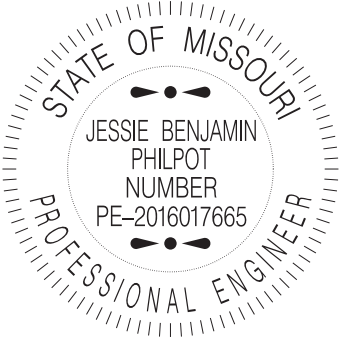


JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

(Job Special Provisions shall prevail over General Special Provisions whenever in conflict therewith.)

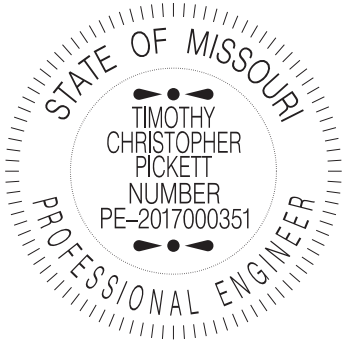
A.	General - Federal JSP-09-02E	1
B.	Contract Liquidated Damages JSP-13-01B	1
C.	Work Zone Traffic Management JSP-02-06H	2
D.	Emergency Provisions and Incident Management JSP-90-11	4
E.	Project Contact for Contractor/Bidder Questions JSP-96-05	4
F.	Utilities JSP-93-26F	5
G.	Restrictions for Migratory Birds NJSP-16-06A	6
H.	Temporary Stream Crossings and Workpads	7
I.	Optional Pavements JSP 06-06G	8
J.	Contractor Quality Control NJSP-15-42	9
K.	Fertilizing, Seeding and Mulching	11
L.	Modified Linear Grading, Class 2	11
M.	Flap Gate	12
N.	Damage to Existing Roadways and Entrances	15
O.	Order of Work - J9S3330	15
P.	Slurry and Residue Produced During Surface Treatment of PCCP and Bridge Decks JSP-06-05	15
Q.	Pipe Culverts	16
R.	Supplemental Revisions JSP-18-01H	16

 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636</p>
	<p>If a seal is present on this sheet, JSP's have been electronically sealed and dated.</p>
	<p>JOB NUMBER: J9S3226 NEW MADRID COUNTY, MO DATE PREPARED:</p>
	<p>ADDENDUM DATE:</p>
<p>Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: A-N & P-R</p>	

JobNo.:J9S3226,J9S3330

Route: D

County: New Madrid

 <p>STATE OF MISSOURI PROFESSIONAL ENGINEER TIMOTHY CHRISTOPHER PICKETT NUMBER PE-2017000351</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636</p>
	<p>If a seal is present on this sheet, JSP's have been electronically sealed and dated.</p>
	<p>JOB NUMBER: J9S3330 NEW MADRID COUNTY, MO DATE PREPARED:</p>
	<p>ADDENDUM DATE:</p>
<p>Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All</p>	

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02E

1.0 Description. The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of work required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations, and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the contractor and the contractor's subcontractors shall pay the higher of these two applicable wage rates. State Wage Rates, Information on the Required Federal Aid Provisions, and the current Federal Wage Rates are available on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT", "Contractor Resources". Effective Wage Rates will be posted 10 days prior to the applicable bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

1.2 The following documents are available on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to July 2019 Missouri Standard Plans
For Highway Construction

These supplemental bidding documents contain all current revisions to the published versions and have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

B. Contract Liquidated Damages JSP-13-01B

1.0 Description. Liquidated Damages for failure or delay in completing the work on time for this contract shall be in accordance with Sec 108.8. The liquidated damages include separate amounts for road user costs and contract administrative costs incurred by the Commission.

2.0 Period of Performance. Prosecution of work is expected to begin on the date specified below in accordance with Sec 108.2. Regardless of when the work is begun on this contract, all work shall be completed on or before the date specified below. Completion by this date shall be in accordance with the requirements of Sec 108.7.1.

Notice to Proceed: January 6, 2020
Completion Date: December 1, 2021

2.1 Calendar Days. The count of calendar days will begin on the date the contractor starts any construction operations on the project.

Job Number	Calendar Days	Daily Road User Cost
J9S3330	123	\$1800
J9S3226	170	\$1800

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **\$500** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified completion date or calendar days.

4.0 Liquidated Damages for Road User Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged road user costs in accordance with Sec 108.8 in the amount specified in Section 2.1 for each calendar day, or partial day thereof, that the work is not fully completed. These damages are in addition to the contract administrative damages and any other damages as specified elsewhere in this contract.

C. Work Zone Traffic Management JSP-02-06H

1.0 Description. Work zone traffic management shall be in accordance with applicable portions of Division 100 and Division 600 of the Standard Specifications, and specifically as follows.

2.0 Traffic Management Schedule.

2.1 Traffic management schedules shall be submitted to the engineer for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management schedule shall include the proposed traffic control measures, the hours traffic control will be in place, and work hours.

2.2 The traffic management schedule shall conform to the limitations specified in Sec 616 regarding lane closures, traffic shifts, road closures and other width, height and weight restrictions.

2.3 The engineer shall be notified as soon as practical of any postponement due to weather, material or other circumstances.

2.4 In order to ensure minimal traffic interference, the contractor shall schedule lane closures for the absolute minimum amount of time required to complete the work. Lanes shall not be

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately

implement appropriate mitigation strategies whenever traffic congestion reaches an excess of 10 minutes to prevent congestion from escalating to 15 minute or above threshold. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable.

2.5.1 Traffic Safety.

2.5.1.1 Recurring Congestion. Where traffic queues routinely extend to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

2.5.1.2 Non-Recurring Congestion. When traffic queues extend to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway infrequently, the contractor shall deploy a means of providing advance warning of the traffic congestion, as approved by the engineer. The warning location shall be no less than 1000 feet and no more than 0.5 mile in advance of the end of the traffic queue on divided highways and no less than 500 feet and no more than 0.5 mile in advance of the end of the traffic queue on undivided highways.

3.0 Work Hour Restrictions.

3.1 Except for emergency work, as determined by the engineer, and long term lane closures required by project phasing, all lanes shall be scheduled to be open to traffic during the five major holiday periods shown below, from 12:00 noon on the last working day preceding the holiday until 6:00 a.m. on the first working day subsequent to the holiday unless otherwise approved by the engineer.

