficiencies in asphaltic concrete and asphalt materials will be applied to 1/2 the contract unit price for pavement patching.

When the engineer orders additional thickness of patching in excess of plan thickness, payment for the additional thickness will be made as follows. The value per inch (mm) thickness will be determined by dividing the contract unit price per square yard (sq m) by the plan thickness. Thickness of patches will be measured from the surface that exists at the time of patching. Payment for the additional thickness will be made at 50 percent of the value per inch (mm) thus determined.

When the engineer approves of an underthickness of patching less than plan thickness, a deduction in payment will be made. This deduction per inch (mm) of underthickness will be made at 50 percent of the value per inch (mm). The value per inch (mm) will be calculated by dividing the contract unit price per square yard (sq m) by the plan thickness.

Any patching that develops or is required between the time of initial patching operations and the placement of the first lift of asphaltic concrete will be paid for at the contract unit price. Any patching required due to base failure after placement of the first lift of asphaltic concrete will be paid for at twice the contract unit price.

Asphaltic concrete will be subject to the payment adjustment provisions of Section 502 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

(b) Widening: Payment for pavement widening will be made at the contract unit prices per square yard (sq m). Overwidths will be accepted at no additional pay. Underwidth shall be corrected by furnishing and placing additional asphaltic concrete to a minimum width of 1 foot (0.3 m) and plan thickness at no direct pay.

(c) Joint Repair: Payment for pavement joint repair will be made at the contract unit price per ton (Mg), subject to the following provisions:
Asphaltic concrete for joint repair will be subject to the payment adjustment provisions of Section 502 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges except for surface tolerance and density; however, payment adjustments will be applied to 1/3 the contract unit price for joint repair. The Materials and Testing Section will provide the payment adjustment percentage for properties of asphalt material.

Payment will be made under:

Item No.	Pay Item	Pay Unit
2.1 (a)	Pavement Patching	Square Yard (Sq m)
2.1 (b)	Pavement Widening	Square Yard (Sq m)
2.1 (c)	Pavement Joint Repair	Ton (Mg)

PAINTED PAVEMENT MARKINGS

PART 1 GENERAL

Furnish and apply reflective white or yellow paint for pavement striping in accordance with plan details, the MUTCD, and these specifications.

PART 2 MATERIALS

Traffic paint shall be waterborne and comply with 1015.12 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Glass beads for drop-on application shall comply with 1015.13 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

PART 3 EQUIPMENT

Selection of proper equipment to produce satisfactory results shall be the responsibility of the contractor.

PART 4 CONSTRUCTION REQUIREMENTS

Pavement striping shall be 4 inches in width on all routes. Striping widths for gore markings and turning lanes shall be 8 inches unless noted otherwise on the plans. All lines shall have clean edges. Paint for curbs and islands may be applied by machine or hand methods as accepted by the engineer. Apply all striping on pavement prior to opening to traffic, except when rain or other unavoidable occurrences prevent marking the pavement, in which case mark the pavement as soon as conditions permit. The requirements of 713.07 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges shall govern over the above mentioned application requirements.

4.1 Surface Preparation

Clean surfaces, including ramps and gore areas, to be striped of materials that may reduce adhesion of paint to pavement. Remove all flaking or peeling material to the satisfaction of the engineer 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 at the time of paint application.

4.2 Weather Limitations

Do not paint striping when pavement surface is wet or damp, when air is foggy or misty, when air or surface temperature is below 50°F, or when wind or other conditions create a dust film on

the clean pavement surface before striping can be applied or causes displacement of striping material.

4.3 Application

Use the longitudinal joint or existing centerline stripe to determine the location of the centerline of new striping. In the absence of a longitudinal joint or existing stripe, locate the centerline of new striping with the acceptance of the engineer.

4.4 Application Rate

Apply paint at a thickness of 22 wet mils to produce a line of 15 dry mils. Apply temporary paint at a thickness of 15 wet mils. Glass beads shall be uniformly distributed to ensure that the full width of the line is visible at night.

4.5 Tolerances

Construct broken lines with a stripe-to-gap ratio of a 10-foot paint stripe to a 30-foot gap. The length of the stripe shall be 10 feet minimum and 101/2 feet maximum. The stripe-gap cycle shall be 40 feet minimum and 40 ½ feet maximum. A tolerance of +1/2 inch and -1/8 inch from the specified painted line width will be allowed, provided the variation is gradual. Segments of broken line may vary ± 6 inches from the specified length provided it is not consistently short. Square off painted line segments at each end without mist or drip. Longitudinal painted lines shall not deviate from established alignment by more than 1 inch. The rate of deviation shall not increase or decrease more than 1/2 inch in 25 feet. Remove lines not meeting these tolerances by abrasive blasting or grinding and replace at no cost to the Department. The Project Engineer may waive the tolerance when deviations are caused by undulation in the pavement surface.

4.6 Protection of Markings

Do not allow traffic to cross over a wet stripe. Use flaggers or other methods to prevent traffic from crossing the wet stripe or adjust the operation. Repair stripes that have been marred or picked up by traffic before they have dried; clean the pavement outside the stripe at no cost to the Department. The contractor shall be responsible for resolving all issues related to paint on private vehicles at no cost to the Department.

4.7 Field Testing of Painted Traffic Striping

Field-test the pavement markings in accordance with 1015.12 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges and Table 32 17 23.13-1. Replace the portion of the material shown to be out of specifications as directed by the engineer.

Take initial readings within 30 days of application. Any late readings submitted after the 30 days will be considered initial readings. Take the initial retroreflectivity readings with a DOTD inspector present during testing. Upon completion of the testing, the DOTD inspector will immediately take possession of a copy of the retroreflectivity readings in either a hard copy, 8

1/2 inch x 11 inch, or electronic format on a USB drive and 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.

For each material type, take a different set of readings in accordance with Table 32 17 23.13-1. 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 milepoint to ending mile-point of material installed.
5. State Route: Specify the route and direction. Also specify X number mile from intersection to X number mile from intersection, of material installed. (e.g. 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.

Table 32 17 23.13-1
Field Testing of Painted Pavement Markings

Length of Roadway (Segment)	Minimum Required Readings
Less than 1 mi	10 evenly spaced readings per line [a, c]
1 to 6 mi	10 evenly spaced readings per line for each 1 mi segment [a, c]
>6 mi	5 evenly spaced readings per line for each 1 mi segment [b, c]
Stop Bars, Cross Walks, Chevrons, Hash Marks, 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 deemed necessary 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. If using a vehicle mounted mobile unit this does not apply.
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 32 17 23.13-2.
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. Glass beads shall be uniformly distributed to ensure that the full width of the line is visible at night.

PART 5 GUARANTEE

All work performed in accordance with this section shall be guaranteed in accordance with 104.05.

PART 6 MEASUREMENT

6.1 Painted Traffic Striping

Painted traffic striping will be measured by the linear foot or mile, as specified. When a bid item is not included 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.

1. Linear Foot: Measurement will be made by the linear foot of striping, exclusive of gaps.

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.

6.2 Pavement Legends and Symbols

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.

PART 7 PAYMENT

Payment for painted traffic striping, legends, and symbols will be made at the contract unit prices.

Table 32 17 23.13-2
Payment Adjustment for Initial Retroreflectivity

Contract Unit Price [1], %	Retroreflectivity Number (Painted Markings)	
	White (mcd/lux/sq m)	Yellow (mcd/lux/sq m)
100	250	175
90	230	165
80	220	155
50 or Restripe	200	150

[1] The payment requirements are based on the project total average of all test segments for initial reading in accordance with Table 32 17 23-1.

Payment will be made under:

Item No.	Pay Item	Pay Unit
32 17 23-01	Painted Traffic Striping (Solid Line)	Mile
32 17 23-02	Painted Traffic Striping (Broken Line)	Mile
32 17 23-03	Painted Traffic Striping (Solid Line)	Linear Foot
32 17 23-04	Pavement Legends and Symbols	Each

DIVISION 34

TRANSPORTATION

TEMPORARY TRAFFIC CONTROL

PART 1 GENERAL

1.1 DESCRIPTION

This work consists of furnishing, installing, maintaining, and removing temporary construction barricades, precast concrete barriers, lights, signals, pavement markings and signs; providing flaggers; and complying 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 includes traffic control management in compliance with the contract documents and the Manual on Uniform Traffic Control Devices (MUTCD), including the installation, inspection, maintenance, and removal of all traffic control devices on the project. Signs, barricades, barriers, channelizing devices, pavement markings, etc., shall comply with plan details, the MUTCD and these specifications.

Signs, barricades, barriers, channelizing devices, pavement markings and arrangements thereof, as shown on the plans, are minimum requirements. Appropriate signs for special conditions shall be furnished and installed 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.

The contractor shall assign one or more authorized Traffic Control Supervisors (TCS) to provide traffic control management for the project. If more than one TCS is assigned, then a weekly schedule identifying who will be in charge of providing traffic control management on a daily basis shall be submitted to the engineer. The TCS shall have a set of all contract documents relating to traffic control or traffic staging and a current copy of the MUTCD and a current copy of Louisiana Work Zone Traffic Control Details readily available at all times.

If the contractor utilizes a subcontractor to provide 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.

1.2 MATERIALS

Materials for temporary signs, barricades, barriers and related devices shall comply

with the following Sections and Subsections of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges:

Portland Cement Concrete	901
Reinforcing Steel	1009
Backing Material	1015.04(b)
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	1018.12

(a) Temporary Pavement Markings: Temporary pavement markings shall be a minimum of 4 inches (100 mm) wide.

(b) Reflective Sheeting: Reflective sheeting requirements for temporary signs, barricades, channelizing devices, drums and cones shall comply with the following:

(1) Temporary Signs and Barricades: On the mainline of freeways and expressways, the initial advanced warning construction sign shall be fabricated using ASTM D 4956 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.

(2) Vertical Panels: Reflective sheeting for vertical panels used to channelize or divide traffic shall meet the requirements of ASTM D 4956, Type III.

(3) Drums: Reflective sheeting for drums shall be a minimum of 6 inches (150 mm) wide and shall meet the requirements of ASTM D 4956, Type III, and the Supplementary Requirement S2 for Reboundable Sheeting as specified in Subsection 1015.05.

(4) Cone Collars: Reflective sheeting for traffic cone collars shall meet the requirements of ASTM D 4956, Type VI.

1.3 FABRICATION

Fabrication of temporary signs, barricades and related devices shall conform to Subsection 729.04 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Fabrication of precast concrete barriers shall conform to Section 805 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

1.4 TEMPORARY SIGNS, BANNERS, AND BARRICADES

(a) General: Temporary signs, barricades and related devices will be required when the contractor's work is in progress 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, appropriate existing regulatory signs shall be maintained by the contractor.

Construction work shall not begin until signs, barricades and other traffic control devices have been erected and approved.

When signs to be furnished and erected by the contractor are in place and approved, the contractor's Traffic Control Supervisor (TCS) shall remove or cover any standard signs that are in conflict with temporary signs.

