Project Manual

City of New Haven, Missouri

Miller Street Reconstruction, Phase 1 & 2

Federal Project Number: STP-5401(628) & STP-5401(632)
Cochran Project Number: SC10-221 & SC10-224

February, 2011

Presented to:

City of New Haven, Missouri
Mr. Steve Roth, City Administrator

STATE OF MISSOURI
TARY TODD
NUMBER
E-24182
REGISTERED PROFESSIONAL ENGINEER

2/24/11
Date

Tary Todd, P.E. #E-24182
State of Missouri
Registered Professional Engineer for Cochran

COCHRAN

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INVITATION FOR BIDS

Sealed bids for the City of New Haven Miller Street Improvements Phase 1 & 2 (hereinafter "Project") will be received by New Haven City Hall, 101 Front Street, New Haven, Missouri 63068, until 2:00 p.m. local time, on Tuesday, December 6, 2011 at which time they will be publicly opened and read aloud.

The Scope of Work includes street improvements to Miller Street within the City of New Haven and provides for asphalt pavement reconstruction, concrete sidewalks, storm sewer installation, new water and gas distribution systems, pavement striping, traffic control and other incidental items and work described in the Project Manual, or reasonably inferable therefrom. The City of New Haven anticipates issuing the notice to proceed in March 2012.

Bid packages will be available Monday, October 24, 2011 and may be obtained from the Fenton office of Cochran located at 737 Rudder Road, Fenton, MO 63026, upon payment of a non-refundable fee of $100.00 per set. Make checks payable to Cochran. For directions, please call 314-842-4033.

A bid security in the amount of five percent (5%) of the bid amount must accompany each bid, in accordance with the Instructions to Bidders.

For a contractor to be awarded this project the contractor must have a fully responsive contractor questionnaire on file with the Missouri Highway and Transportation Commission at least 7 days prior to the bid opening date.

The wage rates applicable to this project have been predetermined as required by law and are set forth in this specification. When Federal wage rates are applicable and included, this contract is subject to the "Work Hours Act of 1962", (P.L. 87-581: 76 Stat. 357) and implementing regulations. When state and federal wage rates are both required the higher of the two for each job classification shall be used.

Effective January 1, 2009 and pursuant to RSMo 285.530 (1), No business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri. The successful bidder must submit a sworn affidavit and documentation affirming the business entity's enrollment and participation in the federal work authorization program and that all of its employees working for the contracted services are not illegal immigrants.

Upon signing the contract, the successful contractor and any subcontractor performing the work shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for their on-site employees.

The City of New Haven, Missouri hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

The DBE Contract Goal for both projects is 16% individually and DBE firms must be certified by MoDOT to attain credit towards this contract goal. The On the Job Trainee goal for both projects is 0%.

THE OWNER INTENDS TO AWARD THE CONTRACT TO THE MOST RESPONSIVE, RESPONSIBLE BIDDER SUBMITTING THE LOWEST BID. THE OWNER RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS, AND TO WAIVE ANY IRREGULARITIES IN THE BEST INTEREST OF THE OWNER WITH MODOT'S CONSENT.

INSTRUCTIONS TO BIDDERS

ARTICLE 1

DEFINITIONS

1.1 **Bidding Documents** include the Invitation to Bid, Instructions to Bidders, the Bid Form and the proposed Contract Documents including any Addenda issued prior to receipt of Bids. The **Contract Documents** proposed for the Work consists of the Owner-Contractor Agreement, State Wage Determination, Non-Collusion Affidavit, Performance and Payment Bond, the Specifications, the Drawings, the Construction Schedule, all Addenda, and all Modifications.

1.2 All definitions set forth in the General Conditions of Owner-Contractor Agreement or in other Contract Documents are applicable to the Bidding Documents.

1.3 **Addenda** are written or graphic instruments issued prior to the execution of the Owner-Contractor Agreement, which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

1.4 A **Bid** is a complete and properly signed proposal to do the Work, or a designated portion thereof, for the sums stipulated therein, submitted in accordance with the Bidding Documents.

1.5 The **Base Bid** is the sum stated in the bid for which the bidder offers to perform the Work described in the Bidding Documents as the base to which work may be added or from which work may be deleted for sums stated in alternate bids.

1.6 An **Alternate Bid** is an amount stated in the bid to be considered in addition to the Base Bid if the corresponding Change in the Work, as described in the Bidding Documents, is accepted.

1.7 A **Unit Price** is an amount stated in the bid as a price per unit of measurement for materials or services as described in the Bidding Documents or in the proposed Contract Documents.

1.8 A **Bidder** is a person or entity who submits a bid.

1.9 A **Sub-Bidder** is a person or entity who submits a bid to a bidder for materials or labor for a portion of the Work.

ARTICLE 2

BIDDER'S REPRESENTATIONS

2.1 Each bidder by making his bid represents and warrants that:

2.1.1 He has read and understands the Bidding Documents and his bid is made in accordance therewith.

2.1.2 He has visited and carefully examined the site of the Work, and has familiarized himself with and satisfied himself of the following:

1. the nature and location of the Work;

2. the character, quality and quantity of materials to be encountered;

3. the character and quantity of equipment and facilities needed prior to and during performance of the Work;

4. the local conditions under which the Work is to be performed, including the availability of necessary labor;

5. the requirements for maintaining existing facilities in continuous service, if necessary or required.

2.1.3 He has correlated his examination and observations with the requirements of the proposed Contract Documents.

2.1.4 His bid is based upon the materials, products, systems and equipment required by the Bidding Documents.

ARTICLE 3

BIDDING DOCUMENTS

3.1 COPIES

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Invitation to Bid in the number and for the deposit sum, if any, stated therein.

3.1.2 Each bidder shall use a complete set of Bidding Documents in preparing his bid.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 Bidders shall promptly notify the Owner in writing of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

3.2.2 Bidders may request clarification or interpretation of the Bidding Documents by making a written request which shall reach the Owner at least seven (7) days prior to the date for receipt of bids.

3.2.3 Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding on the Owner, and bidders shall not rely upon such interpretations, corrections and changes.

3.2.4 If the Owner determines that clarification of the terms and conditions of the Bidding Documents is necessary, an Addendum will be made available to all bidders setting forth such clarification.

3.3 SUBSTITUTIONS

3.3.1 The materials, products, systems and equipment described in the Bidding Documents establish a minimum standard of required function, dimension, appearance and quality which must be met by any proposed substitution.

3.3.2 No substitution of the materials, products, systems and equipment described in the Bidding Documents will be considered prior to receipt of bids unless written request for approval has been received by the Owner at least ten (10) days prior to the date for receipt of bids. Each such request shall include the name of the material, product, system or equipment for which substitution will be made and a complete description of the proposed substitute including drawings, costs, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, products, systems or equipment or other work that incorporation of the substitute would require shall be included in each such request. The Owner, in its sole discretion, may approve or disapprove the proposed substitute.

3.3.3 If the Owner approves any proposed substitution prior to receipt of bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

3.3.4 No substitutions will be considered after the Contract is awarded unless specifically provided in the Contract Documents.

3.4 ADDENDA

3.4.1 Addenda will be mailed or delivered to all who are known by the Owner to have received a complete set of Bidding Documents.

3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3.4.3 Prior to submitting his bid, each bidder shall ascertain that he has received all Addenda issued, and he shall acknowledge receipt of all such Addenda in his bid.

ARTICLE 4

BIDDING PROCEDURE

4.1 FORM AND STYLE OF BIDS

4.1.1 Attached to the Contract Documents is a separate, complete set of Bid Forms to be signed and submitted as the Bidder's formal bid. To be considered, a bid shall be properly completed using these Bid Forms.