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

3.1.1 Independence Day. The lane restrictions specified in Section 3.1 shall also apply to Independence Day, except that the restricted periods shall be as follows:

12:00 noon July 2, 2020 – 10:00 p.m. July 5, 2020
12:00 noon July 2, 2021 – 6:00 a.m. July 6, 2021
12:00 noon July 1, 2022 – 6:00 a.m. July 5, 2022

3.2 The contractor shall not perform any construction operation on the roadway, roadbed or active lanes, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

4.0 Detours and Lane Closures.

4.1 At least one lane of traffic in each direction shall be maintained at all times except for brief intervals of time required when the movement of the contractor's equipment will seriously hinder the safe movement of traffic. Periods during which the contractor will be allowed to interrupt traffic will be designated by the engineer.

5.0 Basis of Payment. No direct payment will be made to the contractor to recover the cost of equipment, labor, materials or time required to fulfill the above provisions, unless specified elsewhere in the contract document. All authorized changes in the traffic control plan shall be provided for as specified in Sec 616.

D. Emergency Provisions and Incident Management JSP-90-11

1.0 The contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from the police or other emergency agencies for incident management. In case of traffic accidents or the need for police to direct or restore traffic flow through the job site, the contractor shall notify police or other emergency agencies immediately as needed. The area engineer's office shall also be notified when the contractor requests emergency assistance.

Resident Engineer, Brian Holt: (573) 243-0899 office
(573) 344-2320 cell

2.0 In addition to the 911 emergency telephone number for ambulance, fire or police services, the following agencies may also be notified for accident or emergency situation within the project limits.

Missouri State Highway Patrol: (800) 525-5555

New Madrid County Sheriff: (573) 748-2516

2.1 This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate police agency.

2.2 The contractor shall notify enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 No direct pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

E. Project Contact for Contractor/Bidder Questions JSP-96-05

All questions concerning this project during the bidding process shall be forwarded to the project contact listed below.

Jeff Wachter
MoDOT - Southeast District
P.O. Box 160
Sikeston, MO 63801
Telephone Number: (573) 472-5294
E-mail: Jeffery.Wachter@modot.mo.gov

All questions concerning the bid document preparation can be directed to the Central Office – Design at (573) 751-2876.

F. Utilities JSP-93-26F

1.0 For informational purposes only, the following is a list of names, addresses, and telephone numbers of the known utility companies in the area of the construction work for this improvement:

<u>Utility Name</u>	<u>Known Required Adjustment</u>
POWER DISTRIBUTION AmerenUE 45 South Minnesota Cape Girardeau, MO 63703 Contact: Cory Roper Tel: 573-651-5630	None
COMMUNICATION AT&T 800 Broadway Cape Girardeau, MO 63701 Contact: Scott Miller Tel: 573-382-3851	None
COMMUNICATION BPS Telephone 120 Stewart St Bernie, MO 63822 Contact: David Carson Tel: 573-293-2277	None
WATER PWSD # 5 of New Madrid County P.O. Box 226 Gideon, MO 63848 Contact: Karen Smith Tel: 573-448-5281	None

1.1 The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any

representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities.

G. Restrictions for Migratory Birds NJSP-16-06A

1.0 Description. Swallows or other bird species protected by the Migratory Bird Treaty Act may be nesting under the bridge or bridges that will be repaired under this contract.

2.0 Restrictions. To comply with the Migratory Bird Treaty Act, nests of protected species cannot be disturbed when active (eggs or young are present). Generally, nests are active between April 1 and July 31, but active nests can be present outside of these dates.

2.1 MoDOT to Maintain Prior to the Notice to Proceed. The bridge, or bridges, associated with the work for this contract have been evaluated and any inactive nests found have been removed by MoDOT staff. MoDOT staff will maintain the structures to be free of nests until the Notice to Proceed date. At the notice to proceed, the contractor shall be responsible to maintain the structures to be free of nests until the work on the applicable bridge, or bridges, is complete.

3.0 Avoidance Measures. The contractor shall not disturb active nests or destroy adults, eggs or young birds. In an effort to comply with the Migratory Bird Treaty Act, the contractor operations will be limited to the options established in the following sections.

3.1 Inactive or Partially Constructed Nests. If nests are present and MoDOT determines that the nests are inactive or partially constructed, the contractor may remove the nests provided that the colony's inactive or partially constructed nests are completely removed by March 15 and the contractor maintains a nest free condition until the bridge work is complete. Dry removal methods shall be used when practicable. If dry removal is not practicable, hydro cleaning may be used if approved by the Engineer and only if water is free of blasting grit, chemicals, or detergents, and applied using pressure less than 5,000 PSI. Clean water such as that from municipal water treatment plants or wells shall be used. Use of source water from Waters of the State (i.e., streams or lakes), is allowable, if the appropriate methods to prevent the possible spread of invasive aquatic species are implemented.

3.2 Water and Equipment Used for Hydro cleaning. Aquatic invasives such as zebra mussels and some algae species have infested several bodies of water in the United States and can be transported by vessels (barges, boats, tugs, tankers, etc.) and equipment (tanks, tubing, pumps, etc.) that have been used in areas that contain these invasive species. If equipment is not properly inspected and treated to prevent the spread of invasives, these species can be introduced into areas not currently known to have a population. These invasive species are detrimental to existing ecosystems and can outcompete native species. To assist in preventing the introduction and spread of aquatic invasive species through MoDOT projects in Missouri streams and lakes, the following precautions shall be followed.

3.2.1 Use of Water from Streams, Lakes or Ponds. Contractors shall not use water for nest removal from streams, lakes or ponds, unless they have implemented appropriate methods to prevent the possible spread of invasive aquatic species. Water sources from municipal water

treatment plants or wells may be used without following these measures provided the equipment to be used has not previously contained waters from streams, lakes or ponds. If the equipment has previously contained waters from other streams or lakes, the following measures must be implemented prior to use.

3.2.1.1 Equipment Washing. Prior to the use or re-use of equipment following any use with water from streams, lakes or ponds, all equipment shall be washed and rinsed thoroughly with hard spray (power wash) and hot (minimum 120° F) water, for at least one minute.

3.2.1.2 Equipment Treating or Drying. Equipment shall be treated or dried in one of the following manners.

3.2.1.2.1 Equipment interior and/or other surfaces shall be treated with a 10% bleach solution to kill any aquatic nuisance species. This solution must also be run through all intake lines and hoses, to sterilize interior components. When chlorine treatment is used, all chlorine runoff from equipment washing must be collected and properly treated and/or disposed of in accordance with Sec 806.