When placing signs, the contractor shall 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 previously used signs are to be erected on a project, the engineer will inspect and approve these signs before erection. The engineer will require any sign with reduced reflectivity or excessive color fading to be removed from the work zone. In case of a dispute over a rejected used sign, the Department at its discretion, may take such measurements or review reflectivity and color data obtained by the contractor to determine if the sign meets minimum standards for new materials. Signs that do not meet the minimum standards for new materials shall be replaced by the contractor at no direct pay.

Rejected signs will be marked "NOT FOR USE ON STATE PROJECTS" on the back of the sign.

Signs placed by the contractor shall be removed according to the Traffic Control Plan. It will be the responsibility of the Department to see that all permanent highway signs are in place upon completion and acceptance of the project.

On projects where the surface course is constructed with asphaltic concrete or portland cement concrete, permanent striping and raised pavement markers (when required) shall be completed prior to removal of barricades.

Signs, barricades and related devices furnished and placed by the contractor shall, upon removal, remain the contractor's property.

(b) Advance Warning Area: When specified, advance warning arrow panels for temporary traffic control shall be provided at locations shown on the plans or as directed. Panels shall be one of the specified types complying with the Department's MUTCD. If no type is specified, Type C panels shall be

furnished.

(c) Construction Zone: In areas of the construction zone all traffic control devices used shall be in accordance with Temporary Traffic Control Standard Detail TC-00.

(d) Construction Zone: In areas of the construction zone all traffic control devices used shall be in accordance with Temporary Traffic Control Standard Detail TC-00.

1.5 TEMPORARY PRECAST CONCRETE BARRIERS

Barrier units will be furnished by the contractor unless specified otherwise. Each barrier unit shall be 15-feet (4.6 m) 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.

Connecting pins and plastic reflectors shall be furnished by the contractor at no additional cost to the Department. Reflectors shall have 7.0 square inches (4,500 sq mm) minimum reflective area, and be installed a maximum of 15 feet (4.6 m) apart (each side) in accordance with the manufacturer's recommendations. Damaged pins or reflectors shall be replaced as directed by the engineer.

After completion of the work, barrier units shall become the property of the Department and shall be removed and 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 price bid on this item.

Barrier units damaged shall be satisfactorily repaired or replaced at no direct pay.

1.6 PAVEMENT MARKINGS

Color, width and type of temporary pavement markings shall be in accordance with Table 1 and the MUTCD. Temporary pavement markings shall be in place at the end of each day's operation.

Temporary striping tape shall be applied by approved methods to the satisfaction of the engineer. Thermoplastic Pavement Markings shall be applied in accordance with Subsection 732.03 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges. Painted Traffic Striping shall be applied in accordance with

Section 737 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Temporary Pavement Markings [1, 2]
Table 1

		Two-lane Highways	Undivided Multilane Highways	Divided Multilane Highways
SHORT TERM	ADT<1500; or ADT>1500 and time<3 days	Lane lines 4-foot (1.2m) tape on 40-foot (12m) centers; with "Do Not Pass" and "Pass With Care" signs as required		
	ADT>1500; Time>3 days and <2 weeks	Lane lines 4-foot (1.2m) tape on 40-foot (12m) centers with no passing zone markings		
	All ADT's with time <2 weeks		Lane lines 4-foot (1.2m) tape on 40-foot (12m) centers; double yellow centerline	Lane lines 4-foot (1.2m) tape on 40-foot (12m) centers
	All ADT's with time >2 weeks	Standard lane lines, no-passing zone markings, legends and symbols when pavement width is 22 feet (6.7 m) or greater, edge lines	Standard lane lines, centerlines, edge lines, and legends and symbols	Standard lane lines, centerlines, edge lines, and legends and symbols

[1]No-passing zones shall be delineated as indicated whenever a project is open to traffic.

[2]On all Asphaltic Surface Treatments that are open to traffic and used as a final wearing course or as an interlayer, temporary pavement markings (tabs) on 20-foot (6 m) centers shall be used, in lieu of the 4-foot (1.2 m) tape, on 40-foot (12 m) centers.

(a) Short-term Pavement Markings: Short-term pavement markings will be required on any pavement surface under traffic.

Centerlines on two-lane highways and lane lines on multilane highways shall be temporary striping tape a minimum of 4 feet (1.2 m) long on a maximum of 40-foot (12 m) centers. When short-term pavement markings require no-passing zone markings or double yellow centerlines on undivided multilane highways, they shall be any of the temporary pavement markings listed in Subsection 1.

Removal of short-term pavement markings will only be required on the final surface.

(b) Long-term Pavement Markings: Long-term pavement markings will be required on any surface which is not covered by an additional surface in 2 weeks or less. Long-term pavement markings shall include, but are not limited to, standard lane and centerline markings (i.e., IO-foot (3 m) stripes on a

maximum of 40-foot (12 m) centers), edgelines, no passing zone markings on 2-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 surface.

These markings shall consist of any of the pavement markings listed in Subsection 1.2.

Long-term markings do not include the installation of raised pavement markings.

(c) Final Surface: On the final surface (portland cement concrete pavement or asphaltic concrete pavement), temporary markings shall be placed with sufficient accuracy to avoid conflict with permanent striping where possible. Temporary pavement markings on the final surface shall be any of the pavement markings listed in Subsection 1.2.

Placing permanent markings over traffic paint will be acceptable on final surfaces provided the temporary markings have been placed in the final configuration (proper final layout) and the painted lines are not flaking or showing signs of deterioration.

The removal of temporary pavement markings, if required, shall be in accordance with the requirements for the type of permanent marking being used. There shall be no objectionable staining of pavement surface as a result of the removal procedure.

(d) Temporary Reflectorized Raised Pavement Markings: When required, temporary reflectorized raised pavement markings shall be installed in accordance with Section 731 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

(e) Pavement Markings for Asphaltic Surface Treatment: The type of markings shall be in accordance with Table 1. Short-term temporary pavement markings shall be in place at the end of each day's operation. Long-term temporary pavement markings shall be in place as soon as practical after expiration of the 4 day maintenance period following the asphaltic surface treatment operation. On the final wearing course, permanent markings shall be placed 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 of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Centerlines on two-lane highways and lane lines on multilane highways shall be temporary raised markers in accordance with Subsection 1015.08(c) of the 2006

Edition of the Louisiana Standard Specifications for Roads and Bridges. "No-passing zone" markings shall be any of the temporary pavement markings listed in Subsection 1.2.

The temporary raised pavement markers shall be installed in accordance with the manufacturers' recommendations or as directed by the engineer. The temporary raised markers shall be flexible reflective tabs placed at 20-foot (6m) intervals on the centerline of the roadway. The markers shall be installed so that the reflective faces of the markers are perpendicular to a line parallel to the roadway centerline.

If directed by the engineer, the temporary raised pavement markers shall be removed after permanent striping has been accomplished. Damage to the pavement surface shall be repaired at no direct pay.

1.7 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).

(a) Category I Devices: Category I devices are low-mass, single- piece traffic cones, tubular markers, single-piece drums and flexible delineators and are, by definition, considered crashworthy devices meeting NCHRP Report 350 TL-3 criteria. Drum and light combinations with Type A or C warning lights and fastener hardware consisting of vandal resistant 1/2 inch (13 mm) diameter cadmium plated steel bolts and nuts used with 1 1/2 inch (38 mm) diameter by 3/4 inch (19 mm) cup washers are included as Category I devices. In lieu of testing for crashworthiness, acceptance of Category I devices for compliance with NCHRP 350 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. This certification may be a one-page affidavit signed by the supplier, with supporting documentation kept on file to be furnished if requested.

(b) Category II Devices: Category II devices include other low mass traffic control devices such as portable barricades either with or without lights and or signs, portable sign stands, 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 TL-3. The contractor shall provide 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. The contractor shall also certify that each device has been crash tested and meets the NCHRP 350 requirements.

(c) Category Ill Devices: Category III devices include massive devices such as concrete barriers, water filled barriers and portable 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 TL-3. The contractor shall provide 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. The contractor shall also certify that each device has been crash tested and meets the NCHRP 350 requirements.

1.8 TRAFFIC CONTROL MANAGEMENT

(a) Authorization: Prior to commencing work requiring traffic control management, the contractor shall submit to the engineer proof of the Traffic Control Supervisor's (TCS) and Traffic Control Technician's (TCT) current authorizations.

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.

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.

(b) Traffic Control Supervisor (TCS) Duties:

The TCS's responsibility shall be traffic control management, and 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) The TCS shall 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 shall be required on site during working hours.

(2) The TCS shall be responsible for observing and evaluating both the day and night time performance of all traffic control devices installed on the project, in accordance with the Traffic Control Plan (TCP), to ensure that the devices are performing effectively as planned for both safety and traffic operations. This shall be done upon the initial installation of the devices and when any modifications and/or changes are made, in addition to the inspection of traffic control required in Heading (e).

(3) The TCS shall be responsible for revisions requested by the contractor to the traffic control plan established in the contract and shall submit the new traffic control plan in accordance with Heading (c).

(4) The TCS shall 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.

(5) The TCS shall 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) The TCS shall 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. The TCS shall also invite the above agencies to the pre-construction conference.

(7) The TCS shall 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. News releases shall be submitted to the engineer for review and approval prior to the contractor's submittal to the news media.

(8) The TCS shall be responsible for notifying the engineer, or designee, immediately of all vehicular accidents and/or incidents related to the project traffic control. The time and date of notification shall be documented in the traffic control diary. The TCS shall also monitor and document queues that occur as necessary.

(9) The TCS assigned to the project shall attend the pre-construction conference and all project meetings.

(10) The TCS shall be responsible for the maintenance, cleanliness, replacement and removal of traffic control devices of the existing traffic control plan during working and non-working hours.

(c) Traffic Control Plan Revisions: Requests for revision in the traffic control plan must be made 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. The change order drawings shall conform to the following:

(1) Letter size original contract drawings -- the change order drawings shall be submitted 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 -- the change order drawings shall be submitted 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. The contractor shall 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 be in accordance with Subsection 801.03(a) of the 2006 Edition of the Louisiana Standard Specifications for Roads and Bridges.

Lettering on change order drawings shall be of adequate size to facilitate a 50 percent reduction of plans. Additions or changes shall be made with a permanent type of waterproof ink made for this purpose. If revised cross sections are required, the cross-sections shall be plotted on standard plate cross-section sheets. The ground line, centerline elevation, and station numbers, as a minimum, shall be drawn in ink; the remaining information may be in pencil.

Regardless of size, all change order drawings and documents required shall be identified with the DOTD project title and project number. All plans and calculations shall be signed and sealed by a professional civil engineer currently registered to practice in Louisiana.

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.