4.1.2 All blanks on the Bid Form shall be filled in by typewriter or manually in ink.

4.1.3 Where so indicated by the make-up of the Bid Form, dollar amounts shall be expressed in both words and figures and in case of discrepancy between the two, the amount written in words shall govern.

4.1.4 Any interlineation, alteration or erasure must be initialed by the signer of the bid.

4.1.5 Where two or more bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of his bid security, state his refusal to accept award of less than the combination of bids if he so stipulates. The Bidder shall make no additional stipulations on the Bid Form nor qualify his bid in any other manner.

4.1.6 Each copy of the bid shall include the legal name of the Bidder and a statement that the Bidder is a sole proprietor, a partnership, a corporation, or some other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the bidder to a contract. A bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

4.1.7 The Owner shall not be responsible in any way for any costs or expenses related to the preparation or submission of any bid.

4.2 BID SECURITY

4.2.1 Each bid shall be accompanied by a certified check or a satisfactory bid bond executed by the bidder and an acceptable Surety company, naming the Owner as Obligee, in the amount of not less than five percent (5%) of the Base bid plus the greatest of the Alternate bids ("Bid Security"). If the bidder fails to enter into a Contract with the Owner on the terms stated in his bid, or fails to furnish Performance and Payment Bonds as required by the Contract Documents, the amount of the Bid Security shall be forfeited to the Owner as liquidated damages, not as a penalty.

4.2.2 The Owner will have the right to retain the Bid Security of bidders to whom an award is being considered until either, (a) the Owner-Contractor Agreement has been executed and the Performance and Payment Bonds have been furnished, (b) the specified time has elapsed so that bids may be withdrawn, or (c) all bids have been rejected.

4.3 SUBMISSION OF BIDS

4.3.1 Bidders must complete and submit with their bids the "Anti-Collusion Statement" included with the Bid Form and 5% Bid Security. Bidders shall also complete and submit the following:

1. a designation of the Work, item by item, including the related dollar amount and total dollar amount, to be performed by the bidder with his own forces;

2. the proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the Work;

3. "Subcontractor Approval Form" for each and every proposed Subcontractor, or other persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

4.3.2 All copies of the bid, the Bid Security and any other documents required to be submitted with the bid shall be enclosed in a sealed envelope identified "SEALED BID ENCLOSED" on the face thereof. The envelope shall be addressed and delivered to the Owner and shall be identified with the project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

4.3.3 Bids shall be deposited at the designated location prior to the time and date for receipt of bids indicated in the Invitation to Bid or any extension thereof made by an Addendum. Bids received after the time and date for receipt of bids will be returned unopened.

4.3.4 The bidder shall assume full responsibility for timely delivery at the location designated for receipt of bids.

4.4 MODIFICATION OR WITHDRAWAL OF BID

4.4.1 A bid may not be modified, withdrawn or cancelled by the bidder within ninety (90) days following the time and date designated for the receipt of bids, and each bidder so agrees in submitting his bid.

4.4.2 Prior to the time and date designated for receipt of bids, any bid submitted may be modified or withdrawn by notice to the party receiving bids at the place designated for receipt of bids. Such notice shall be in writing over the signature of the bidder.

4.4.3 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids provided that they are then fully in conformance with these Instructions to Bidders.

4.4.4 The amount of the Bid Security shall be in an amount sufficient for the bid as modified or resubmitted.

ARTICLE 5

CONSIDERATION OF BIDS

5.1 OPENING OF BIDS

5.1.1 Unless stated otherwise in the Invitation to Bid, the properly identified bids received on time will be opened publicly and will be read aloud.

5.2 REJECTION OF BIDS

5.2.1 The Owner shall have the right to reject any or all bids, to reject a bid not accompanied by the Bid Security or by other data required by the Bidding Documents, to reject a bid which is in any way incomplete or irregular, and to rebid the Work at a later date, with MoDOT concurrence, if all bids are rejected.

5.3 ACCEPTANCE OF BID (AWARD)

5.3.1 It is the intent of the Owner to award the Contract to the lowest responsive, responsible bidder provided the bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner will obtain concurrence of award from MoDOT prior to awarding the Contract.

5.3.2 The Owner shall have the right to accept alternates and to determine the low bidder on the basis of the sum of the base bid and the alternates accepted. Alternates shall be accepted in the order established in the Bid Form Proposal.

ARTICLE 6

POST BID INFORMATION

6.1 SUBMITTALS

6.1.1 The bidder will be required to establish, to the satisfaction of the Owner, the reliability and responsibility of the persons or entities proposed to furnish and perform the Work.

6.1.2 Prior to the award of the Contract, the Owner will notify the bidder in writing if the Owner, after due investigation, objects to any such person or entity proposed by the bidder pursuant to Subparagraph 4.3.1 above. If the Owner objects to any such proposed person or entity, the bidder may, at his option, (1) withdraw his bid, or (2) submit an acceptable substitute person or entity with no adjustment in his bid price.

6.1.3 Persons and entities proposed by the bidder and to whom the Owner has made no objection under the provisions of Subparagraph 6.1.2 must be used on the Work for which they were proposed and shall not be changed except with the prior written consent of the Owner.

ARTICLE 7

AWARD OF CONTRACT

7.1 Following receipt, to the satisfaction of the Owner, of all information required under Paragraph 6.1 above, the Owner shall mail to the successful bidder the Notice of Award of the Contract.

7.2 Within five (5) working days from the date of receipt of the Notice of Award, the successful bidder shall execute and deliver to the Owner the Contract Documents, and shall furnish the Bonds required by Paragraph 8.1 below and the Certificates of Insurance required by Subparagraph 10.1.3 of the General Conditions. In the event the successful bidder fails to execute and deliver the Contract Documents, the Bonds and the Certificates of Insurance as aforesaid, the Owner may, at its option, consider the bidder in default and award the Contract to another bidder, in which case the Bid Security of the defaulting bidder shall be forfeited to the Owner as liquidated damages, and not as a penalty.

7.3 The Contract, when executed, shall be deemed to include the entire agreement between the parties thereto, and the Bidder shall not claim any modification thereof resulting from any claimed representation or promise made at any time prior thereto by any officer, agency or employee of the Owner or by any other person.

ARTICLE 8

PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

8.1 BOND REQUIREMENTS

8.1.1 The successful bidder shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of the Contract, and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the Contract Sum as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The Surety shall be a company licensed to do business in the State of Missouri and shall be acceptable to the Owner. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments, however if combined into one the amount shall be for two hundred percent (200%) of the Contract Sum.

8.2 TIME OF DELIVERY AND FORM OF BONDS

8.2.1 The bidder shall deliver the required bonds to the Owner not later than the date of execution of the Owner-Contractor Agreement, or if the Work is to be commenced prior thereto in response to a Letter of Intent, the bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

8.2.2 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.

ARTICLE 9

FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

9.1 FORM TO BE USED

9.1.1 Unless otherwise required in the Bidding Documents, the Owner-Contractor Agreement for the Work shall be in the form attached hereto.