3.2.1.2.2 Equipment interior and/or other surfaces shall be treated with 140° F water for a minimum of 10 seconds contact on all surfaces. 140 ° F water must also be run through all intake lines and hoses, to purge any standing water.

3.2.1.2.3 Equipment shall be flushed of all non-municipal water, and dried thoroughly, in the sun before using in or transporting between streams and lakes. Dry times will depend on the season the equipment is being used. Equipment must dry a minimum of 7 days for June-September, 18 days for March-May; 18 days for October-November, and 30 days for December-February. The drying method should be reserved as a last resort option.

3.2.2 Prior to use of equipment, contractors shall provide the MoDOT inspector written documentation of the equipment's geographic origin (including the water body it was last used in), as well as defining the specified treatment method used to adequately ensure protection against invasive species. The written documentation will include a statement indicating the contractor is aware of these provisions and will also treat the equipment appropriately after completion of the project.

3.3 Active Nests. The contractor may work on the bridge if active nests are present, as long as the work does not impact or disturb the birds and/or nests. At a minimum, work shall not be performed within 10 feet of an active nest; however, the contractor is responsible for ensuring their activities do not impact the nests, eggs, or young.

4.0 Additional Responsibilities. If active bird nests remain after all reasonable avoidance measures have been taken, or if bird nests are observed during project construction, the contractor shall notify the Resident Engineer and contact the MoDOT Environmental Section (573-526-4778) to determine if there are other allowable options.

H. Temporary Stream Crossings and Workpads

1.0 Description. This work shall include construction of a temporary stream crossing or workpad to facilitate the placement of the Contractor's equipment in the stream, in accordance

with Division 100 of the General Provisions, Section 806.1 of the Standard Specifications, and as follows.

2.0 Construction Requirements. The Contractor shall be solely responsible for the design, installation, maintenance, and removal of the temporary stream crossing or workpad, as well as any structures installed to maintain proper flow while the temporary crossing or workpad is in place.

2.1 Temporary crossings and workpads shall be constructed of clean rock fill in accordance with Sec 303.2, except Sec 303.2.3 shall not apply.

2.2 The Contractor shall design the temporary crossing or workpad, including the size and number of pipes, to maintain normal flows, prevent upstream flooding, and allow free movement of aquatic life in the stream.

2.3 Storm water from the approaches to temporary crossings or workpads must be diverted to appropriate erosion control devices to allow sediment-laden runoff to be treated prior to entering the stream.

2.4 Pipes shall be anchored to prevent being swept from the project during high flows.

2.5 Temporary stream crossings and workpads shall not conflict with existing utilities. Any utilities that conflict with the construction of a temporary crossing/workpad or operation of equipment on a temporary crossing/workpad shall be relocated at the Contractor's expense.

2.6 Temporary stream crossings and workpads is to be installed on the south side of bridge.

3.0 Basis of Payment. No direct payment will be made for any equipment, labor, material, or time involved with the design, installation, maintenance, or removal of temporary stream crossings and workpads. The contractor shall be responsible for all costs, including damage and penalties.

I. Optional Pavements JSP 06-06G

1.0 Description. This work shall consist of a pavement composed of either Portland cement concrete or asphaltic concrete constructed on a prepared subgrade. This work shall be performed in accordance with the standard specifications and as shown on the plans or established by the engineer.

2.0 The quantities shown reflect the total square yards of pavement surface designated for each pavement type as computed and shown on the plans.

2.1 No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, or for tack applied between lifts of asphalt.

2.2 No additional payment will be made for aggregate base quantities outside the limits of the final surface area as computed and shown on the plans. When A2 shoulders are specified, payment for aggregate base will be as shown on the plans.

2.3 The grading shown on the plans was designed for the thinner pavement option. For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for optional pavements.

2.4 The contractor shall comply with Sections 401 through 403 for the asphalt option and Sections 501 and 502 for the concrete option.

2.5 Pavement options composed of Portland cement concrete shall have contrast pavement marking for intermittent markings (skips), dotted lines, and solid intersection lane lines. The pavement markings shall be in accordance with Section 620. No additional payment will be made for the contrast pavement markings.

3.0 Method of Measurement. The quantities of concrete pavement will be measured in accordance with Section 502.14. The quantities of asphaltic concrete pavement will be measured in accordance with Section 403.22.

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid price for Item 401-99.05, pavement, per square yard.

J. Contractor Quality Control NJSP-15-42

1.0 The contractor shall perform Quality Control (QC) testing in accordance with the specifications and as specified herein. The contractor shall submit a Quality Control Plan (QC Plan) to the engineer for approval that includes all items listed in Section 2.0, prior to beginning work.

2.0 Quality Control Plan.

- (a) The name and contact information of the person in responsible charge of the QC testing.
- (b) A list of the QC technicians who will perform testing on the project, including the fields in which they are certified to perform testing.
- (c) A proposed independent third party testing firm for dispute resolution, including all contact information.
- (d) A list of Hold Points, when specified by the engineer.
- (e) The MoDOT Standard Inspection and Testing Plan (ITP). This shall be the version that is posted at the time of bid on the MoDOT website (www.modot.org/quality).

3.0 Quality Control Testing and Reporting. Testing shall be performed per the test method and frequency specified in the ITP. All personnel who perform sampling or testing shall be certified in the MoDOT Technician Certification Program for each test that they perform.

3.1 Reporting of Test Results. All QC test reports shall be submitted as soon as practical, but no later than the day following the test. Test data shall be immediately provided to the engineer upon request at any time, including prior to the submission of the test report. No payment will be made for the work performed until acceptable QC test results have been received by the engineer and confirmed by QA test results.

3.1.1 Test results shall be reported on electronic forms provided by MoDOT. Forms and Contractor Reporting Excel2Oracle Reports (CRE2O) can be found on the MoDOT website. All

required forms, reports and material certifications shall be uploaded to a Microsoft SharePoint® site provided by MoDOT, and organized in the file structure established by MoDOT.

3.2 Non-Conformance Reporting. A Non-Conformance Report (NCR) shall be submitted by the contractor when the contractor proposes to incorporate material into the work that does not meet the testing requirements or for any work that does not comply with the contract terms or specifications.

3.2.1 Non-Conformance Reporting shall be submitted electronically on the Non-Conformance Report form provided on the MoDOT Website. The NCR shall be uploaded to the MoDOT SharePoint® site and an email notification sent to the engineer.