(d) Traffic Control Diary: The TCS shall maintain a project traffic control diary in a bound book. The contractor shall obtain a sufficient number of the diaries from the Louisiana Associated General Contractors (LAGC). The TCS shall keep the traffic control diary current on a daily basis, and shall sign each daily entry. Entries shall be made in ink in a standard format furnished by the engineer, and there shall be no erasures or white-outs. Incorrect entries shall be struck out and then replaced with the correct entry. Photographs and videotapes may be used to supplement the written text.

The traffic control diary shall be available at all times for inspection by the engineer; and the diary shall be reviewed with the engineer on a weekly basis and a copy submitted to the engineer on a monthly basis. 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 copies of the diary are submitted. The traffic control diary shall become the property of the Department at the completion of the project.

(e) 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. The "Quality Guidelines for Work Zone Traffic Control Devices" standard by the American Traffic Safety Services Association (ATSSA) shall be used to evaluate the condition of the traffic control devices to determine if acceptable for use. The TCS shall 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.

Inspection of the traffic control devices shall be conducted by the TCS at the beginning and end of each workday, and as scheduled or directed by the engineer during the workday. The traffic control devices shall be inspected by the TCS on weekends, holidays, or other non-workdays at least once per day. Traffic control devices shall be inspected 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.

(f) Failure to Comply: The engineer 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.

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 shall 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, the contractor shall continue to provide traffic control management and 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 the contractor's expense.

(g) 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 shall be considered an amendment to the plans and specifications as of the date of change.

1.9 MEASUREMENT

(a) Temporary Signs and Barricades: When the contract does not include a pay item for "Temporary Signs and Barricades," the providing of temporary construction signs, barricades and related devices will not be measured for payment. When a pay item for "Temporary Signs and Barricades" is included in the contract, the furnishing, erecting, maintaining and subsequent removing of temporary construction signs, barricades and related devices will be measured on a lump sum basis.

Advance warning arrow panels will not be measured for separate payment, but will be included in the contract lump sum price for Temporary Signs and Barricades.

(b) Temporary Pavement Markings: When the contract does not include an item for "Temporary Pavement Markings," provision of these markings will not be measured for payment.

When the contract includes an item for "Temporary Pavement Markings", these markings acceptably furnished, placed, maintained and subsequently removed will be measured by the linear foot (lin m), or by the mile (km) as specified.

When measurement is made by the linear foot (lin m) of striping, measurement will be made for the material placed. Gaps will be excluded.

When measurement is made by the mile (km) 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 by counting the number of markers furnished, placed and accepted. Removal of raised pavement markers will not be measured for payment.

(c) Temporary Precast Concrete Barriers: When the contract does not include a pay item for Temporary Precast Concrete Barriers, the provision of these barriers will not be measured for payment. When the contract includes a pay item for Temporary Precast Concrete Barriers, the barriers will be measured per each unit installed, which includes construction, delivery, placement and removal from the job site one time.

Further movements of barriers for subsequent construction phases will be measured per movement of each barrier.

(d) Traffic Control Management: Traffic control management will not be measured for payment.

1.10 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 2.

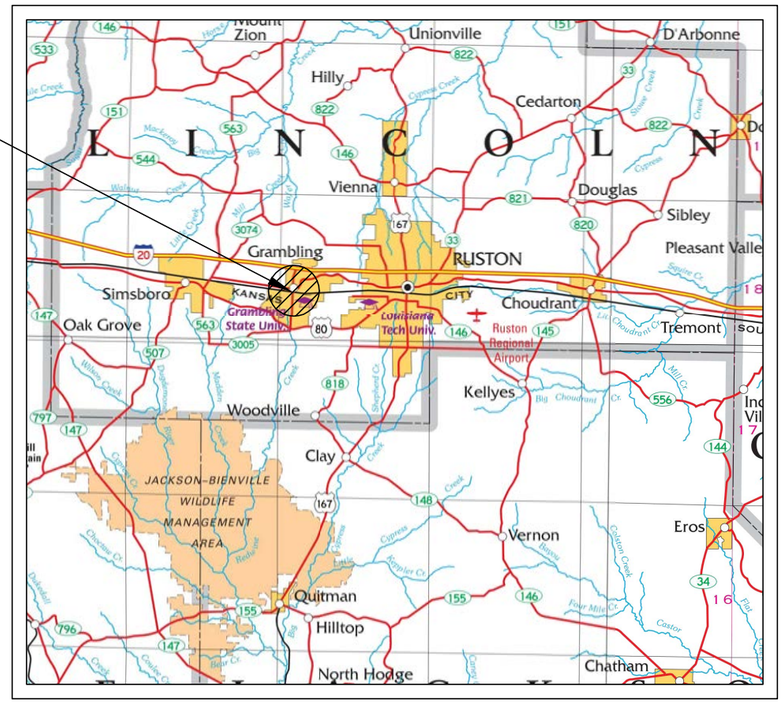
Payment Schedule
Temporary Signs, Barricades
and Related Devices
Table 2

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

APPENDIX

PLANS
FOR CONSTRUCTION OF
ROADWAY RECONSTRUCTION, COLLEGE AVENUE
FOR
GRAMBING STATE UNIVERSITY
LINCOLN PARISH, LOUISIANA

PROPOSED PROJECT LOCATION



VICINITY MAP

PROJECT CLASSIFICATION:

HIGHWAY, STREET & BRIDGE CONSTRUCTION

PLANS & SPECIFICATIONS APPROVALS:

APPROVED BY: GRAMBLING STATE UNIVERSITY

THIS _____ DAY OF _____, 2026

BY_____

MR. DAMIEN M. CHATMAN, FACILITIES DIRECTOR

PLAN INDEX

SHEET NO.	DESCRIPTION
C1	TITLE & VICINITY MAP
C2	PROJECT INDEX MAP
C3	COLLEGE AVENUE (WEST)
C4	COLLEGE AVENUE (EAST)
C5	DETAILS
C6	GENERAL NOTES
TTC-00 (A-D)	TEMPORARY TRAFFIC CONTROL

LA One Call 811

Call before you dig 1-800-272-3020

STATE OF LOUISIANA
E. HUNTER LANCASTER
REG. No. 30557
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING
3-18-26

SHULER CONSULTING COMPANY
CIVIL ENGINEERING DESIGN & CONSULTING SERVICES
230 GRANDVIEW DRIVE PHONE: (318) 249-3030
CHATHAM, LA 71226 FAX: (318) 249-3040

TITLE & VICINITY MAP

	REV. NO.	DATE
DESIGNED BY: EHL		
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: NONE		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

SHEET NO.

C1 OF 6C

CONSTRUCTION NOTES:

1. CONSTRUCTION QUANTITIES AND SURVEY DATA ARE DETAILED WITHIN THE ALIGNMENT SHEETS. THE INTENT OF THE PROJECT IS FOR THE ROAD TO BE RECONSTRUCTED TO ITS CURRENT HORIZONTAL AND VERTICAL ALIGNMENT.
2. CONTRACTOR SHALL ENSURE PROPER TEMPORARY TRAVEL LANES AS PRACTICAL DURING CONSTRUCTION. THE CONTRACTOR SHALL STRICTLY ABIDE BY SEQUENCE OF CONSTRUCTION AS PROVIDED THIS SHEET.
3. CONTRACTOR SHALL ABIDE BY STANDARD DETAILS FOR REPAIRS, OVERLAYS, DRIVEWAYS, INTERSECTIONS, ETC. AS INDICATED WITHIN SHEETS C5.
4. IN THE EVENT THAT AN APPARENT FLARE RADIUS IS NOT FOUND, THE CONTRACTOR SHALL ASSUME A MINIMUM RADIUS OF 25', UNLESS OTHERWISE SPECIFIED, AT ALL SIDE ROAD INTERSECTIONS.
5. PAVEMENT PATCHING ASPHALT SHALL BE PAID PER SYD.
6. TEMPORARY SIGNAGE SHALL BE PROVIDED BY THE CONTRACTOR AT ALL CONSTRUCTION LOCATIONS AS PER LA DOTD STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, 2006 EDITION (REF. GENERAL NOTES).
7. ALL EXCAVATED MATERIALS FROM PATCHING SECTIONS SHALL BE RE-APPLIED AS SHOULDER MATERIAL OR DISPOSED OF BY CONTRACTOR (NO SEPARATE PAYMENT).
8. ALL JOINTS TO EXISTING ROADWAYS SHALL BE CONSTRUCTED AS PER DETAILS SHEET C5.
9. THE SEQUENCE OF CONSTRUCTION PROVIDED IS FOR CONCEPTUAL PURPOSES. CONTRACTOR SHALL REFERENCE RESPECTIVE TECHNICAL SPECIFICATIONS FOR SPECIFIC PROCEDURAL REQUIREMENTS.
10. RECLAIMED ASPHALTIC PAVEMENT SHALL BE RE-UTILIZED AS SHOULDER MATERIAL. EXCESS MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR.

SEQUENCE OF CONSTRUCTION:

RECONSTRUCTION SECTIONS:
1. CONTRACTOR SHALL INSTALL ALL TEMPORARY SIGNAGE, BARRICADES, ETC. AS PER LA. DOTD'S TEMPORARY TRAFFIC CONTROL STANDARD PLANS.
2. CONTRACTOR SHALL MILL REQUIRED THICKNESS FROM EXISTING ROADWAY (IF REQUIRED). CONTRACTOR SHALL PULVERIZE REMAINING ASPHALTIC CONCRETE INTO EXISTING BASE (PAID UNDER PULVERIZED ASPHALT & RECOMPACTED BASE COURSE ITEM).
3. CONTRACTOR SHALL INSTALL SOIL CEMENT BASE TREATMENT (IF SPECIFIED).
4. CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY APPARENT BASE FAILURES OR UNSUITABLE BASE MATERIALS.
5. CONTRACTOR SHALL INSTALL BASE COURSE (IF SPECIFIED).
6. CONTRACTOR SHALL INSTALL WEARING COURSE.
7. CONTRACTOR SHALL CLEANUP AND RE-GRADE SHOULDERS.
8. CONTRACTOR SHALL APPLY PAVEMENT MARKINGS (IF SPECIFIED).
9. ALL SIGNAGE SHALL BE REMOVED AND ROADWAY SHALL BE CLEANED OF DEBRIS.

NOTES:
1. THE CONTRACTOR SHALL APPLY 8-10 GALLONS PER ACRE OF 7.5% BROMACIL TO THE GROUND SURFACE BEYOND THE EXISTING WEARING COURSE EDGE. IF VEGETATION PENETRATES THE FINAL WEARING COURSE, THE CONTRACTOR SHALL BE REQUIRED TO RE-APPLY THE SPECIFIED HERBICIDE.