ARTICLE 10

BID FORM PROPOSAL

PROJECT NAME Miller Street Improvements Phase 1 & 2 BID TIME_____

PROJECT LOCATION New Haven, Missouri BID DATE_____

BIDDER NAME_____

TO: _____ ("Owner")

In response to the Invitation for Bids for Project No. STP-5401(628) and STP-5401(632), and in accordance with the Instructions to Bidders and other Bidding Documents, the undersigned Bidder declares that he has had an opportunity to examine the site of the Work and has carefully examined the Contract Documents therefore, including the Addenda identified below, and on the basis thereof, and being fully familiar with the local conditions affecting the Work, and upon written notice of award of contract, acknowledges and agrees to provide all labor, material, equipment, tools, management and supervision, safety and technical services, insurance, bonds and incidentals necessary or required for the faithful performance of the Contract Work in accordance with the above-referenced documents in a safe, timely and workmanlike manner for the following Base Bid Price:

PHASE 1 BASE BID: ($_____)

_____ Dollars
(Amount in Words)

PHASE 2 BASE BID: ($_____)

_____ Dollars
(Amount in Words)

TOTAL PHASE 1 + 2 BASE BID: ($_____)

_____ **Dollars**
(Amount in Words)

The project will be awarded to the Contractor that submits a responsive bid with the lowest TOTAL PHASE 1 + 2 BASE BID Amount.

ACCEPTANCE FOR PROVISION FOR ASPHALT CEMENT PRICE INDEX Bidders have the option to accept the provision for Asphalt Cement Price Index for this project as stated in Addendum #1. The bidder must mark the box below if they choose to accept the provision. No price adjustments will be made, due to asphalt price changes, for bidders who do not accept this provision.

☐ Asphalt Cement

The Base Bid amounts for each project are more fully itemized as follows:

ITEMIZED BID FORM – MILLER STREET IMPROVEMENTS – PHASE 1

Bid No.	Description	Unit	Quantity	Unit Cost	Extended Cost	DBE Item *
1500.1	Mobilization	LS	1			
1500.2	Channelizers	EA	100			
2200.1	Removal of Improvements	LS	1			
2300.1	Subgrade Repair	CY	100			
2300.2	Rock Excavation	CY	100			
2300.3	Type 5 Aggregate for Base (4" Thick)	SY	3,902			
2300.4	Type 2 Rock Blanket with Geotextile Fabric (2' Thick)	CY	80			
2350.1	Silt Fence	LF	250			
2350.2	Inlet Check	EA	13			
4000.1	Asphalt Pavement (BP-1) (Surface Course) (2") (Echelon Paving)	TON	416			
4000.2	Asphalt Pavement (Bituminous Base) (Base Course) (3" Lifts)	TON	1,248			
4000.3	Asphalt Driveway, 5" (BP-1)	SF	2,350			
5000.2	Concrete Approach (7" Thick)	SF	2,224			
5000.3	Concrete Curb and Gutter	LF	2,044			
5000.5	Concrete Pavement (8" Thick)	SF	813			
				Sub-total Roadway Items		
3000.1a	Storm Sewer (15" RCP)	LF	155			
3000.1c	Storm Sewer (24" RCP)	LF	794			
3000.1d	Storm Sewer (72" RCP)	LF	53			
3000.2a	Storm Sewer (24" RCP Flared End Section)	EA	1			
3000.2b	Storm Sewer (72" RCP Flared End Section)	EA	2			
3000.3	Storm Sewer Structure (Curb Inlet)	EA	10			
3000.5	Storm Sewer Structure (Side Intake Curb Inlet)	EA	3			
3000.6	Storm Sewer Structure (Manhole)	EA	1			
3000.7	Storm Sewer Inlet Grate (Curved Vane)	EA	2			
3000.8	Manhole Frame & Cover (with gasket seal)	EA	6			
3100.1	Water Service Connections	EA	18			
3150.1	Water Main (8" Fusible PE, SDR 9)	LF	1,197			
3150.2	Water Valves (8" Gate)	EA	8			
3150.3	New Fire Hydrant Assembly	EA	3			
3150.5	Pressure Reducing Valve and Vault	EA	1			
3300.1	Gas Service Connections	EA	15			
3300.2	Gas Main (2" PE 2406, SDR 11)	LF	554			
3300.3	Gas Main (4" Epoxy Coated Steel)	LF	342			
3300.4	Gas Valves (2" Shutoff)	EA	1			
3300.5	Gas Valves (4" Shutoff)	EA	1			
3300.7	Gas Valves (4" Stopple)	EA	1			
				Sub-total Utilities Items		

***Contractor is required to indicate with a " * " which line items will be performed by the DBE(s).**

Continued on next page

ITEMIZED BID FORM – MILLER STREET IMPROVEMENTS – PHASE 1 (Continued)

Bid No.	Description	Unit	Quantity	Unit Cost	Extended Cost	DBE Item *
1500.3	"Road Work Ahead" Sign (W20-1)	EA	2			
1500.4	"End Road Work" Sign (G20-2)	EA	2			
1600.1	Changeable Message Sign (Contractor Retained)	EA	2			
3200.1	"Bike" Sign (W11-1)	EA	2			
3200.2	"Share the Road" Sign (W16-1)	EA	2			
6000.1	Pavement Marking 4" - White & Yellow	LF	2,317			
6000.2	Pavement Marking 12" - White	LF	65			
6000.3	Pavement Marking 24" - White	LF	63			
				Sub-total Signing/Striping/Signals Items		
3200.5	Pedestrian Fence	LF	24			
5000.1	Concrete Sidewalk(4" Thick)	SF	5,010			
5000.6	Detectable Warning Devices	SF	20			
				Sub-total Bicycle/Pedestrian Items		
9000.1	Sodding	SY	978			
				Sub-total Landscaping/Streetscaping Items		
				Project Total =		

***Contractor is required to indicate with a " * " which line items will be performed by the DBE(s).**

ITEMIZED BID FORM – MILLER STREET IMPROVEMENTS – PHASE 2

Bid No.	Description	Unit	Quantity	Unit Cost	Extended Cost	DBE Item *
1500.1	Mobilization	LS	1			
1500.2	Channelizers	EA	100			
2200.1	Removal of Improvements	LS	1			
2300.1	Subgrade Repair	CY	100			
2300.2	Rock Excavation	CY	100			
2300.3	Type 5 Aggregate for Base (4" Thick)	SY	5,224			
2350.1	Silt Fence	LF	250			
2350.2	Inlet Check	EA	12			
4000.1	Asphalt Pavement (BP-1) (Surface Course) (2") (Echelon Paving)	TON	551			
4000.2	Asphalt Pavement (Bituminous Base) (Base Course) (3" Lifts)	TON	1,653			
4000.3	Asphalt Driveway, 5" (BP-1)	SF	2,930			
5000.2	Concrete Approach (7" Thick)	SF	6,118			
5000.3	Concrete Curb and Gutter	LF	2,722			
5000.4	Concrete Vertical Curb	LF	225			
5000.5	Concrete Pavement (8" Thick)	SF	1,000			
				Sub-total Roadway Items		
3000.1a	Storm Sewer (15" RCP)	LF	204			
3000.1b	Storm Sewer (18" RCP)	LF	837			
3000.3	Storm Sewer Structure (Curb Inlet)	EA	10			
3000.8	Manhole Frame & Cover (with gasket seal)	EA	3			
3100.1	Water Service Connections	EA	19			
3150.1	Water Main (8" Fusible PE, SDR 9)	LF	1,351			
3150.2	Water Valves (8" Gate)	EA	4			
3150.3	New Fire Hydrant Assembly	EA	1			
3150.4	Relocate Fire Hydrant Assembly	EA	4			
3300.1	Gas Service Connections	EA	15			
3300.2	Gas Main (2" PE 2406, SDR 11)	LF	1,313			
3300.4	Gas Valves (2" Shutoff)	EA	2			
3300.6	Gas Valves (2" Stopple)	EA	1			
				Sub-total Utilities Items		

***Contractor is required to indicate with a " * " which line items will be performed by the DBE(s).**

Continued on next page

ITEMIZED BID FORM – MILLER STREET IMPROVEMENTS – PHASE 2 (Continued)