3.2.2 The contractor shall propose a resolution to the non-conforming material or work. Acceptance of a resolution by the engineer is required before closure of the non-conformance report.

4.0 Work Planning and Scheduling.

4.1 Two-week Schedule. Each week, the contractor shall submit to the engineer a schedule that outlines the planned project activities for the following two-week period. The two-week schedule shall detail all work and traffic control events planned for that period and any Hold Points specified by the engineer.

4.2 Weekly Meeting. When work is active, the contractor shall hold a weekly project meeting with the engineer to review the planned activities for the following week and to resolve any outstanding issues. Attendees shall include the engineer, the contractor superintendent or project manager and any foreman leading major activities. This meeting may be waived when, in the opinion of the engineer, a meeting is not necessary. Attendees may join the meeting in person, by phone or video conference.

4.3 Pre-Activity Meeting. A pre-activity meeting is required in advance of the start of each new activity, except when waived by the engineer. The purpose of this meeting is to review construction details of the new activity. At a minimum, the discussion topics shall include: safety precautions, QC testing, traffic impacts, and any required Hold Points. Attendees shall include the engineer, the contractor superintendent and the foreman who will be leading the new activity. Pre-activity meetings may be held in conjunction with the weekly project meeting.

4.4 Hold Points. Hold Points are events that require approval by the engineer prior to continuation of work. Hold Points occur at definable stages of work when, in the opinion of the engineer, a review of the preceding work is necessary before continuation to the next stage.

4.4.1 A list of typical Hold Point events is available on the MoDOT website. Use of the Hold Point process will only be required for the project-specific list of Hold Points, if any, that the engineer submits to the contractor in advance of the work. The engineer may make changes to the Hold Point list at any time.

4.4.2 Prior to all Hold Point inspections, the contractor shall verify the work has been completed in accordance with the contract and specifications. If the engineer identifies any corrective actions needed during a Hold Point inspection, the corrections shall be completed prior to continuing work. The engineer may require a new Hold Point to be scheduled if the corrections

require a follow-up inspection. Re-scheduling of Hold Points require a minimum 24-hour advance notification from the contractor unless otherwise allowed by the engineer.

5.0 Quality Assurance Testing and Inspection. MoDOT will perform quality assurance testing and inspection of the work, except as specified herein. The contractor shall utilize the inspection checklists provided in the ITP as a guide to minimize findings by MoDOT inspection staff. Submittal of completed checklists is not required, except as specified in 5.1.

5.1 Inspection and testing required in the production of concrete for the project shall be the responsibility of the contractor. Submittal of the 501 Concrete Plant Checklist is required.

6.0 Basis of Payment. No direct payment will be made for compliance with this provision.

K. Fertilizing, Seeding and Mulching

1.0 In accordance with Sections 801 and 805, the contractor shall apply the following to all disturbed areas at the rates specified:

<u>Fertilizing</u>	<u>lbs per acre</u>
Nitrogen (N)	80
Phosphoric Acid (P ₂ O ₅)	80
Potash (K ₂ O)	80
Soil Neutralization	0
<u>Seeding</u>	<u>Live Seed lbs per acre</u>
Tall fescue	80
Teff grass	5
Perennial ryegrass	6
White Clover	6
Oats	5
Total	102

2.0 Vegetative mulch shall be stabilized by mulch overspray or other methods as approved by the engineer.

3.0 Accepted seeding, fertilizing and mulching will be paid for at the unit price bid for Seeding-Cool Season, per acre. Payment for fertilizing and mulch will be considered incidental to seeding.

L. Modified Linear Grading, Class 2

1.0 Description. Modified Linear Grading, Class 2, shall consist of all excavation, contractor furnished fill, embankment construction, grading of ditches and slopes, and final shaping necessary to conform to the lines and grades show in the plans, and shall conform to all applicable portions of Sec 207 and specifically as follows.

2.0 Construction Requirements.

2.1 It may be necessary to go outside the limits of the right of way to obtain additional material. All contractor furnished material shall be approved by the Engineer prior to being incorporated into the project.

2.2 The Engineer shall have sole discretion in determining whether excess material may be incorporated within right-of-way or must be disposed of outside of right-of-way.

2.3 All areas to be graded shall be cleared and grubbed in accordance with Sec 201 or as directed by the Engineer. No measurement or payment will be made for clearing and grubbing.

2.4 Roadside ditches shall be graded to match the existing flowline unless shown otherwise in the plans. Grading for pipe extensions shall match the projected flowline of the existing pipe.

2.5 Any damage to existing drainage structures or existing pavement, resulting from the Contractor's operations, shall be repaired at the Contractor's expense and to the satisfaction of the Engineer.

3.0 Method of Measurement. Measurement will be made to the nearest 1/10 station for the length of grading measured along the centerline of the traveled way.

4.0 Basis of Payment. All costs incurred by the Contractor to comply with this provision shall be considered completely covered by the contract unit price for Item 207-99.09, Modified Linear Grading, Class 2. No direct payment will be made for contractor furnished material or disposal of excess material.

M. Flap Gate

1.0 Description. This work shall consist of furnishing and installing flap gates of standard design and fit the opening shown on the plans.

2.0 Materials. Flap gates shall be constructed as follows.

BILL OF MATERIAL		
PC. #	DESCRIPTION	# REQUIRED
1	CONNECTING BAND - VAR LENGTH (A)	1
2	1/4" x 2" BAR x 2• 1/2" LONG	2
3	1/4" PLATE COVER VAR DIA. (B) - UP TO 24" DIA. PIPE 3/8" PLATE COVER VAR DIA. (B) - ALL PIPES GREATER THAN 24" DIA.	1
4	1/4" x 2" BAR x VAR LENGTH (C)	2
5	1/4" x 2" BAR x 2" LONG W/BRASS BUSHINGS	2
6	7/16" Ø ROD x 8 1/2" LONG	1
7	FLAT BAND LUGS	2
8	1/2" Ø x 6" BAND BOLT & NUT	1
	ATTACHMENT BOLTS (3/8" Ø x 1 1/2" HEX. HEAD)	4

2.1 As a standard finish all gates shall be painted with a shop coat of red oxide.

3.0 Construction Requirements. Flap gates shall react to any difference in water level, and shall be hinged to seat accurately. Flap gates shall be constructed according to Figure 1 – Dimension Details, Figure 2 – Connecting Band and Figure 3 – Cover Plate.

4.0 Method of Measurement. For the basis of this contract, all materials used in constructing the flag gate shall be considered as a single unit. Measurement will be made per each unit installed by the contractor and accepted by the engineer.