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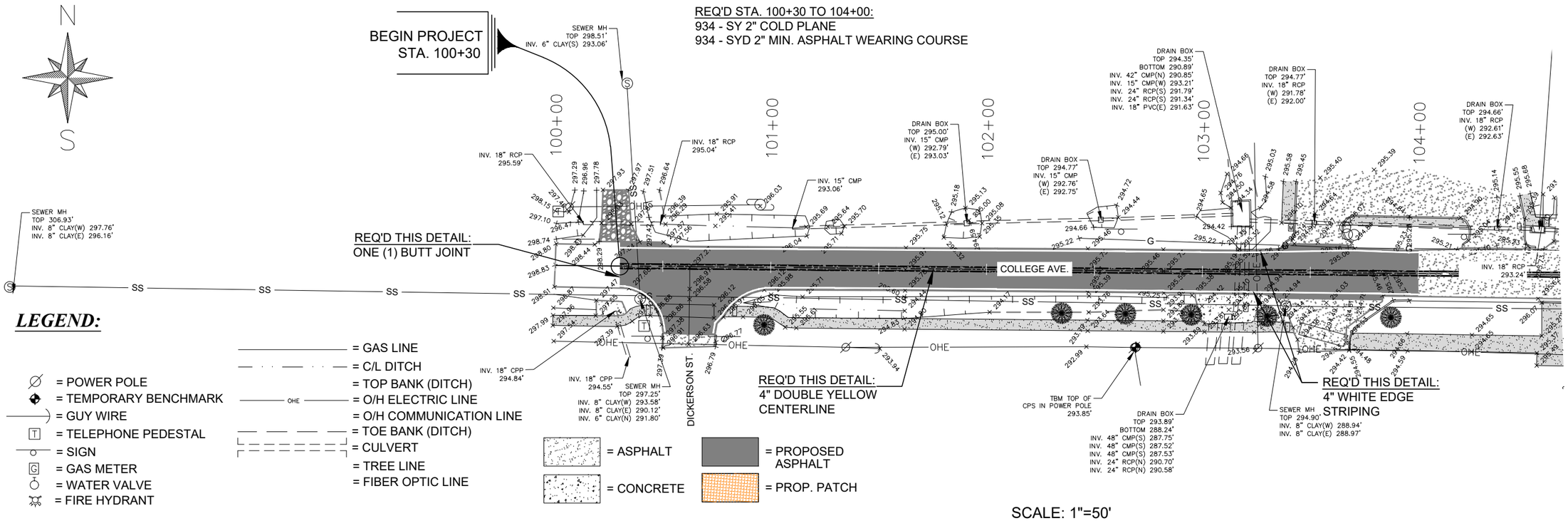
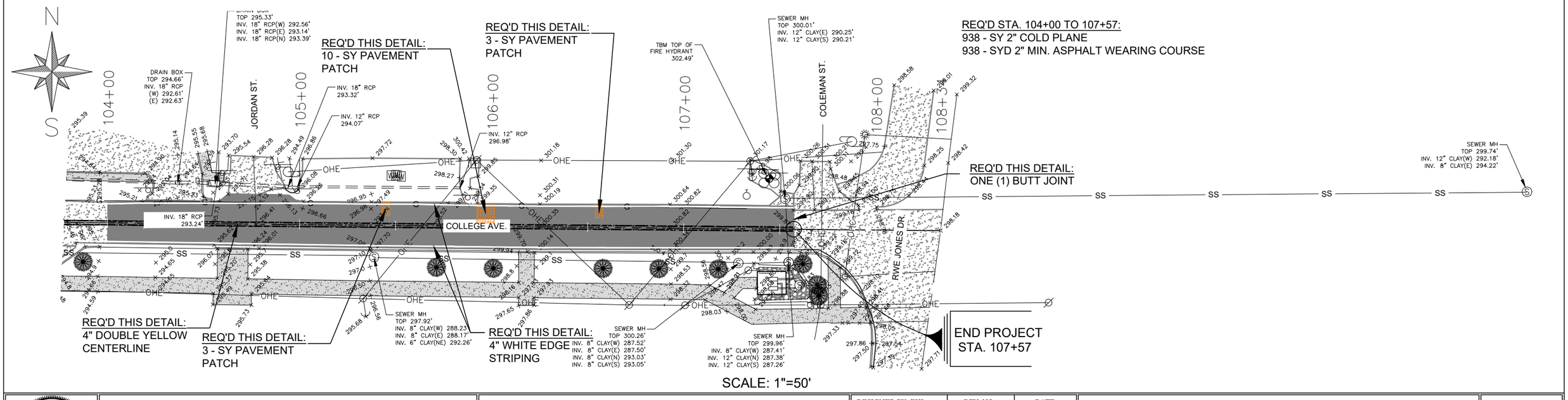
PROJECT INDEX MAP

DESIGNED BY: EHL	REV. NO.	DATE
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: NTS		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

SHEET NO.
C2 OF 6C





STATE OF LOUISIANA
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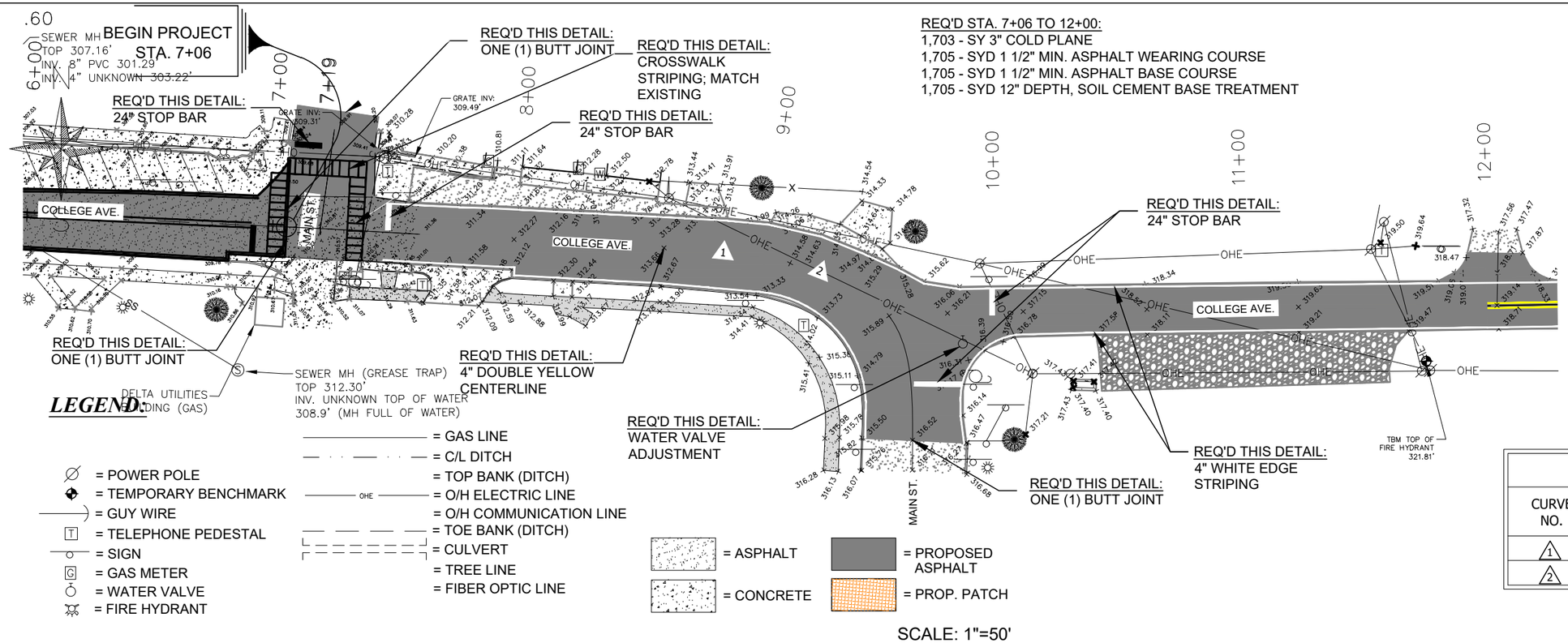
COLLEGE AVENUE (WEST) - SHEET 1 OF 1

DESIGNED BY: EHL	REV. NO.	DATE
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: 1" = 50'		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

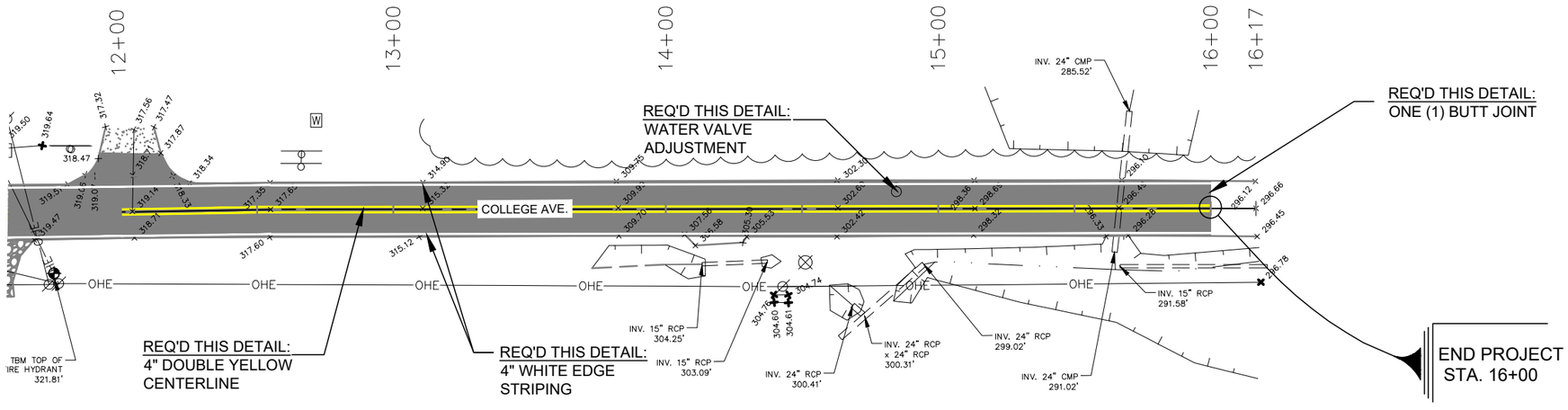
SHEET NO.
C3 OF 6C



SCALE: 1"=50'

CURVE TABLE				
CURVE NO.	RADIUS	ARC LENGTH	CHORD	
			BEARING	DISTANCE
1	463.03'	45.64'	S83°56'24"E	45.63'
2	85.89'	52.29'	S63°40'33"E	51.49'

REQ'D STA. 12+00 TO 16+00:
919 - SY 3" COLD PLANE
917 - SYD 1 1/2" MIN. ASPHALT WEARING COURSE
917 - SYD 1 1/2" MIN. ASPHALT BASE COURSE
917 - SYD 12" DEPTH, SOIL CEMENT BASE TREATMENT



SCALE: 1"=50'

STATE OF LOUISIANA
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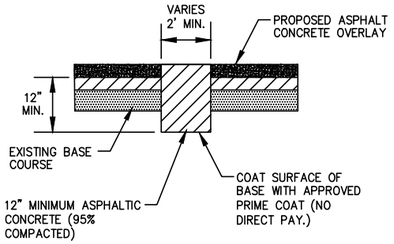
COLLEGE AVENUE (EAST) - SHEET 1 OF 1

DESIGNED BY: EHL	REV. NO.	DATE
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: 1" = 50'		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

SHEET NO.
C4 OF 6C



TYPICAL DETAIL FOR ROAD BASE FAILURE PATCH

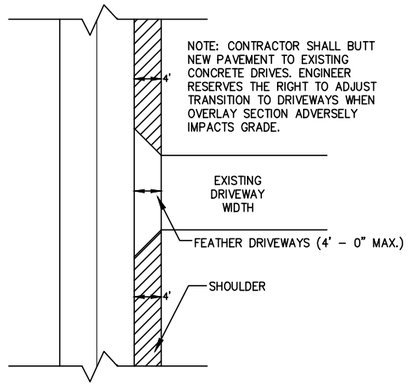
N.T.S.