Bid No.	Description	Unit	Quantity	Unit Cost	Extended Cost	DBE Item *
1500.3	"Road Work Ahead" Sign (W20-1)	EA	2			
1500.4	"End Road Work" Sign (G20-2)	EA	2			
1600.2	Changeable Message Sign (Owner Retained)	EA	2			
3200.1	"Bike" Sign (W11-1)	EA	2			
3200.2	"Share the Road" Sign (W16-1)	EA	2			
3200.3	"Crosswalk" Sign (W11-2)	EA	2			
3200.4	"Ahead" Sign (W16-9p)	EA	2			
6000.1	Pavement Marking 4" - White & Yellow	LF	5,246			
6000.2	Pavement Marking 12" - White	LF	322			
6000.3	Pavement Marking 24" - White	LF	55			
6000.4	Pavement Marking 36" x 120" For Midblock Crosswalk - White	EA	5			
				Sub-total Signing/Striping/Signals Items		
5000.1	Concrete Sidewalk (4" Thick)	SF	9,062			
5000.6	Detectable Warning Devices	SF	115			
				Sub-total Bicycle/Pedestrian Items		
9000.1	Sodding	SY	1,011			
				Sub-total Landscaping/Streetscaping Items		
				Project Total =		

***Contractor is required to indicate with a " * " which line items will be performed by the DBE(s).**

By submitting this Bid, the Bidder agrees to waive any claim it has or may have against the Owner or Engineer, and their respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid(s).

Addenda

The undersigned Bidder acknowledges the following Addenda, if any:

Addendum No.: ___ dated _____ pages _____

Addendum No.: ___ dated _____ pages _____

Addendum No.: ___ dated _____ pages _____

Acknowledgements

Bidder understands that Owner reserves the right to reject any and all bids and to waive any informality in the bidding.

The Bidder agrees that this Bid shall be valid and may not be withdrawn for a period of ninety (90) days after the scheduled closing time for receiving bids.

Within five (5) working days after receipt of written notice of award of contract, Bidder will execute and deliver to the Owner the formal Owner-Contractor Agreement included in the Bid Package, and deliver to the Owner the surety bond or bonds as required by the Contract Documents.

The Bid Security attached hereto, in the sum of _____ Dollars ($_____) shall become the property of the Owner in the event that the Owner-Contractor Agreement and the Bond(s) are not executed and delivered to the Owner within the time set forth above, as liquidated damages (and not as a penalty) for the delay and additional expense to the Owner caused thereby.

_____
(Signature)

_____
(Print Name)

_____
(Company Name)

_____
(Address)

_____
(Telephone Number)

(Seal - If bid by Corporation)

SUBCONTRACTOR APPROVAL FORM

This report must accompany and be part of the sealed Bid Proposal.

1. Name of Bidder: _____

2. Address Bidder: _____

_____
City State Zip Phone

3. The above-named Bidder intends to subcontract for materials, services, supplies, specialty contractors, etc., in the following fashion:

Names and Addresses of Subcontractor Which the Contractor Anticipates Utilizing	Nature of Participation	$ Value of Subcontractor

A. Total of Above _____

B. Total Bid Amount _____

Subcontractor Utilization as a % of Total Bid Amount: (A/B x 100) _____

_____
Name-Authorized Officer of Bidder

_____
Signature-Office Bidder

_____
Date

ANTI-COLLUSION STATEMENT

STATE OF MISSOURI

CITY/COUNTY OF_____

_____

_____being first duly sworn, deposes and says that he is

_____
Title of Person Signing

of _____

_____
Name of Bidder

that all statements made and facts set out in the proposal for the above project are true and correct; and the bidder (The person, firm, association, or corporation making said bid) has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with said bid or any contract which may result from its acceptance.

Affiant further certifies that bidder is not financially interested in, or financially affiliated with, any other bidder for the above project.

BY_____

BY_____

BY_____

SWORN to before me this _____ day of _____ 20 ___.

_____
Notary Public

My Commission Expires _____

SUBCONTRACTOR CERTIFICATION REGARDING AFFIRMATIVE ACTION

Project: _____

Job No. _____

Route: _____

County: _____

Certification Regarding Affirmative Action and Equal Opportunity: The bidder (prospective prime contractor) or proposed subcontractor certifies:

1. Affirmative Action Program: That it has developed and has on file at each of its establishments affirmative action programs pursuant to 41 CFR Part 60-2.

2. Equal Opportunity Clause: That it has participated in a previous contract or subcontract subject to the equal opportunity clause set forth in 41 CFR part 69-1.4 and executive order no. 11246.

3. Compliance Reports: That it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance Programs and his designate, or the Equal Employment Opportunity Commission, all reports due under the applicable filing requirements contained in 41 CFR Part 60-1.

If the test of the certification above is incorrect, the bidder or subcontractor making the certification shall correct it below:

_____

_____

_____

NOTE: This certification applies to and must be executed by each bidder (prospective prime contractor) or proposed subcontractor if its proposed contract or subcontract on this project will equal or exceed $10,000 or that contractor or subcontractor has contracts or subcontracts on federally assisted project in any 12-month period which have or can reasonably be expected to have, an aggregate total value exceeding $10,000 41 CFR Part 60-1.5(a)(1). It is a duty and contract obligation of the prime contractor to insure that each of its subcontractors, which meet this criterion, executes and submits to the commission this certification also.

_____
Company

By: _____

Date: _____

_____
Title

NOTICE TO BIDDERS REGARDING STATE IMMIGRATION LAW

Effective January 1, 2009 and pursuant to RSMo 285.530 (1), No business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

http://oa.mo.gov/purch/vendorinfo/employ.pdf
http://www.moga.mo.gov/statutes/C200-299/2850000530.HTM

Pursuant to 285.530 RSMo, the bidder must affirm its enrollment and participation in a federal work authorization program with respect to the employees proposed to work in connection with the services requested herein by:

- submitting a completed, notarized copy of WORKER ELIGIBILITY VERIFICATION AFFIDAVIT (attached),
- submitting a completed, notarized copy of the SIGNATURE AND IDENTITY OF BIDDER (attached) and,
- providing documentation affirming the bidder's enrollment and participation in a federal work authorization program (see below) with respect to the employees proposed to work in connection with the services requested herein.

E-Verify is an example of a federal work authorization program. Acceptable enrollment and participation documentation consists of completed copy of the E-Verify Memorandum of Understanding (MOU). For vendors that are not already enrolled and participating in a federal work authorization program, E-Verify is available at http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm.

The contractor understands and agrees that by signing the RFB document or contract they certify that:

- The contractor shall only utilize personnel authorized to work in the United States in accordance with applicable federal and state laws. This includes but is not limited to the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) and INA Section 274A.
- If the contractor is found to be in violation of this requirement or the applicable state, federal and local laws and regulations, and if the State of Missouri has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States, the state shall have the right to cancel the contract immediately without penalty or recourse and suspend or debar the contractor from doing business with the state.
- The contractor agrees to fully cooperate with any audit or investigation from federal, state or local law enforcement agencies.
- The contractor shall maintain enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services included herein.

SIGNATURE AND IDENTITY OF BIDDER

The undersigned states that the correct LEGAL NAME and ADDRESS of (1) the individual Bidder, (2) each partner or joint venture (whether individuals or corporations, and whether doing business under a fictitious name), or (3) the corporation (with the state in which it is incorporated) are shown below; that (if not signing with the intention of binding himself to become the responsible and sole contractor) he is the agent of, and duly authorized in writing to sign for the Bidder or Bidders; and that he is signing and executing this (as indicated in the proper spaces below) as the proposal of a

( ) sole individual ( ) partnership ( ) joint venture

( ) corporation, incorporated under laws of state of _____

Dated _____.