5.0 Basis of Payment. The accepted quantity for flap gates, complete in place including connection to the pipe, will be paid for at the contract unit price of each. No additional payment will be made for any labor, equipment or time necessary to fulfill the requirements of this special provision.

DIMENSION DETAILS			
PIPE DIA.	(A) CONNECTING BAND LENGTH	(B) PLATE COVER DIA.	(C) BAR LENGTH
15"	54"	18.5"	16"
18"	64"	21.5"	19"
21"	74"	24.5"	22"
24"	83"	27.5"	25"
30"	102"	33.5"	31"
36"	120"	39.5"	36"
42"	140"	45.5"	42"
48"	159"	51.5"	49"

Figure 1 – Dimension Details

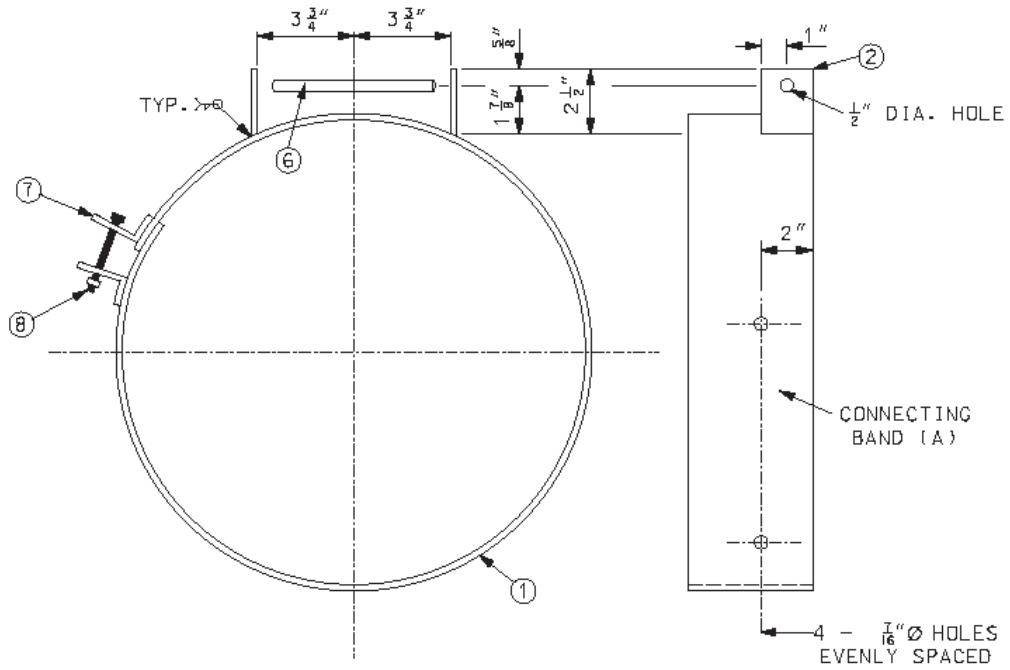


Figure 2 - Connecting Band

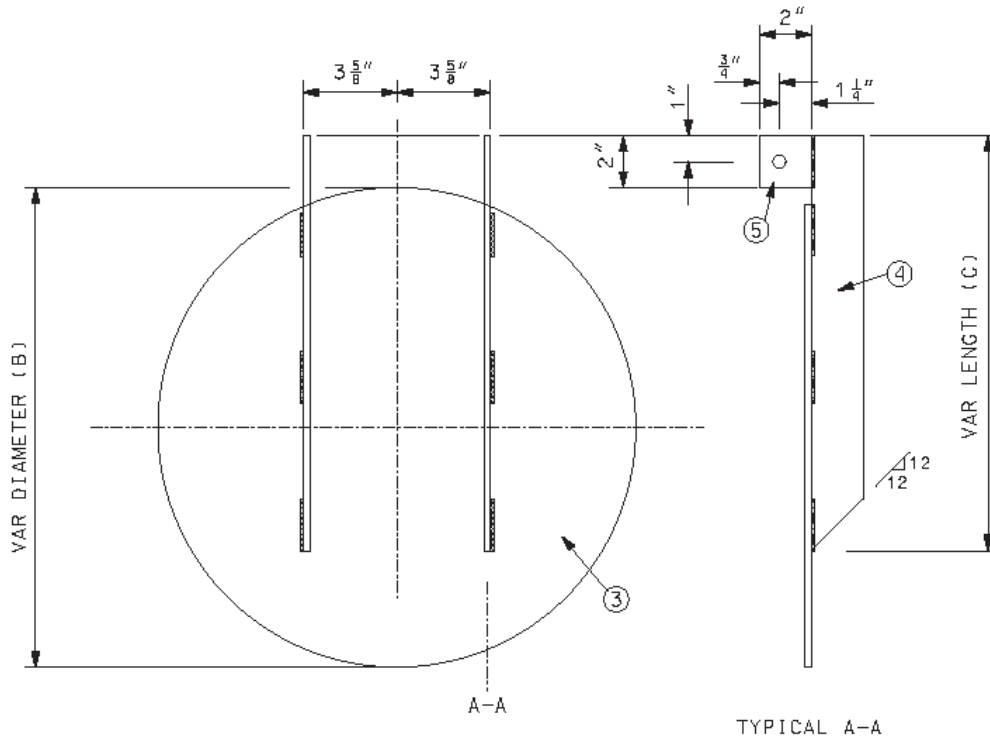


Figure 3 - Cover Plate

N. Damage to Existing Roadways and Entrances

1.0 Description. This work shall consist of repairing any damage to existing pavement, shoulders, side roads, and entrances caused by Contractor operations. This shall include, but is not limited to, damage caused by the traffic during Contractor operations within the project limits including the work zone signing.

2.0 Construction Requirements. Any cracking, gouging, or other damage to the existing pavement, shoulders, side roads, or entrances from general construction shall be repaired within twenty-four (24) hours of the time of damage at the Contractor's expense. Repair of the damaged pavement, shoulders, side roads, or entrances shall be as determined by the Engineer.

3.0 Method of Measurement. No measurement of damaged pavement, shoulder, side roads, or entrances, as described above, shall be made.

4.0 Basis of Payment. No payment will be made for repairs to existing pavement, shoulders, side roads or entrances damaged by Contractor operations.