TABLE OF PROPOSED RECONSTRUCTION						
ROAD NAME	ASPHALT WIDTH	ASPHALT DEPTH	SOIL CEMENT WIDTH	SOIL CEMENT DEPTH	COLD PLANE DEPTH	STRIPING
COLLEGE AVENUE (WEST)	20'	2"	--	--	2"	CL, EDGE
COLLEGE AVENUE (EAST)	20'	3"	20'	12"	3"	CL, EDGE

* NOTE: COLLEGE (WEST) IS A COLD PLANE & OVERLAY SECTION.
COLLEGE (EAST) IS A COLD PLANE, SOIL CEMENT, & ASPHALT SECTION.

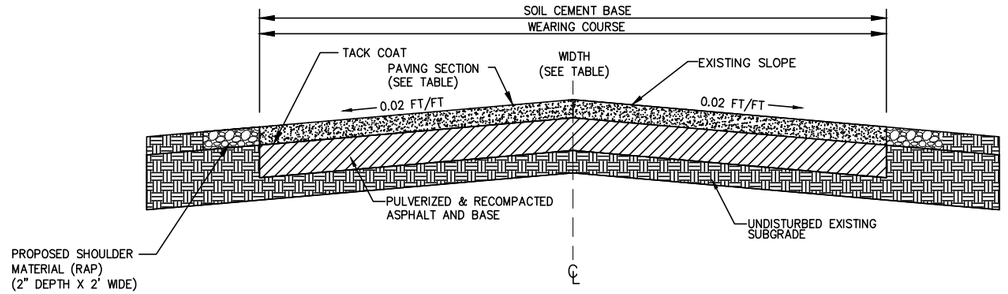
NOTES:

1. CONTRACTOR SHALL PULVERIZE EXISTING PAVEMENT STRUCTURE INTO EXISTING BASE (WHERE INDICATED) AND COMPACT TO 95% STANDARD PROCTOR.
2. PAVEMENT CROWN SHALL SLOPE RIGHT TO LEFT FROM CENTERLINE OF STREET. NO OFFSET IN CROSS SLOPE FROM CENTERLINE WILL BE PERMITTED.
3. CONTRACTOR SHALL MATCH EXISTING SUPERELEVATIONS IN CURVES.
4. ALL ASPHALTIC CONCRETE SURFACING SHALL BE LEVEL 1 SUPERPAVE AS PER LA. DOTD STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, 2006 EDITION.
5. SOIL CEMENT SHALL BE APPLIED 7% BY VOLUME.



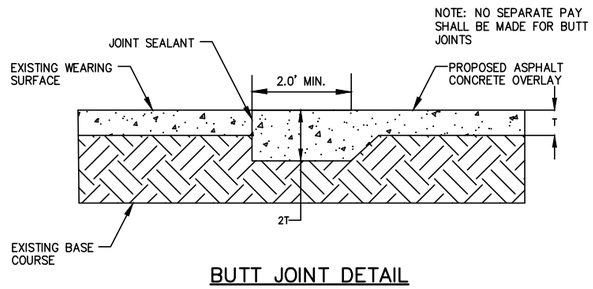
TYPICAL DRIVEWAY

N.T.S.



TYPICAL ROAD RECONSTRUCTION

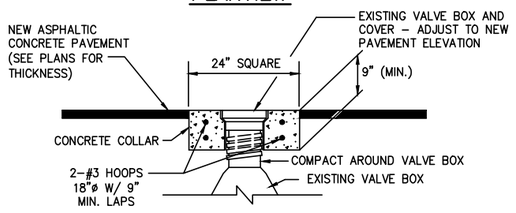
N.T.S.



BUTT JOINT DETAIL

N.T.S.

PLANVIEW



TYPICAL WATER VALVE ADJUSTMENT

STATE OF LOUISIANA
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DETAILS

DESIGNED BY: EHL	REV. NO.	DATE
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: 1" = 50'		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

SHEET NO.
C5 OF 6C

GENERAL NOTES:

1. The Engineer does not warrant the plans to be complete or accurate with respect to the location of existing underground utilities. Locations of existing utilities on these drawings are approximate based on information furnished by the Owner, utility representative, and by site visit. Existing underground utilities and telephone cables indicated herein for the convenience of the Contractor have not been field located. The Contractor shall be responsible for field locations of existing utilities as necessary during the layout and construction phase of the project. The Contractor shall contact DOTTIE and coordinate with all existing utility representatives when working in the area of any of their lines. It is the Contractor's responsibility to verify existing utility locations ahead of construction to avoid damage or disruption. The Contractor shall be responsible for all costs incurred due to the damage. No additional compensation will be considered for any required relocation, temporary support, protection or other costs involved with or about these utilities.

2. N.I.C.–When used on the drawings, means Not In Contract.
   N.S.P. – No Separate Pay.
   U.O.S. – Unless otherwise specified on the plans proposal forms and/or spec. provisions.

3. The Contractor shall notify all owners of livestock which may be affected by the temporary removal of fences, gates, and cattle guards. The Contractor shall maintain temporary fence and gate openings. Fences, gates, and cattle guards disturbed by the Contractor shall be repaired to the condition existing prior to construction immediately after completing the line installation for which the fence was disturbed.

4. The Contractor shall maintain drainage through all drainage structures, culverts, ditches, water courses, etc. affected by the installation of the work. The Contractor shall restore all such drainage structures, culverts, ditches, etc. to their original condition at no separate pay.

5. The Contractor shall restore to their original condition any signs, mail boxes, culverts, Posted or No Trespassing signs, etc. disturbed by him.

6. The Contractor shall adequately brace all power poles, service poles, etc. in the vicinity of the construction.

7. The Contractor shall provide all temporary utilities such as electricity and water necessary to test and complete his various items.

   The Owner will pay for any permanent utility meter deposits; however, the Contractor shall be responsible for any utility bills incurred until the facility is turned over to the Owner for use.

8. The Contractor shall not stockpile excavated materials on any portion of the roadway surface. If necessary, the Contractor will haul off the excavated materials and haul it back in to backfill. No separate pay will be allowed for hauling off the excavated material and hauling it back in when backfilling. The cost of the haul off and haul in shall be included in the price bid for the applicable item of work.

9. All unusable materials resulting from the work shall become the property of the Contractor and shall be removed from the job site and disposed of as approved by the State of Louisiana. Compensation for this work shall be included in various unit prices or lump sum items of the Bid Schedule.

10. The Contractor shall coordinate his construction schedule with the Owner's representative, that an inspector will be on the job at critical times during construction.

11. The Contractor shall provide for and maintain local traffic at all times during construction. He shall erect all necessary temporary barricades, warning signs, lights, and flag men needed during construction. All temporary signage shall be in accordance with MUTCD (latest edition) and the La. DOTD Specifications for Roads and Bridges (2006 edition). La. DOTD standard plans TTC–00 (A–D) are provided for reference.

12. Water for construction or testing purposes to be negotiated with the closest water system at specifically designated locations in limited quantities at a negotiated charge. The Contractor shall make his arrangements with the water systems. All other utility requirements shall be furnished by the Contractor at his expense. The Contractor shall provide the means and equipment as approved by the Engineer, to obtain and measure the water used.

13. The Contractor alone shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

14. SITE MAINTENANCE: The contractor shall keep the site clean of debris. Materials shall be stored and protected against the damage.

15. RIGHT–OF WAY: The right–of–way herein referred to is understood to mean only the permission to use and pass through the location, street or highway or through any public or private property. The Contractor is responsible for relocation of any wires, lamps, or other overhead, surface or underground obstruction which may interfere with the operation or movement of the Contractor's equipment. The Contractor is advised that private right–of–way along the highways and roads will be obtained by the Owner when possible. Where right–of–way cannot be obtained, the Contractor shall install utility mains in the highway right–of–way. No additional compensation will be paid the Contractor for moving from private to highway right–of–way or from highway to private right–of–way.

16. CLEARING AND GRUBBING: The Contractor shall clear and grub as required for the construction of required facilities but shall not clear or grub beyond site, easement, or right–of–way boundaries. No special payment shall be made for clearing and grubbing on highway or private right–of–way. The cost for any necessary clearing and grubbing shall be included in the price bid for furnishing and installing the improvements.

17. CONCRETE: All structural and paving concrete shall be Class A, 3500 psi average compression strength at 28 days.

18. MOBILIZATION: This work consists of preparatory work and operations, including those necessary for movement of personnel, equipment, supplies, buildings, and other facilities necessary for work on the project; the cost of bonds and required insurance; and other pre–construction expenses necessary for start of the work, excluding the cost of construction materials.

    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 following schedule up to a maximum of 10 percent of the original total contract amount, including this item, and payment of any remaining amount will be made upon completion of all work under the contract.

Percent of Total Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
1st Partial Estimate	25 (limited to 10% of original total contract amount)
10	50 (limited to 10% of original total contract amount)
25	75 (limited to 10% of original total contract amount)
50	100 (limited to 10% of original total contract amount)
100 (final estimate)	100 (limited to 10% of original total contract amount)

    No price adjustment will be made for this item due to changes in the work, and any increased mobilization cost incurred by the Contractor due to additional work occasioned by such changes will be considered incidental to the additional work.

    If the contract is canceled by the Owner, the Contractor will be paid for the actual cost incurred for mobilization at the time of cancellation, which cost will not exceed the total bid under the mobilization item.

19. RECORD DRAWINGS: The Contractor must maintain, on the job site, a complete set of plans and specifications corrected to the actual location, sizes, depth, etc. of all facilities constructed. This information shall be provided to the Engineer as Record Drawings before acceptance of the project work. If provided by Engineer, a CD file of the construction plans shall be modified to reflect as–built conditions in compliance with final acceptance requirements.

20. START–UP AND OPERATION: The Contractor shall be required to demonstrate that all components installed operate and function satisfactorily. Personnel for start–up shall be furnished by the Contractor for sufficient time to verify the operational acceptability.
    Personnel from the Owner and the Engineer may be present for familiarization. Start–up will be a prerequisite to substantial completion.

21. UTILITY NOTIFICATION: Before beginning construction, contractor shall contact LA. One Call (800–272–3020) to advise all local utilities.