Name of individual, all partners, or joint ventures:	Address of each:
_____	_____
_____	_____
_____	_____
_____	_____

doing business under the name of:	Address of principal place of business in Missouri
_____	_____
(If using a fictitious name, show this name above in addition to legal names)	
_____	_____
(If a corporation, show its name above)	

ATTEST: (SEAL)

_____ _____

Secretary Title

NOTE: If the Bidder is doing business under a FICTITIOUS NAME, the Proposal shall be executed in the legal name of the individual, partners, joint ventures, or corporation, with the legal address shown, and REGISTRATION OF FICTITIOUS NAME filed with the Secretary of State, as required by Sections 417.200 to 417.230, RS Mo. If the Bidder is a CORPORATION NOT ORGANIZED UNDER THE LAWS OF MISSOURI, it shall procure a CERTIFICATE OF AUTHORITY TO DO BUSINESS IN MISSOURI, as required by Section 351.570 and following, RS Mo. A CERTIFIED COPY of such Registration of Fictitious Name or Certificate of Authority to do Business in Missouri shall be filed with the Missouri Highways and Transportation Commission, as required by the Standard specifications, Sec 102.6.6 and 102.6.7.

WORKER ELIGIBILITY VERIFICATION AFFIDAVIT

(for joint ventures, a separate affidavit is required for each business entity)

STATE OF _____)
) ss
COUNTY OF _____)

On this _____ day of _____, 20_____, before me appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be a person whose name is subscribed to this affidavit, who being by me duly sworn, deposed as follows:

My name is _____, and I am of sound mind, capable of making this affidavit, and personally certify the facts herein stated, as required by Section 285.530, RSMo, to enter into any contract agreement with the state to perform any job, task, employment, labor, personal services, or any other activity for which compensation is provided, expected, or due, including but not limited to all activities conducted by business entities:

I am the _____ of _____, and I am duly authorized, directed, and/or empowered to act officially and properly on behalf of this business entity.

I hereby affirm and warrant that the aforementioned business entity is enrolled in a federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, and the aforementioned business entity shall participate in said program with respect to all employees working in connection to work under the within state contract agreement with the Missouri Highways and Transportation Commission (MHTC). I have attached documentation to this affidavit to evidence enrollment/participation by the aforementioned business entity in a federal work authorization program, as required by Section 285.530, RSMo.

In addition, I hereby affirm and warrant that the aforementioned business entity does not and shall not knowingly employ, in connection to work under the within state contract agreement with MHTC, any alien who does not have the legal right or authorization under federal law to work in the United States, as defined in 8 U.S.C. § 1324a(h)(3).

I am aware and recognize that, unless certain contract and affidavit conditions are satisfied pursuant to Section 285.530, RSMo, the aforementioned business entity may be held liable under Sections 285.525 though 285.550, RSMo, for subcontractors that knowingly employ or continue to employ any unauthorized alien to work within the state of Missouri.

I acknowledge that I am signing this affidavit as a free act and deed of the aforementioned business entity and not under duress.

_____
Affiant Signature

Subscribed and sworn to before me this _____ day of _____, 20_____.

_____
Notary Public

My commission expires:

E-Verify

Company ID Number: _____

THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION
MEMORANDUM OF UNDERSTANDING

ARTICLE I

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Department of Homeland Security (DHS) and _____ (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). This MOU explains certain features of the E-Verify program and enumerates specific responsibilities of DHS, the Social Security Administration (SSA), and the Employer. E-Verify is a program that electronically confirms an employee's eligibility to work in the United States after completion of the Employment Eligibility Verification Form (Form I-9). For covered government contractors, E-Verify is used to verify the employment eligibility of all newly hired employees and all existing employees assigned to Federal contracts.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note). Authority for use of the E-Verify program by Federal contractors and subcontractors covered by the terms of Subpart 22.18, "Employment Eligibility Verification", of the Federal Acquisition Regulation (FAR) (hereinafter referred to in this MOU as a "Federal contractor") to verify the employment eligibility of certain employees working on Federal contracts is also found in Subpart 22.18 and in Executive Order 12989, as amended.

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF SSA

1. SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all employees verified under this MOU and the employment authorization of U.S. citizens.

2. SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.

3. SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).

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4. SSA agrees to provide a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility within 3 Federal Government work days of the initial inquiry.

5. SSA agrees to provide a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF DHS

1. After SSA verifies the accuracy of SSA records for aliens through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct, to the extent authorized by this MOU:

- Automated verification checks on alien employees by electronic means, and
- Photo verification checks (when available) on employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to provide to the Employer a manual (the E-Verify User Manual) containing instructions on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by alien employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of alien employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and Nationality Act (INA) and Federal criminal laws, and to administer Federal contracting requirements.

7. DHS agrees to provide a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

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8. DHS agrees to provide a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees and all employees who are to be verified through the system.

2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.

3. The Employer agrees to become familiar with and comply with the most recent version of the E-Verify User Manual.

4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.

   A. The Employer agrees that all Employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify, including any tutorials for Federal contractors if the Employer is a Federal contractor.

   B. Failure to complete a refresher tutorial will prevent the Employer from continued use of the program.

5. The Employer agrees to comply with current Form I-9 procedures, with two exceptions:

- If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2(b)(1)(B)) can be presented during the Form I-9 process to establish identity.) If an employee objects to the photo requirement for religious reasons, the Employer should contact E-Verify at 888-464-4218.
- If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The employer will use the photocopy to verify the photo and to assist DHS with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.

6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, including

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the obligation to comply with the antidiscrimination requirements of section 274B of the INA with respect to Form I-9 procedures, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in compliance with the terms and conditions of E-Verify; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between $550 and $1,100 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ an employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any action taken in good faith based on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures for new employees within 3 Employer business days after each employee has been hired (but after both sections 1 and 2 of the Form I-9 have been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify User Manual. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. In all cases, the Employer must use the SSA verification procedures first, and use DHS verification procedures and photo screening tool only after the SSA verification response has been given. Employers may initiate verification by notating the Form I-9 in circumstances where the employee has applied for a Social Security Number (SSN) from the SSA and is waiting to receive the SSN, provided that the Employer performs an E-Verify employment verification query using the employee's SSN as soon as the SSN becomes available.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, in support of any unlawful employment practice, or for any other use not authorized by this MOU. Employers must use E-Verify for all new employees, unless an Employer is a Federal contractor that qualifies for the exceptions described in Article II.D.1.c. Except as provided in Article II.D, the Employer will not verify selectively and will not verify employees hired before the effective date of this MOU. The Employer understands that if the Employer uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III. below) regarding tentative nonconfirmations, including notifying employees of the finding, providing written referral instructions to employees, allowing employees to contest the finding, and not taking adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

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10. The Employer agrees not to take any adverse action against an employee based upon the employee's perceived employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1(l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification system to verify work authorization, a tentative nonconfirmation, a case in continuance (indicating the need for additional time for the government to resolve a case), or the finding of a photo non-match, does not establish, and should not be interpreted as evidence, that the employee is not work authorized. In any of the cases listed above, the employee must be provided a full and fair opportunity to contest the finding, and if he or she does so, the employee may not be terminated or suffer any adverse employment consequences based upon the employee's perceived employment eligibility status (including denying, reducing, or extending work hours, delaying or preventing training, requiring an employee to work in poorer conditions, refusing to assign the employee to a Federal contract or other assignment, or otherwise subjecting an employee to any assumption that he or she is unauthorized to work) until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match or if a secondary verification is completed and a final nonconfirmation is issued, then the Employer can find the employee is not work authorized and terminate the employee's employment. Employers or employees with questions about a final nonconfirmation may call E-Verify at 1-888-464-4218 or OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

11. The Employer agrees to comply with Title VII of the Civil Rights Act of 1964 and section 274B of the INA by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify except as provided in part D below, or discharging or refusing to hire employees because they appear or sound "foreign" or have received tentative nonconfirmations. The Employer further understands that any violation of the unfair immigration-related employment practices provisions in section 274B of the INA could subject the Employer to civil penalties, back pay awards, and other sanctions, and violations of Title VII could subject the Employer to back pay awards, compensatory and punitive damages. Violations of either section 274B of the INA or Title VII may also lead to the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of employees as authorized by this MOU. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU, except for such dissemination as may be

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authorized in advance by SSA or DHS for legitimate purposes.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a(i)(1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to cooperate with DHS and SSA in their compliance monitoring and evaluation of E-Verify, including by permitting DHS and SSA, upon reasonable notice, to review Forms I-9 and other employment records and to interview it and its employees regarding the Employer's use of E-Verify, and to respond in a timely and accurate manner to DHS requests for information relating to their participation in E-Verify.