O. Order of Work - J9S3330

1.0 Bridge A8649 and A8821 shall not be constructed at the same time.

P. Slurry and Residue Produced During Surface Treatment of PCCP and Bridge Decks
JSP-06-05

1.1 Description. This work covers the requirements for controlling residue or slurry produced by milling, grinding, planing, grooving or other methods of surface treatments on new or existing PCCP and bridge decks in addition to Section 622.

2.0 Construction Requirements. The following shall be considered the minimum requirements for performing this work within the project limits.

2.1 The contractor shall submit to the Engineer for approval in writing prior to the pre-construction meeting, the best management practices (BMP's) to be used to protect the environment, including the method of disposal of the residue whether on right of way or off-site.

2.2 Prior to starting work, slurry or residue "no discharge zones" will be identified by the Engineer with respect to the contractor's approved BMP and residue disposal plan.

2.3 Operations may be suspended by the Engineer during periods of rainfall or during freezing temperatures.

2.4 When slurry is dispersed on the right of way, BMP's shall be installed to keep slurry residue from entering drainage structures, from entering any waterways and from leaving the right of way.

3.0 Basis of Payment. No direct payment for slurry or residue control requirements for BMP's will be made. Compliance with this specification along with the cost of all materials, labor and

equipment necessary for the surface treatment work shall be included in and completely covered by the unit price bid for each of the items of work for surface treatment included in contract.

Q. Pipe Culverts

Delete Sec 724.1.1 and Sec 724.1.2 and substitute the following:

724.1.1 The contract will specify either the type of pipe or the group of permissible types of pipe. If a group of permissible types is specified, the contractor may use any of the types listed within the specified group and size range as follows.

	Group A ^b	Group B ^b	Group C
Flexible Pipe -- Metal^a	Size	Size	Size
Aluminum Coated Steel Pipe	ALL	ALL	ALL
Polymer Coated Steel Pipe	ALL	ALL	ALL
Aluminum Alloy Pipe	ALL	ALL	ALL
Bituminous Coated Steel Pipe	NA	NA	ALL

^aMetal Pipe used for storm sewer applications shall be Type IA or Type IR.

^bPipe used for storm sewers under the influent of a pavement section or future anticipated influence of a pavement section which has a 3,500 ADT or greater shall be Group A pipe. Pipe used in other storm sewer applications shall be group B. No other substitutions will be allowed.

724.1.2 The culvert shall be constructed in accordance with Sec 725.

R. Supplemental Revisions JSP-18-01H

Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes areas of land disturbance that will total one (1) acre or greater on the project site at any point in time. When a WPCM is required, all sections within this provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein.

1.1 Applicability. The project site consists of all areas designated on the plans, including temporary and permanent easements. This provision does not apply to Contractor staging, plant, or borrow areas that are not located on MoDOT right of way (Off-site). The Contractor is responsible for obtaining its own separate land disturbance permit for Off-site areas. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

2.0 Water Pollution Control Manager (WPCM). The Contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The Contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

- (a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT's statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project's Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;
- (b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;
- (c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;
- (d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the Engineer;
- (e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer's weekly inspections;
- (f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and ensure that all Stormwater Deficiencies noted on the report are corrected within 7 days of the stormwater inspection or any extended period of time granted by the Engineer.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity Meeting for Grading/Land Disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity Meeting except work necessary to install perimeter controls and entrances. Discussion items at the pre-activity meeting shall include a review of the Project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

3.1 Hold Point. Following the pre-activity meeting for Grading/land disturbance and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).


5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period granted by the engineer when weather or field conditions prohibit the corrective work. If the contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the Contractor. Work shall not resume until the engineer approves the corrective work.

5.1 Liquidated Damages. If the Contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of \$2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

6.0 Basis of Payment. No direct payment will be made for compliance with this provision.

TABLE OF CONTENTS

- A. Construction Requirements
- B. Galvanized Cast-In-Place Concrete Pile
- C. Dynamic Pile Testing
- D. Dewatering

 <p>STATE OF MISSOURI ANOUSONE AROUNPRADITH NUMBER PE-29317 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636</p>
	<p>If a seal is present on this sheet, JSP's has been electronically sealed and dated.</p>
	<p>JOB NO. J9S3226 New Madrid County, MO Date Prepared: 8/7/2019</p>

JOB SPECIAL PROVISIONS (BRIDGE)

A. CONSTRUCTION REQUIREMENTS

1.0 Description. This provision contains general construction requirements for this project.

2.0 Construction Requirements. Plans for the existing structures and geotechnical report for the new bridge are included in the contract in the bridge electronic deliverables zip file for informational purposes only.

2.1 In order to assure the least traffic interference, the work shall be scheduled so that the roadway closure is for the absolute minimum amount of time required to complete the work. The roadway shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed roadway is opened to traffic.

2.2 Provisions shall be made to prevent any debris and materials from falling into the stream. Any debris and materials that falls below the bridge outside the limits mentioned previously and if determined necessary by the engineer, the debris shall be removed as approved by the engineer at the contractor's expense.

2.3 Provisions shall be made to prevent damage to any existing utilities. Any damage sustained to the utilities as a result of the contractor's operations shall be the responsibility of the contractor. All costs of repair and disruption of service shall be as determined by the utility owners and as approved by the engineer.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for other items included in the contract.

B. GALVANIZED CAST-IN-PLACE CONCRETE PILE

1.0 Description. This job special provision contains general requirements for furnishing, coating and placing galvanized steel piles as shown on the plans and shall be in addition to the requirements of Sec 702.

2.0 Material. Structural steel piles shall be galvanized in accordance with ASTM A123 and Sec 1080. Repairs to the galvanized coating and field galvanizing shall be in accordance with ASTM A780. Zinc rich paints will not be allowed. Repairs and field galvanizing will not be required where the pile will be encased in concrete or below the limits specified in section 3.0 of this job special provision. Protective Coatings specified in Sec 702 will not be required for galvanized piles.

3.0 Construction Requirements.

3.1 Galvanizing material shall be omitted or removed 1 inch clear of weld locations. The method used to omit or remove the galvanizing material shall be masking, grinding or other methods as approved by the engineer. If a weld location falls within an area where galvanizing is required, clean the weld area making sure to remove all welding slag. Then field galvanize the weld area in accordance with ASTM A780. Zinc rich paints will not be allowed.