    The Contractor shall also be required to notify the customers at least 24 hours prior to disrupting service.

22. LAYOUT OF WORK: The contractor shall be provided, at the owner's expense, one (1) set of construction stationing. No additional construction staking will be provided by the Owner. All additional staking will be Contractor's responsibility.

STATE OF LOUISIANA
E. HUNTER LANCASTER
REG. No. 39557
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
3-18-26

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GENERAL NOTES

DESIGNED BY: EHL	REV. NO.	DATE
DRAWN BY: EHL		
CHECKED BY: HAS		
SCALE: 1" = 50'		
PROJ. NO: 3570		
DATE: MARCH, 2026		

GRAMBLING STATE UNIVERSITY
ROADWAY RECONSTRUCTION, COLLEGE AVENUE

SHEET NO.
C6 OF 6C

GENERAL PROVISIONS

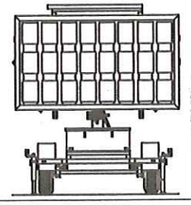
- All temporary traffic control (TTC) devices used shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges, the MUTCD, and shall meet the NCHRP Report 350 or MASH requirements for Test Level 3 devices where applicable.
- Materials used for TTC shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges and, when applicable, the LADOTD AML.
- Placement of TTC devices shall not commence without the approval of the Engineer and until work is about to begin, unless they are covered.
- No lane closures, lane shifts, diversions or detours shall occur without the approval of the Engineer.
- Responsibility is hereby placed upon the contractor for the installation, maintenance and operation of all TTC devices called for in these plans or required by the Engineer for the protection of the traveling public as well as all LADOTD and construction personnel.
- The contractor shall also be responsible for the maintenance of all permanent signs, pavement markings, and traffic signals left in place as essential to the safe movement and guidance of traffic within the project limits unless noted in the plans.
- The DTOE shall serve as a technical advisor to the Engineer for all traffic control matters.
- The Chief Construction Engineer or his appointed designee shall approve all signs and situations not addressed in the plans based on the recommendations of the Project Engineer and the DTOE. All changes shall be noted in all project traffic control diaries.
- The Chief Construction Engineer or his appointed designee shall approve all design speeds of diversions or shifts, if it differs from design plans, based on the recommendations of the Project Engineer and the DTOE.
- All temporary traffic control plans shall comply with the Transportation Management Plan.
- Any additional signs shown in the MUTCD and required by the Engineer shall be installed under Item 713-01-00100.
- Neither work activity nor storage of equipment, vehicles, TMAs, or materials shall occur within the buffer space.
- When a work area has been established on one side of the roadway only, there shall be no conflicting operations or parking on the opposite shoulder within 500 feet of the work area.
- A lighting plan shall be submitted to the Engineer 30 days prior to night work for approval. (See section 105.20 of the Louisiana Standard Specifications for Roads and Bridges.)
- Parking of vehicles or unattended equipment or storage of materials, within the clear zone shall not be permitted unless protected by guardrail or barriers. If the clear zone is not defined on the plan sheets, the Engineer shall verify.
- Immediately upon removal of existing guardrail, the contractor shall install and maintain an NCHRP Report 350 or MASH approved device to protect the blunt end of the bridge or column *until new guardrail* is installed. After removal of the existing guardrail, new guardrail should be installed within seven (7) days. On non-NHS routes with shoulders less than 8 feet wide: If an NCHRP 350 Report Test Level 3 or MASH device is required but the field conditions of the roadway cannot support a Test Level 3 device, then a Test Level 2 device can be substituted in its place upon approval by the Engineer. If utilized, a TMA is allowed for a maximum of 72 hours.
- All costs associated with crash devices are to be included in Item 713-01-00100.
- Sight distance should be considered when placing traffic control devices.
- On all mainline Interstates, a minimum of 1.5 feet of paved shoulder on the left and right side shall be maintained at all times.
- On Interstates, a minimum of 11 foot lanes shall be maintained. On all other roadways, a 10 foot minimum travel lane should be maintained where practical.
- TTC Standards are not drawn to scale.
- The contractor shall develop an internal traffic control plan approved by the Engineer prior to each phase.
- Truck restrictions such as (but not limited to) restricting lanes, oversize loads or times of travel, may be required for narrow lanes or other field conditions.

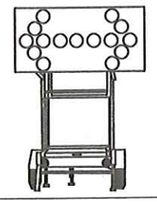
PAVEMENT MARKINGS (see AML)

- All pavement markings within the limits of the project or adjacent to the project limits that are in conflict with the project signing or the required traffic movements shall be removed from the pavement by blast cleaning or grinding. (Existing striping shall not be painted over with black paint or covered with tape.)
- If special pavement markings are needed, they shall be reflectorized, removable and accompanied by the proper signage.
- Temporary Raised Pavement Markers may be added to supplement temporary striping in areas of transition, in tapers, in diversions and in other areas of need as shown in the plans or as directed by the Engineer.
- Materials and placement of temporary pavement markings shall conform to Section 713 of the Louisiana Standard Specifications for Roads and Bridges. If no pay item exists for temporary markings, they shall be installed under item 713-01-00100.
- Temporary markings installed in the permanent configuration shall comply with LADOTD pavement marking standard plans, MUTCD and/or the permanent striping plans.

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

- PCMS shall be used on all Interstate Highways. PCMS shall be used on all other roadways (where space is available) with an ADT greater than 20,000.
- When used in advance of a lane closure or a lane shift, the PCMS should be placed on the right hand side of the road a minimum distance of 2 miles in advance of the taper for interstates and to be determined by the Engineer on other highways.
- For interstates and multi-lane highways, if vehicles are queuing beyond the 2 mile PCMS, an additional PCMS should be placed on the right hand side of the road approximately 5 miles in advance of the taper or at the end of the queue, whichever is greater.
- PCMS messages shall be approved by the DTOE. Messages shall be no more than 3 lines and 2 screens.
- Messages shall display only traffic operational, regulatory, warning, and guidance information. PCMS messages shall not display advertising or safety messages. Messages should only convey information concerning the problem/situation, location, and recommended driver action.
- PCMS should be placed as far from the traveled lane as possible. They shall be shielded by guardrail or barriers. If this is not possible they shall be delineated with a min. 3 drum taper spaced at 20ft with a 4th drum alongside the PCMS.
- If the PCMS encroaches on the improved shoulder then the contractor shall install a shoulder closure.
- *When the PCMS is not displaying a work zone appropriate message* pertaining to the ongoing construction project it shall be shielded by guard rail or barriers, or removed from the clear zone.





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.

SPEED LIMITS

- The Engineer may approve a 10 mph drop in the speed limit for posted speeds of 45 mph or greater and for any construction, maintenance or utility operation that requires one or more of the following:
  - (A) The condition of the traveled way is degraded due to milled surfaces or uneven travel lane lines greater than 1.5 inches.
  - (B) Work is in progress in the immediate vicinity of the travel way requiring lane closures or lane width reductions less than 11 feet.
  - (C) Workers present on the shoulder within 2 feet of the edge of the traveled way without barrier protection.
- The reduced speed zone shall only apply to those portions of the project limits affected. The Engineer may allow SPEED LIMIT WHEN FLASHING signs to supplement reduced speed zones.
- If the speed limit is reduced, speed limit signs shall be placed:
  - (A) beyond major intersections;
  - (B) at one mile intervals in rural areas;
  - (C) at half mile intervals in urban areas.
- At the end of the reduced speed zone, a speed limit sign displaying the original speed limit prior to construction shall be installed.
- For all other speed limit reductions not listed above, the Project Engineer and the DTOE shall recommend the speed reduction to the Chief Construction Engineer or his appointed designee for approval.
- If the speed limit is reduced more than 10 mph, placement of the signs shall be re-evaluated according to the MUTCD.

FLASHING ARROW BOARDS

- All Flashing Arrow Boards shall be 4 feet by 8 feet and Type C.
- Flashing Arrow Boards should be placed on the shoulder. When there is no shoulder or median area, the arrow board shall be placed within the closed lane behind the channelizing devices and as close to the beginning of the taper as practical.
- Flashing arrow boards shall be delineated with retroreflective TTC devices.
- At no time shall the arrow board encroach in the traveled way. When Flashing Arrow Board signs are not being used, they shall be shielded by guard rail or barriers, or removed.
- Arrow boards shall only be used for lane reduction tapers and shall not be used for lane shifts.

ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ADT	Average Daily Traffic
AGCI	Associated General Contractors of America
AML	Approved Materials List
ANSI	American National Standards Institute
ATSSA	American Traffic Safety Services Association
B.O.P.	Beginning of Project
DTOE	District Traffic Operations Engineer
E.O.P.	End of Project
LADOTD	Louisiana Department of Transportation and Development
MASH	AASHTO Manual for Assessing Safety Hardware
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
NHS	National Highway System
PCMS	Portable Changeable Message Sign
TMA	Truck Mounted Attenuator
TMC	Traffic Management Center
TTC	Temporary Traffic Control
TTC Standards	Temporary Traffic Control Standard Plans

FOR INFORMATIONAL PURPOSES ONLY

SHEET NUMBER

DESIGNED G. LEBLANC
CHECKED J. COLVIN
DETAILED C. FAKOURI
CHECKED G. LEBLANC
PARISH
CONTROL SECTION
STATE PROJECT
SERIES NUMBER

NO. DATE REVISION OR CHANGE ORDER DESCRIPTION BY DATE: 7/2/18

APPROVED BY CHIEF ENGINEER

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

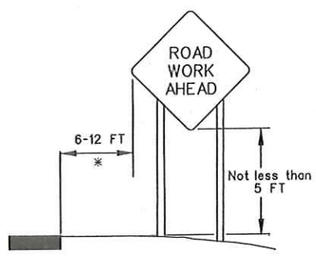
TEMPORARY TRAFFIC CONTROL
GENERAL NOTES SHEET

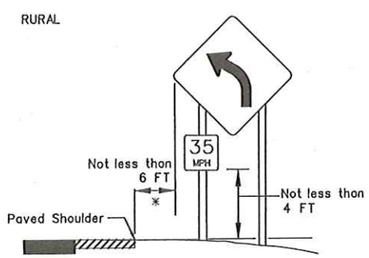
TTC-00 (A)