D. RESPONSIBILITIES OF FEDERAL CONTRACTORS

1. The Employer understands that if it is a Federal contractor subject to the employment verification terms in Subpart 22.18 of the FAR it must verify the employment eligibility of any "employee assigned to the contract" (as defined in FAR 22.1801) in addition to verifying the employment eligibility of all other employees required to be verified under the FAR. Once an employee has been verified through E-Verify by the Employer, the Employer may not reverify the employee through E-Verify.

a. Federal contractors not enrolled at the time of contract award: An Employer that is not enrolled in E-Verify as a Federal contractor at the time of a contract award must enroll as a Federal contractor in the E-Verify program within 30 calendar days of contract award and, within 90 days of enrollment, begin to use E-Verify to initiate verification of employment eligibility of new hires of the Employer who are working in the United States, whether or not assigned to the contract. Once the Employer begins verifying new hires, such verification of new hires must be initiated within 3 business days after the date of hire. Once enrolled in E-Verify as a Federal contractor, the Employer must initiate verification of employees assigned to the contract within 90 calendar days after the date of enrollment or within 30 days of an employee's assignment to the contract, whichever date is later.

b. Federal contractors already enrolled at the time of a contract award: Employers enrolled in E-Verify as a Federal contractor for 90 days or more at the time of a contract award must use E-Verify to initiate verification of employment eligibility for new hires of the Employer who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire. If the Employer is enrolled in E-Verify as a Federal contractor for 90 calendar days or less at the time of contract award, the Employer must, within 90 days of enrollment, begin to use E-Verify to initiate verification of new hires of the contractor who are working in the United States, whether or not assigned to the contract. Such verification of new hires must be initiated within 3 business days after the date of hire. An Employer enrolled as a Federal contractor in E-Verify must initiate verification of each employee assigned to the contract within 90 calendar days after date of contract award or within 30 days after assignment to the contract, whichever is later.

c. Institutions of higher education, State, local and tribal governments and sureties: Federal contractors that are institutions of higher education (as defined at 20 U.S.C. 1001(a)), State or local governments, governments of Federally recognized Indian tribes, or sureties

E-Verify

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performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond may choose to only verify new and existing employees assigned to the Federal contract. Such Federal contractors may, however, elect to verify all new hires, and/or all existing employees hired after November 6, 1986. The provisions of Article II.D, paragraphs 1.a and 1.b of this MOU providing timeframes for initiating employment verification of employees assigned to a contract apply to such institutions of higher education, State, local and tribal governments, and sureties.

d. Verification of all employees: Upon enrollment, Employers who are Federal contractors may elect to verify employment eligibility of all existing employees working in the United States who were hired after November 6, 1986, instead of verifying only those employees assigned to a covered Federal contract. After enrollment, Employers must elect to do so only in the manner designated by DHS and initiate E-Verify verification of all existing employees within 180 days after the election.

e. Form I-9 procedures for Federal contractors: The Employer may use a previously completed Form I-9 as the basis for initiating E-Verify verification of an employee assigned to a contract as long as that Form I-9 is complete (including the SSN), complies with Article II.C.5, the employee's work authorization has not expired, and the Employer has reviewed the information reflected in the Form I-9 either in person or in communications with the employee to ensure that the employee's stated basis in section 1 of the Form I-9 for work authorization has not changed (including, but not limited to, a lawful permanent resident alien having become a naturalized U.S. citizen). If the Employer is unable to determine that the Form I-9 complies with Article II.C.5, if the employee's basis for work authorization as attested in section 1 has expired or changed, or if the Form I-9 contains no SSN or is otherwise incomplete, the Employer shall complete a new I-9 consistent with Article II.C.5, or update the previous I-9 to provide the necessary information. If section 1 of the Form I-9 is otherwise valid and up-to-date and the form otherwise complies with Article II.C.5, but reflects documentation (such as a U.S. passport or Form I-551) that expired subsequent to completion of the Form I-9, the Employer shall not require the production of additional documentation, or use the photo screening tool described in Article II.C.5, subject to any additional or superseding instructions that may be provided on this subject in the E-Verify User Manual. Nothing in this section shall be construed to require a second verification using E-Verify of any assigned employee who has previously been verified as a newly hired employee under this MOU, or to authorize verification of any existing employee by any Employer that is not a Federal contractor.

2. The Employer understands that if it is a Federal contractor, its compliance with this MOU is a performance requirement under the terms of the Federal contract or subcontract, and the Employer consents to the release of information relating to compliance with its verification responsibilities under this MOU to contracting officers or other officials authorized to review the Employer's compliance with Federal contracting requirements.

ARTICLE III

REFERRAL OF INDIVIDUALS TO SSA AND DHS

A. REFERRAL TO SSA

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1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a system-generated referral letter and instruct the employee to visit an SSA office within 8 Federal Government work days. SSA will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO DHS

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. If the Employer finds a photo non-match for an employee who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding.

3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact DHS through its toll-free hotline (as found on the referral letter) within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit

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the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (furnished and paid for by DHS).

7. The Employer understands that if it cannot determine whether there is a photo match/non-match, the Employer is required to forward the employee's documentation to DHS by scanning and uploading, or by sending the document as described in the preceding paragraph, and resolving the case as specified by the Immigration Services Verifier at DHS who will determine the photo match or non-match.

ARTICLE IV

SERVICE PROVISIONS

SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access the E-Verify System, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

A. This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify User Manual. Even without changes to E-Verify, DHS reserves the right to require employers to take mandatory refresher tutorials. An Employer that is a Federal contractor may terminate this MOU when the Federal contract that requires its participation in E-Verify is terminated or completed. In such a circumstance, the Federal contractor must provide written notice to DHS. If an Employer that is a Federal contractor fails to provide such notice, that Employer will remain a participant in the E-Verify program, will remain bound by the terms of this MOU that apply to non-Federal contractor participants, and will be required to use the E-Verify procedures to verify the employment eligibility of all newly hired employees.

B. Notwithstanding Article V, part A of this MOU, DHS may terminate this MOU if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or

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DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. The Employer understands that if it is a Federal contractor, termination of this MOU by any party for any reason may negatively affect its performance of its contractual responsibilities.

C. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine necessary. By separate agreement with DHS, SSA has agreed to perform its responsibilities as described in this MOU.

D. Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

E. Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

F. The Employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, determinations of compliance with Federal contractual requirements, and responses to inquiries under the Freedom of Information Act (FOIA).