3.2 All pile below the pile concrete encasement shall be galvanized down to an elevation as shown on the plans.

JOB SPECIAL PROVISIONS (BRIDGE)

3.3 At the contractor’s option, the entire pile length may be galvanized.

4.0 Method of Measurement. Galvanized Cast-In-Place Concrete Pile in place will be the actual length to the nearest linear foot for that portion of the pile that remains permanently in the structure. See Sec 702 Basis of Payment for any additional length authorized by the engineer resulting from pile splices. No separate measurement will be made for pile that is not galvanized.

5.0 Basis of Payment. The accepted quantity of galvanized and non galvanized pile in place will be paid for at the contract unit price for Galvanized Cast-In-Place Concrete Pile. No direct payment will be made for incidental items necessary to complete the work unless specifically provided as a pay item in the contract.

C. DYNAMIC PILE TESTING

1.0 General.

1.1 Scope of Work. Scope of work shall include furnishing all labor, equipment and analysis associated with dynamic testing of driven piles as specified in this special provision. Pile restrike testing will not be required on this job.

1.2 Performance and Design Requirements. Performance and design conditions for dynamic testing of driven piles shall be in accordance with [section 4.0](#) of this special provision.

1.3 Approved Manufacturers. For the following hardware and software components, only the listed manufacturer is recognized as providing the level of quality required. If the contractor wants to propose a non-listed manufacturer that is considered to provide an equivalent level of quality, this manufacturer shall be identified and supporting documentation provided. Acceptance of the manufacturer as a substitute will be at the discretion of the engineer.

Component	Product	Manufacturer
Pile Driving Modeling - Wave Equation Software	<u>GRLWEAP</u>	<u>Pile Dynamics, Inc.</u>
Pile Driving Monitoring - Hardware & Software	Pile Driving Analyzer - Model PAK	Pile Dynamics, Inc.
Pile Driving Analysis – Signal Matching Software	<u>CAPWAP</u>	<u>Pile Dynamics, Inc.</u>

1.4 Test Requirements. Dynamic pile testing shall be conducted in accordance with the standard test method indicated below.

Standard Test Method	Designation	Conducted By
High-Strain Dynamic Testing of Piles	ASTM D 4945	Contractor

1.5 Qualifications. The contractor shall perform dynamic pile testing utilizing the services of an independent dynamic pile testing consultant and qualified personnel. An engineer with a minimum of 3 years dynamic pile testing and analysis experience or who has achieved Basic or better certification under the High-Strain Dynamic Pile Testing Examination and Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving

monitoring. An engineer with a minimum of 5 years dynamic pile testing and analysis experience or who has achieved Advanced or better certification under the High-Strain Dynamic Pile Testing Examination and Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving modeling and pile driving analyses.

2.0 Execution.

2.1 Pile Driving Modeling. The contractor shall perform preconstruction wave equation analyses and prepare a summary report of the results. The wave equation analyses shall be used to assess the ability of all proposed pile driving systems to install piles to the required capacity and the desired penetration depth within allowable driving stresses. The report shall include a drivability graph relating pile capacity, blow count and driving stresses to depth. The report shall include a bearing graph relating the pile capacity to the pile driving resistance. The bearing graph shall indicate blow count versus capacity and stroke. The report shall also contain a constant capacity analysis or inspectors chart to assist the engineer in determining the required driving resistance at other field observed strokes. The contractor shall perform wave equation analyses in accordance with [section 4.0](#) of this special provision. Acceptability of the wave equation report and the adequacy of analyses will be determined by the engineer.

2.1.1 Approval by the engineer of the proposed pile driving system will be based upon the wave equation analyses indicating that the proposed system can develop the specified pile capacity at a pile driving rate of 2 to 10 blows per inch at the end of driving, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. The contractor shall provide preliminary pile driving criteria based on wave equation analyses and any anticipated capacity changes after driving, set-up or relaxation, subject to revision based upon dynamic pile testing field measurements

2.1.2 If any changes or modifications are made to the approved pile driving system, additional wave equation analyses in accordance with [section 2.1](#) of this special provision shall be required.

2.2 High-Strain Dynamic Pile Testing.

2.2.1 The contractor shall perform dynamic pile testing at the locations and frequency required in accordance with [section 4.0](#) of this special provision.

2.2.2 Dynamic pile testing involves monitoring the response of a pile subjected to heavy impact applied by the pile hammer at the pile head. The testing shall provide information on the driving stresses, pile capacity, structural integrity and hammer efficiency.

2.2.3 The contractor shall engage an independent dynamic pile testing consultant and qualified personnel in accordance with [section 1.5](#) of this special provision. Prior to testing, the engineer will review and approve the proposed independent dynamic pile testing consultant, the experience and qualifications of assigned personnel, details of the method of testing, a list of equipment, and the method of analysis of test results. The contractor shall provide all available details of the subsurface conditions, pile dimensions and properties, and pile driving systems to the independent dynamic pile testing consultant.

2.2.4 All field testing and measurements shall be made in the presence of the engineer.

2.3 Field Testing.

JOB SPECIAL PROVISIONS (BRIDGE)

2.3.1 Equipment. Dynamic pile testing field measurements shall be carried out using approved equipment, software and recording equipment. The data collected at the end of initial driving and the beginning of restrike shall be analyzed using approved signal matching techniques and software.

2.3.2 Monitoring during driving. During pile driving, piles shall be instrumented and monitored with testing equipment satisfying the requirements of [section 1.3](#) of this special provision.

2.3.2.1 The contractor shall install two sets of strain transducers and accelerometers near the top of each pile to be tested, and shall use a compatible measuring and recording system to record the data during driving.

2.3.2.2 The equipment required to be attached to the pile shall be appropriately positioned and fixed to the approval of the engineer.

2.3.2.3 The hammer and all site equipment used shall be capable of delivering an impact force sufficient to mobilize the specified pile capacity indicated in [section 4.0](#) of this special provision without damaging the pile.

2.3.2.4 The testing equipment shall monitor pile stresses during driving to prevent pile damage and ensure pile integrity and capacity. If the testing equipment indicates overstressing or damage to the pile, the contractor shall immediately discontinue driving and notify the engineer.

2.3.2.5 If the testing equipment determines that pile stresses during driving exceed acceptable levels, a new pile driving system, modifications to existing system or new pile installation procedures shall be proposed by the contractor. Approval by the engineer of any proposed changes to the pile driving system or pile installation procedures will be based upon the results of additional wave equation analyses in accordance with [section 2.1.2](#) of this special provision.