DOTD TRAFFIC ENGINEERING

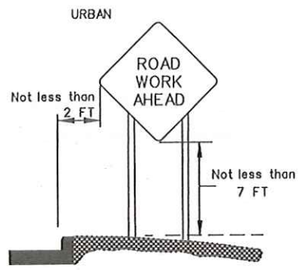
SIGNS

- All signs used for temporary traffic control shall follow the plans, the LADOTD TTC Standards and the MUTCD.
- Signs shown in the TTC illustrations are typical and may vary with each specific condition.
- One Type B High Intensity light shall be used to supplement the first sign (or pair of signs) that gives warning about a lane closure during nighttime operations (See AML).
- Mesh rollup signs shall not be allowed on any project.
- Contractor shall use caution not to damage existing signs which remain in place. Any LADOTD signs damaged by work operations shall be replaced by the contractor under item 713-01-00100.
- All signs (permanent and temporary) shall be removed or completely covered with a strong, lightweight, opaque material when no longer applicable. (Burlap is not an acceptable material to cover signs).
- At no time shall signs warning against a particular operation be left in place once the operation has been completed or where the condition has been removed.
- Warning signs used for temporary traffic controls shall meet the following guidelines unless otherwise noted in the plans:
  - (A) size shall be 48 inches by 48 inches.
  - (B) see the Louisiana Standard Specifications for Roads and Bridges and the AML for sheeting information.
  - (C) lateral distance of signs shall be a minimum of 6 feet from the edge of shoulder or edge of pavement if no shoulder exists and 2 feet from the back of curb in urban areas (see diagram).
- When portable sign frames are not in use, they shall be moved to an area inaccessible to traffic and not visible to the driver.
- Left side mounted signs will not be required for roadways with a center left turn lane and for undivided roadways.
- Vinyl roll up signs may be used if work zone is in place for 12 hours or less, there are no more than 2 lanes in each direction and if signs meet all size, color, retroreflectivity and NCHRP 350 Report or MASH requirements.
- All signs shall be visible to the drivers (i.e. no obstructions such as on street parking or other traffic control devices shall block the sign).
- On divided highways, signs shall be placed on the right and the left as shown on the TTC standards.
- 1 foot portable sign stands may be used if the work zone is in place for 14 hours or less and there are no more than 2 lanes in each direction.
- Sign posts:
  - -Signs measuring 10 square feet or less shall be mounted on 1 rigid post
  - -Signs over 10 square feet shall be mounted on 2 rigid posts
  - -Signs over 20 square feet shall be mounted on at least 3 rigid posts
- Rigid sign supports shall be driven to a minimum depth of 3 feet. (If splicing is required, see Allowable Lap Splice U-channel Post.)
- For sign height, see the Rural and Urban diagrams:





* If lateral distance is not practical, the sign may be placed no less than 2 feet.

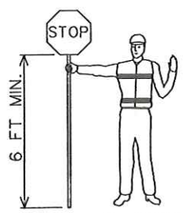


LANE CLOSURES

- All proposed lane, road or shoulder closures shall be reviewed by the DTOE and approved by the Engineer.
- Two lane, two-way highways shall have a maximum work area of two miles; all other roadways shall have a four mile maximum work area.
- A queue analysis shall be performed prior to approval of lane closures on all Interstates according to Section 6A.1 of the Traffic Engineering Manual.
- Closure plans and times shall be turned in to the Engineer for review according to the following:
  - (A) 5 working days minimum if traffic control plan has been approved or is contained in the plans.
  - (B) 10 working days minimum and a traffic control plan must be submitted for lane closures not addressed in the plans.
- Weekly updates to the DTOE, Project Engineer, the LADOTD TMC operator and the regional TMC operator (if applicable) will be required for all ongoing lane closures to update the closure status.
- Daily updates to the DTOE, Project Engineer and TMC operator (if applicable) will be required for all projects where active closures are in place.

FLAGGERS

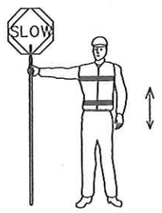
- All flaggers shall be qualified.
- The contractor shall be responsible for training or assuring that all flaggers are qualified to perform flagging duties.
- A Qualified Flagger is one that has completed courses such as those offered by ATSSA or other courses approved by the LADOTD Work Zone Task Force. The contractor shall be responsible for getting the flagger course approved.
- When utilized, a flagger shall use a minimum 18 inch octagonal shape sign on a minimum 6 foot stop/slow paddle and wear ANSI Class 2 Lime Green vest during day time operations and ANSI Class 3 Lime Green ensemble during night operations.
- In all flagging operations, the flagger must be visible from the flagger advance warning sign.
- Flaggers shall not be used on the Interstate.



To STOP Traffic

Traffic Proceed

Use of Hand Sign



To Alert & SLOW Traffic

Use of Hand Sign

PEDESTRIAN CONSIDERATIONS

- If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided either through the TTC zone or a designated alternate route.
- Pedestrians should be provided with a convenient and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s) or footpath(s).
- Advance notification of sidewalk closures shall be provided by the maintaining agency.

REFERENCES

- The contractor shall be responsible for understanding all rules and requirements in the current edition of the following documents:

1) Louisiana Standard Specifications for Roads and Bridges. http://www.dotd.la.gov/highways/specifications/
2) Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). http://mutcd.fhwa.dot.gov/
3) LADOTD Approved Materials List (AML) Manual. http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Materials_Lab/Pages/Menu_QPL.aspx
4) LADOTD Traffic Engineering Manual http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Traffic_Engineering/Misc%20Documents/Traffic%20Engineering%20Manual.pdf
5) National Cooperative Highway Research Program (NCHRP) Report 350: "Guidelines for Work Zones Traffic Control Devices". http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_350-a.pdf
6) NCHRP Report 475: "A Procedure for Assessing and Planning Nighttime Highway Construction and Maintenance". http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_475.pdf
7) NCHRP Report 476: "Guidelines for Design and Operation of Nighttime Traffic Control for Highway Maintenance". http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_476.pdf
8) NCHRP Report 498: "Illumination Guidelines for Nighttime Highway Work". http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_498.pdf
9) American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide.
10) American Traffic Safety Services Association (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices and Features.
11) U.S. Department of Transportation Federal Highway Administration Traffic Control Handbook for Mobile Operations at Night. http://www.dot.state.il.us/blr/1023.pdf

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ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER.
CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

GARY N. LeBLANC
REG. No. 21220
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6-27-18

FOR INFORMATIONAL PURPOSES ONLY

SHEET NUMBER

PARISH | CONTROL SECTION | STATE PROJECT

DESIGNED G. LEBLANC
CHECKED J. COLVIN
DETAILED C. FAKOURI
CHECKED G. LEBLANC
SERIES NUMBER

NO.	REVISION OR CHANGE ORDER DESCRIPTION	BY	DATE
			7/2/18

APPROVED BY CHIEF ENGINEER

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

TEMPORARY TRAFFIC CONTROL
GENERAL NOTES SHEET

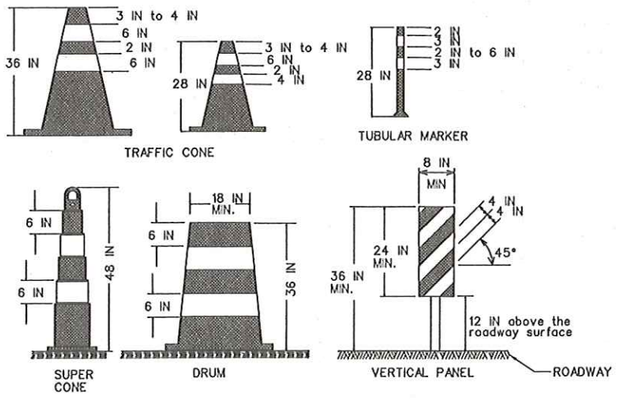
TTC-00 (B)

DOTD TRAFFIC ENGINEERING

CHANNELIZING DEVICES

- The following devices may be used as channelizing devices: Tubular Markers, Vertical Panels, Cones, Drums and Super Cones.
- 28 inch traffic cones are not allowed on:
  1) Interstates
  2) Highways with speeds greater than 40 mph.
- During nighttime operations, 28 inch and 36 inch cones are not allowed.
- Retroreflective material pattern used on super cones shall match that used on drums.

- Tangent Areas:
  - A) Standard Spacing: See Standard Device Spacing and Buffer Space table.
  - B) Daylight Operations: Drums and super cones are spaced at standard spacing. All other devices are at ½ standard spacing.
  - C) Nighttime Operations: Drums and supercones at standard spacing are the only devices allowed.
- Taper Areas:
  - A) Standard Spacing: See Standard Device Spacing and Buffer Space table.
  - B) Daylight Operations: Drums are spaced at standard spacing. All other devices are ½ standard spacing.
  - C) Nighttime Operations: Drums (at standard spacing) are the only devices allowed.
- Type C steady burn lights shall be used on all channelizing devices in the taper as well as the first two devices in the tangent at night, (see the AML).
- Typical channelizing device lateral placement (do not include when it is used as a divider for opposing directions of traffic) shall be 2 feet off the lane line in the closed lane or shoulder.
- Devices may be adjusted laterally to accomodate ongoing work in the immediate vicinity but must be returned to the closed lane after the work activity has moved.
- Channelizing devices on the lane line shall be of the same type.
- Channelizing devices in each taper shall be of the same type.



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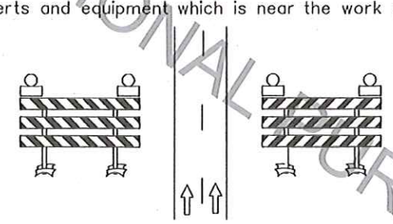
TYPE III BARRICADES

- Only Type III Barricades shall be used.
- All barricades shall use Type 3 High Intensity Sheeting on both sides of the barricade.
- All barricades shall be a minimum of 8 feet in length and must meet NCHRP Report 350 or MASH requirements.
- When used for overnight closures, two Type B High Intensity Lights shall supplement all barricades that are placed in a closed lane or that extend across a highway. Two Type A Low Intensity Lights may be used in urban areas if approved by the Engineer (See AML).
- When signs and lights are to be mounted to a barricade, they must meet NCHRP Report 350 or MASH requirements.
- A truck with a TMA may be substituted for a barricade when workers are present.
- Barricades shall be placed:
  - (A) at the beginning of a closed lane or shoulder and at 1,000 foot intervals where no active work is ongoing and the lane must remain closed. A minimum of 2 barricades shall be placed if the lane or shoulder closure is less than 2,000 feet. (One barricade shall be placed at the beginning of the lane closure after the buffer space and one shall be placed in the middle of the lane closure.)
  - (B) before each or group of unfilled holes or holes filled with temporary material.
  - (C) before uncured concrete.
  - (D) in the closed lane on each side of every intersection and crossover. (Do not block sight distance.)
  - (E) in front of piles of material (dirt, aggregate, broken concrete), culverts and equipment which is near the work zone.



TTC for DROP-OFFS

NON-INTERSTATE

Average Drop-off	Current Posted Speed (Prior to Construction)	
	> 45 MPH	≤ 45 MPH
≤ 3 IN	Low Shoulder Sign (Optional)	Low Shoulder Sign (Optional)
> 3 IN ≤ 6 IN	Shoulder Drop Off Sign & Edge Lines or Shoulder Drop Off Sign & Channelizing Device	Shoulder Drop Off Sign
> 6 IN ≤ 10 IN	No Shoulder Sign, Edge Lines & Vertical Panel	No Shoulder Sign & Channelizing Device
> 10 IN	Concrete Barrier (if drop off is < 12 FT from edge of travel lane) & Edge Lines	No Shoulder Sign & Vertical Panel

INTERSTATE

Average Drop-off	
≤ 2 IN	Low Shoulder Sign (Optional)
> 2 IN ≤ 6 IN	Shoulder Drop Off Sign & Edge Lines or Shoulder Drop Off Sign & Channelizing Device
> 6 IN	Concrete Barrier (if drop off is < 12 FT from edge of travel lane), Shoulder Drop Off Sign, & Edge Lines

- If a portable concrete barrier will be required then the deflection shall be considered in the design.
- For Interstate ramps, refer to non-Interstate drop offs.