G. The foregoing constitutes the full agreement on this subject between DHS and the Employer.

H. The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify at 888-464-4218.

Employer

Name (Please Type or Print)	Title
Signature	Date

Department of Homeland Security – Verification Division

Name (Please Type or Print)	Title
Signature	Date

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Information Required for the E-Verify Program

Information relating to your Company:

Company Name: _____

Company Facility Address: _____

_____

_____

Company Alternate Address: _____

_____

_____

County or Parish: _____

Employer Identification Number: _____

North American Industry Classification Systems Code: _____

Parent Company: _____

Number of Employees: _____

Number of Sites Verified for: _____

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State:

State	Number of sites	Site(s)

E-Verify

E-VERIFY IS A SERVICE OF DHS AND SSA

Company ID Number: _____

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name: _____

Telephone Number: _____

Fax Number: _____

E-mail Address: _____

Name: _____

Telephone Number: _____

Fax Number: _____

E-mail Address: _____

DISADVANTAGED BUSINESS ENTERPRISE (DBE) CONTRACT PROVISIONS

1.0 Disadvantaged Business Enterprise (DBE) Program Requirements. The subsequent Sections will apply only to this contract since it involves U.S. Department of Transportation (USDOT) federal-aid or federal financial participation. Federal-aid or federal financial participation includes, but is not limited to, any funds directly or indirectly received by the Local Public Agency, or authorized for distribution through MoDOT, by the USDOT or any operating administration within the USDOT. Any contractor, subcontractor, supplier, DBE firm, and contract surety involved in the performance of this federal-aid contract shall be aware of and fully understand the terms and conditions of the USDOT DBE Program, as the terms appear in Title 49 Code of Federal Regulations (CFR) Part 26 (as amended), the USDOT DBE Program regulations; Title 7 Code of State Regulations (CSR) Division 10, Chapter 8 (as amended), MoDOT's DBE Program rules.

2.0 DBE Program Information. DBE Program information may be obtained from the MoDOT External Civil Rights Administrator, 1617 Missouri Blvd, P.O. Box 270, Jefferson City, Missouri 65109. Phone (573) 751-7801, Fax (573) 526-0558, EMail: **dbe@modot.mo.gov.** It will be the duty of each contractor, for the contractor and for the contractor's subrecipients and surety, to take the steps necessary to determine the legal obligations and limitations under the DBE Program, as an element of responsibility. It will be the duty of each certified DBE firm to know, understand and comply with the DBE firm's legal obligations and limitations under the DBE Program, as a requirement of program participation. A surety providing a bid or contract bond will be bound by those bonds to the duties of the surety's principal.

3.0 DBE Program Distinguished From Other Affirmative Action Programs. The USDOT DBE Program established by the U.S. Congress is not the same as, and does not involve or utilize, any of the elements or authority of other state or local affirmative action programs. The USDOT DBE Program is implemented by the Local Public Agency and MoDOT, through and in conjunction with the Federal Highway Administration, Federal Transit Administration and Federal Aviation Administration, as a "recipient" defined in Title 49 CFR 26.5.

4.0 Policy Regarding DBE Firms. It is the policy of the U. S. Department of Transportation and MoDOT that businesses owned by socially and economically disadvantaged individuals have an opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Consequently, the requirements of 49 CFR Part 26 (as amended) and MoDOT's implementing state regulations in Title 7 CSR Division 10, Chapter 8, "Disadvantaged Business Enterprise Program", will apply to any contract with federal funds.

5.0 Opportunity for DBEs to Participate. Each contractor, subcontractor and supplier working on a contract financed in whole or in part with federal funds shall take all necessary and reasonable steps to ensure that DBEs have an opportunity to compete for, and participate in performance on project contracts and subcontracts.

6.0 Required Contract Provision. This federal-aid contract will include the following provision, as mandated by USDOT at Title 49 CFR 26.13(b):

(a) The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of the contract, which may result in the termination of the contract or such other remedy, as the recipient deems appropriate. In this provision, "contractor" will be defined as the contractor on the contract; "subrecipient" will be defined as any subcontractor performing the work. For the purposes of any federal-aid contract awarded by the Local Public Agency, "the recipient" will be defined as either the Local Public Agency, or MoDOT, or both. The contractor shall include this same contract provision in every supply contract or subcontract the contractor makes or executes with a subrecipient.

7.**0 Bank Services.** The contractor, and each subrecipient on this federal-aid contract, is encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals. Such banking services, and the fees charged for services, typically will not be eligible for DBE Program contract goal credit. Any questions on this subject should be directed to the MoDOT External Civil Rights Administrator. See Section 2.0.

8.0 DBE Certification, and the Missouri Regional Certification Committee (MRCC). At present, the only DBE firms eligible to perform work on a federal-aid contract for DBE contract goal credit are firms certified by MoDOT. When the MRCC takes effect in Missouri pursuant to 49 CFR 26.81 and 7 CSR 10-8.061, certification of a firm as a DBE by the Missouri UCP members will be equivalent to DBE certification by MoDOT.

9.0 DBE Program-Related Certifications Made By Bidders and Contractors. If the bidder makes a written, express disclaimer of one or more certifications or assurances in the "DBE Submittal" forms, that submission will be considered non-responsive. By submitting a bid with DBE information on any project involving USDOT federal financial participation, and by entering into any contract on the basis of that bid, the contractor makes each of the following DBE Program-related certifications and assurances to USDOT, to the Local Public Agency, and to MoDOT:

(a) The bidder certifies that management and bidding officers have reviewed and understand the bidding and project construction and administration obligations of the USDOT DBE Program regulations at Title 49 CFR Part 26 (as amended), the USDOT DBE Program regulations; Title 7 CSR Division 10, Chapter 8 (as amended), and the MoDOT's DBE Program rules. The bidder further certifies that the contractors management personnel on the project understand and are familiar with the requirements of these federal and state DBE Program regulations; and if the bidder was not familiar with or did not understand the requirements of these regulations, they have contacted the External Civil Rights Unit of MoDOT and have been informed as to their duties and obligations under the DBE Program regulations.

(b) The bidder certifies that the bidder has complied with the federal and state DBE Program requirements in submitting the "DBE Submittal" forms, and will comply fully with these requirements in performing any federal-aid contract awarded on the basis of that submission.

(c) The bidder agrees to ensure that certified DBE firms have a full and fair opportunity to participate in the performance of this contract. The bidder certifies that all necessary and reasonable steps were taken to ensure that DBE firms have an opportunity to compete for, and perform work on this contract. The bidder further certifies that the bidder has not and will not discriminate on the basis of race, color, age, national origin or sex in the performance of this contract, or in the award of any subcontract.

(d) The bidder certifies, under penalty of perjury and other applicable penal laws that if awarded this federal-aid contract, the contractor will make a good faith effort to utilize certified DBE firms to perform DBE work at or above the amount or percentage of the dollar value specified in the bidding documents. The bidder further certifies the bidder's understanding that the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate of the contractor, without the prior written consent of MoDOT as set out below.

(e) The bidder certifies, under penalty of perjury and other applicable penal laws that a good faith effort was made to obtain DBE participation in this contract, at or above the DBE participation contract goal. The bidder further certifies, under penalty of perjury and other applicable penal laws, that if the bidder is not able to meet the MoDOT's specified DBE contract goal by the time the proposed DBE participation information must be submitted, within three business days after bid opening, the bidder has submitted with and as a part of the bid, a true, accurate, complete and detailed written explanation of all its good faith efforts taken to meet the DBE contract goal.