2.3.3 Preparation of the Pile Head. The preparation of the pile head for the application of dynamic test load shall involve, where appropriate, trimming the head, cleaning, and building up the pile using materials that shall, at the time of testing, safely withstand the impact stresses. The impact surface shall be flat and at right angles to the pile axis.

2.3.4 Dynamic Measurement and Analysis. Monitoring of pile driving shall begin when pile driving begins. The data shall be recorded and processed immediately in the field by the pile driving monitoring equipment and software. Unless monitoring indicates that additional driving will damage the pile, pile driving and monitoring shall continue until both the specified pile tip elevation and the specified pile capacity are reached. For each pile tested, pile driving analysis using signal matching techniques shall be performed for a selected blow at the end of driving to determine the relative capacities from end bearing and skin friction along the pile.

2.3.4.1 Restrike tests shall be performed at the frequency indicated in [section 4.0](#) of this special provision. The time interval between end of initial driving and beginning of restrike shall be in accordance with [section 4.0](#) of this special provision. During restrike, the pile shall be instrumented and monitored similar to during initial driving. For each restrike test, pile driving analysis using signal matching techniques shall be performed for a selected blow from the beginning of restrike to determine the relative capacities from end bearing and skin friction along the pile.

2.3.4.2 The restrike test shall be performed with a warmed up hammer and shall consist of striking the pile for 20 blows or until the pile penetrates an additional 3 inches whichever occurs first unless testing equipment indicates overstressing or damage to the pile. If such overstressing or damage to the pile is indicated, the contractor shall immediately discontinue driving and notify the engineer. In the event initial restrike testing indicates a pile capacity below the specified capacity additional driving may be required as directed by the engineer.

2.3.4.3 The engineer may request use of pile driving monitoring equipment and software on additional piles if inconclusive results are obtained or unusual driving conditions are encountered.

2.3.4.4 Pile bearing capacity and integrity shall be evaluated based on the standard procedure used in practice.

2.3.4.5 Tabular records of the dynamic pile testing field measurements obtained at the end of initial driving and at the beginning of restrike shall be immediately provided to the engineer by the contractor.

2.3.5 Results.

2.3.5.1 Preliminary Reports. The contractor shall prepare a preliminary report for each pile tested for review by the engineer. Each report shall contain tabular as well as graphical presentation of the dynamic test results versus depth. Each report shall also indicate the pile driving criteria for the additional piles to be installed at the substructure unit of the pile tested. Each preliminary report shall include the following:

- (a) The maximum force applied to the pile head.
- (b) The maximum pile head velocity.
- (c) The maximum energy imparted to the pile.
- (d) The assumed soil damping factor and wave speed.
- (e) Static capacity estimate.
- (f) The maximum compressive and tensile forces in the pile .
- (g) Pile integrity.
- (h) Blows per inch.
- (i) Stroke.
- (j) Summary results of pile driving analysis from selected blow analyzed using signal matching techniques and software.

2.3.5.2 Summary Report. The contractor shall prepare a summary report of all piles tested for review by the engineer. The report shall include the results of hammer performance, pile driving stresses, and pile capacity during initial driving and restrike for all piles tested. The report shall also include the following:

JOB SPECIAL PROVISIONS (BRIDGE)

- (a) Date of testing and date of pile installation.
- (b) Pile identification number and location.
- (c) All information given in preliminary reports as follows:
 - (1) Length of pile below commencing surface.
 - (2) Total length of pile, including projection above commencing surface at time of test.
 - (3) Length of pile from instrumentation position to tip.
- (d) Hammer type, drop, and other relevant details.
- (e) Blow selected for signal matching analysis.
- (f) Maximum compressive and tensile stresses, stroke, and capacity versus penetration depth.
- (g) Temporary compression.
- (h) Pile integrity and location of damage, if any.
- (i) Force/velocity versus time trace.
- (j) Force/velocity match curve.
- (k) Resistance distribution along the pile.
- (l) Detailed graphical and tabular results from blow analyzed using signal matching techniques and software.

3.0 Schedule of Contract Submittals.

Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
1	Proposed independent dynamic pile testing consultant, and a listing of assigned personnel and their experience and qualifications.	DOCS	45 Before	Start of Pile Driving Monitoring	No
2	Details of the components, method of testing, pile driving equipment and materials to be used, and the results of wave equations analyses.	DOCS	15 Before	Start of Pile Driving Monitoring	No

JOB SPECIAL PROVISIONS (BRIDGE)

Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
3	Two copies of each Preliminary Report as defined in section 2.3.5.1 of this special provision	DOCS	3 After	Completion of Each Field Test	No
4	Four copies of the Summary Report as defined in section 2.3.5.2 of this special provision	DOCS	7 After	Completion of All Field Tests	No

4.0 High-Strain Dynamic Pile Testing Specification.

Item	Requirement
Wave Equation Analysis	Minimum of 1 and sufficient additional analyses as needed to define performance for all combinations of piles, driving systems and subsurface conditions anticipated.
Dynamic Testing Pile Capacity	Nominal Axial Pile Compressive Resistance or 2.25 times the Design Bearing shown on the plans or as required by engineer
End of Initial Driving Test Frequency	As shown in the contract plans
Restrike Test Frequency	Restrike testing will not be required on this job
Time Interval between End of Initial Driving and Restrike	Minimum of 7 days or as required by the engineer
Pile Driving Analyses using Signal Matching Techniques	For each End of Initial Driving Test and each Restrike Test

5.0 Method of Measurement. Dynamic pile testing will be measured per each.

6.0 Basis of Payment. Payment for the above described work, including all material, equipment, tools, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for “Dynamic Pile Testing”.

D. DEWATERING

1.0 Description. This provision covers dewatering the site as necessary to provide a suitable condition for the construction of the culvert, as approved by the engineer. This work shall be done in accordance with Sec 206 and this specification.

2.0 Construction Requirements. Dewatering shall provide a dry work area suitable to construct the culvert within specifications, as approved by the engineer. Typical dewatering methods consist of, but are not limited to, construction of cofferdams, seal courses, over excavation, well point systems, dewatering and drainage diversion. Any dewatering method utilized shall conform to all environmental laws and regulations.

3.0 Method of Measurement. No measurement will be made.

JOB SPECIAL PROVISIONS (BRIDGE)

4.0 Basis of Payment. Payment for dewatering will be made regardless of which dewatering means is utilized. No payment will be made if the work area is not maintained in a dewatered state, as approved by the engineer. The lump sum payment for dewatering will be full compensation and no time extensions will be made regardless of which means and methods are utilized by the contractor.