GARVIN LEBLANC REG. NO 28220 REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6-27-18

STANDARD DEVICE SPACING AND BUFFER SPACE

SPEED LIMIT (prior to construction)	MERGING TAPER LENGTH (L) Lane Width (FT)				STANDARD DEVICE SPACING IN FEET		BUFFER SPACE
MPH	9	10	11	12	Along Taper	Along Tangent	FT
25	94	105	115	125	20	40	155
30	135	150	165	180	30	60	200
35	184	205	225	245	35	70	250
40	240	267	294	320	40	80	305
45	405	450	495	540	40	80	360
50	450	500	550	600	40	80	425
55	495	550	605	660	40	80	495
60	540	600	660	720	40	80	570
65	585	650	715	780	40	80	645
70	630	700	770	840	40	80	730
75	675	750	825	900	40	80	820

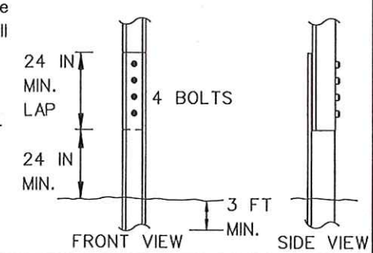
SPEED LIMIT (prior to construction)	SHIFTING TAPER LENGTH (1/2)(L) Lane Shift (FT)						STANDARD DEVICE SPACING IN FEET		BUFFER SPACE
MPH	2	4	6	8	10	12	Along Taper	Along Tangent	FT
25	11	21	32	42	52	63	20	40	155
30	15	30	45	60	75	90	30	60	200
35	21	41	62	82	102	123	35	70	250
40	27	54	80	107	134	160	40	80	305
45	45	90	135	180	225	270	40	80	360
50	50	100	150	200	250	300	40	80	425
55	55	110	165	220	275	330	40	80	495
60	60	120	180	240	300	360	40	80	570
65	65	130	195	260	325	390	40	80	645
70	70	140	210	280	350	420	40	80	730
75	75	150	225	300	375	450	40	80	820

SPEED LIMIT (prior to construction)	SHOULDER TAPER LENGTH (1/3)(L) Shoulder Width (FT)						STANDARD DEVICE SPACING IN FEET		BUFFER SPACE
MPH	2	4	6	8	10	12	Along Taper	Along Tangent	FT
25	7	14	21	28	35	42	20	40	155
30	10	20	30	40	50	60	30	60	200
35	14	28	41	55	68	82	35	70	250
40	18	36	54	72	89	107	40	80	305
45	30	60	90	120	150	180	40	80	360
50	34	67	100	134	167	200	40	80	425
55	37	74	110	147	184	220	40	80	495
60	40	80	120	160	200	240	40	80	570
65	44	87	130	174	217	260	40	80	645
70	47	94	140	187	234	280	40	80	730
75	50	100	150	200	250	300	40	80	820

- All termination and flagger tapers are 100 feet. (MIN. 6 channelizing devices per lane equally spaced 20 feet apart.)
- See TTC Standards for flagger taper.
- See MUTCD for taper formulas.

- ALLOWABLE LAP SPLICE FOR U-CHANNEL POST

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. The spliced sections shall be secured with at least four 5/16 inch diameter hex bolts spaced equally along the splice.



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APPROVED BY CHIEF ENGINEER:

DATED: 7/1/18

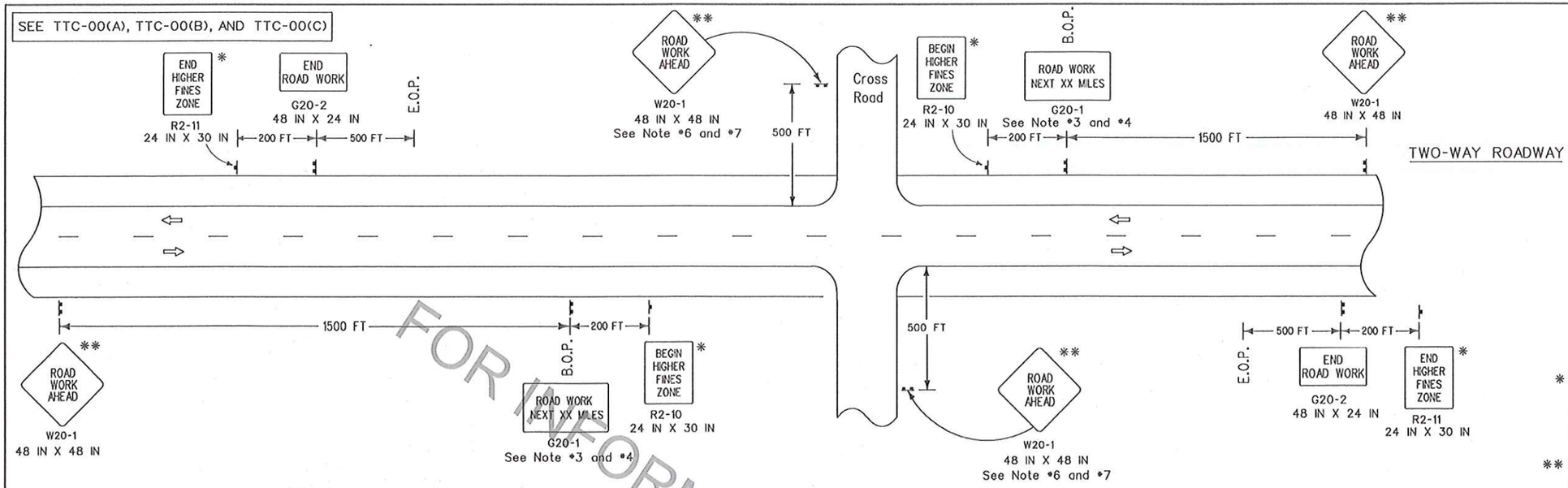
STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

TEMPORARY TRAFFIC CONTROL
GENERAL NOTES SHEET

TTC-00 (C)

DOTD TRAFFIC ENGINEERING

SEE TTC-00(A), TTC-00(B), AND TTC-00(C)



* For divided roadways with speeds ≥ 50 mph use larger sign, 36 IN X 48 IN.

** Any sign of the W20-1 series may be used.

FOR INFORMATIONAL PURPOSES ONLY

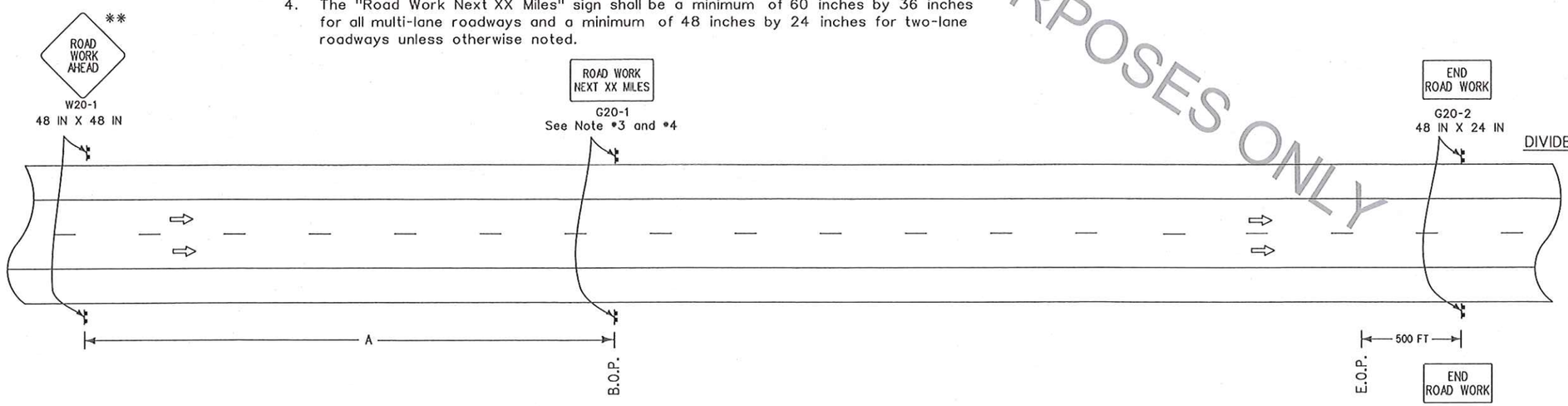
NOTES

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), TTC-00(C), and other Temporary Traffic Control Sheets as appropriate.

1. This layout represents the minimum traffic controls required for placement of "Road Work Next XX Miles" and "End Road Work" signs.
2. This layout does not replace other TTC Standard Sheets, but is intended as a supplement to the required signing.
3. The distance on the "Road Work Next XX Miles" sign shall be stated to the nearest whole mile. This sign shall be placed at the Beginning of Project (B.O.P.) limits. This sign may be omitted if work zone is less than 0.5 miles.
4. The "Road Work Next XX Miles" sign shall be a minimum of 60 inches by 36 inches for all multi-lane roadways and a minimum of 48 inches by 24 inches for two-lane roadways unless otherwise noted.
5. The "End Road Work" sign shall be placed 500 feet past the End of Project (E.O.P.) limits.
6. If "Road Work Ahead" sign is used on a cross road to warn of road work on another route, then "End Road Work" sign is not required.
7. When projects are separated by less than 1 mile, they shall be signed as one project; this may require coordination.

LEGEND

- Traffic Sign
- Direction of Travel



SPEED LIMIT (prior to construction)	SPACING 'A'
≤ 40 mph	1500 FT
45 mph	2640 FT
> 45 mph	5280 FT

- Sign spacing to be adjusted for Horizontal and Vertical curves.
- For work outside of the traveled way, see TTC-01 and TTC-02.

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.

GARY N. LEBLANC
REG. NO. 28220
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6-27-18

SHEET NUMBER

DESIGNED	G. LEBLANC
CHECKED	J. COLVIN
DETAILED	C. FAKOURI
CHECKED	G. LEBLANC

PARISH | CONTROL SECTION | STATE PROJECT | SERIES NUMBER

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

APPROVED BY: CHIEF ENGINEER

DATE: 7/5/18

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DOTD TRAFFIC ENGINEERING

TEMPORARY TRAFFIC CONTROL
LAYOUT FOR PLACEMENT OF ROAD WORK NEXT XX MILES AND END ROAD WORK SIGNS

TTC-00 (D)