(f) The bidder understands and agrees that if awarded this contract the contractor is legally responsible to ensure that the contractor and each DBE subcontractor and supplier, comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each DBE firm participating in this contract fully performs the designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. The bidder certifies, under penalty of perjury and other applicable penal laws, that if it awarded this contract and if MoDOT or the Local Public Agency determine that the contractor, a DBE or any other firm retained by the contractor has failed to comply with the DBE Program requirements or federal or state DBE Program regulations, the Local Public Agency, through MoDOT, shall have the sole authority and discretion to determine the extent of the monetary value to which the DBE contract goals have not been met, and to assess against and withhold monetary damages from the contractor in the full amount of that breach. The Local Public Agency, through MoDOT, may impose any other remedies available at law or provided in the contract in the event of a contract breach. The bidder further understands and agrees that this clause authorizes the Local Public Agency, through MoDOT, to determine and fix the extent of the damages caused by a breach of any contractual or regulatory DBE Program requirement and that the damage assessment will be enforced in addition to, and not in lieu of, any other general liquidated damages clause in this contract. By submitting a bid for this federal-aid contract, and by entering into this contract, the bidder irrevocably agrees to such an assessment of liquidated damages for DBE Program purposes, and authorizes the Local Public Agency and MoDOT to make such an assessment of liquidated damages against the contractor, and to collect that assessment from any sums due the contractor under this contract, or any

other contract, or by other legal process. The bidder makes this certification, agreement and authorization on behalf of itself, its subcontractors and suppliers, and the bid bond and contract bond sureties, for this federal-aid contract.

(g) The surety upon any bid or contract bond acknowledges the surety is held and firmly bound to the Local Public Agency for each and every duty of the surety's principal provided in any bid or contract regarding the DBE program.

10.0 Designation of DBE firms to perform on contract. The bidder states and certifies, under penalty of perjury or other applicable penal laws, that the DBE participation information submitted in the bid or within the stated time thereafter is true, correct and complete and that the information provided includes the names of all DBE firms that will participate in the contract, the specific line item (s) that each DBE firm will perform, and the creditable dollar amounts of the participation of each DBE. The specific line item must reference the MoDOT line number and item number contained in the proposal. The bidder further states and certifies that the bidder has committed to use each DBE firm listed for the work shown to meet the DBE contract goal and that each DBE firm listed has clearly confirmed that the DBE firm will participate in and perform the work, with the DBE's own forces. Award of the contract will be conditioned upon meeting these and other listed requirements of 49 CFR 26.53.

(a) The bidder certifies the bidder's understanding that as the contractor on a contract funded in whole or in part by USDOT federal funds, the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate, without the prior written consent of MoDOT. The bidder understands it must receive approval in writing from MoDOT for the termination of a DBE firm, or the substitution or replacement of a DBE before any substitute or replacement firm may begin work on the project in lieu of the DBE firm participation information listed in the executed contract,

(1) The bidder further certifies the bidder's understanding, that if a DBE firm listed in the bid or approved in the executed contract documents ceases to be certified at any time during the performance of the contract work, and a contract or subcontract with that firm has not yet been executed by the prime and subcontractor, the contractor can not count any work performed by that firm after the date of the firm's loss of eligibility toward meeting the DBE contract goal. However, if the contractor has executed a subcontract with the firm before the DBE lost eligibility and ceased to be a certified DBE, the contractor may continue to receive credit toward the DBE contract goal for that firm's work.

(2) The bidder further certifies the bidder's understanding, that if a DBE subcontractor is terminated, or fails, refuses or is unable to complete the work on this contract for any reason, the contractor must promptly request authority to substitute or replace that firm. The request shall include written documentation that the DBE firm is unwilling or unable to perform the specified contract work. The contractor shall make good faith efforts to find another DBE subcontractor to substitute or replace the dollar amount of the work that was to have been performed by the DBE firm. The good faith efforts shall be directed at finding another DBE to perform the same, or more, dollar amount of work that the DBE firm that was terminated was to have performed under the executed contract. The substitute or replacement DBE firm may be retained to perform

the same or different contract work from that which the terminated firm was to have performed. The contractor shall obtain approval from MoDOT in writing before the replacement or termination of one firm with another before the work will count toward the project DBE goal.

(3) The bidder further certifies the bidder's understanding, that the dollar value of any work completed by a DBE firm prior to approval of the DBE's substitution or replacement, in writing, by MoDOT will not be credited toward meeting the DBE contract goal. The contractor will remain subject to appropriate administrative remedies, including but not limited to, liquidated damages for the full dollar amount that the DBE contract goal is not met. Liquidated damages will also be assessed against the contractor if the original, substitute or replacement DBE firms perform the required contract work, but are not paid in full for some or all of that work by the contractor, including back charges. No credit toward the DBE goal will be given for any amount withheld from payment to the DBE or "back charged" against monies owed to the DBE, regardless of the purpose or asserted debt.

11.0 Good Faith Effort to Secure DBE Services. The bidder shall make a good faith effort to seek DBEs in a reasonable geographic area to where the solicitation for subcontracts and material is made. If the bidder cannot meet the goals using DBEs from that geographic area, the bidder shall, as a part of the effort to meet the goal, expand the search to a wider geographic area.

11.1 Bidding Procedure. The following bidding procedure shall apply to this contract, for DBE program compliance purposes.

11.2 Contract Goal, Good Faith Efforts Specified. As a matter of responsiveness and responsibility, the apparent low and second low bidder shall file the completed "DBE Submittal" pages with the Local Public Agency on or before 4:00 p.m. of the third business day after the bid opening date, directly to the address specified on the "DBE Submittal" forms. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's responsibility.

11.3 Bid Rejection, Bid Security Disposition. The failure of either the apparent low bidder or the second low bidder to file the completed and executed "DBE Submittal", listing actual, committed DBE participation equal to or greater than the specified DBE contract goal percentage, by 4:00 p.m. on the third business day after the bid opening, will be cause for rejection of that bid, and the bid surety bond or bid guaranty of that bidder will be forfeited to and become the property of the Local Public Agency upon Local Public Agency demand.

(a) Any bidder rejected for failure to submit the completed and executed "DBE Submittal" forms in the bidding documents, with full documentation of sufficient DBE participation to satisfy the DBE contract goal cannot submit a bid on the same, or substantially similar, project, when and if the project is re-advertised for bids. By submitting a bid on this federal-aid project, the bidder accepts and agrees to this provision, and the disposition of the bidders bid bond or guaranty, on behalf of the bidder and the bidders bid surety or guaranty.

(b) The surety separately acknowledges the surety to be held and firmly bound to the Local Public Agency to immediately upon demand pay to the Local Public Agency the face amount of the bid bond.

11.4 Good Faith Efforts Described. If the bidder cannot obtain sufficient DBE participation to meet the DBE contract goal, the bidder must list **all** good faith efforts it made to obtain the DBE participation for this contract. Good faith efforts to meet the DBE contract goal may include, but are not limited to, the following:

(a) Attending a pre-bid meeting, if any, scheduled by the department to inform DBEs of contracting and subcontracting opportunities;

(b) Advertising in general circulation trade association and socially and economically disadvantaged business directed media concerning subcontracting opportunities.

(c) Providing written notice to a reasonable number of specific DBEs so that the DBE's interest in the contract are solicited in sufficient time to allow the firm to participate effectively;

(d) Following-up on initial written notice or solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested.

(e) Maintaining documentation of responses received in the effort to solicit DBE participation.

(f) Selecting portions of work to be performed by DBEs to increase the likelihood of meeting the DBE goal, including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation.

(g) Providing interested DBEs adequate information about plans, specifications and requirements of the contract.

(h) Negotiating in good faith with interested DBEs, not rejecting DBEs as unqualified without sound business reasons based on a thorough investigation of the DBE's capabilities.

(i) Making efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance required by MoDOT or by the bidder.

(j) Making effective use of available disadvantaged business organizations, minority bidders' groups, local, state and federal disadvantaged business assistance offices, MoDOT and other organizations that provide assistance in the recruitment and placement of DBEs.

11.5 Documentation, and Administrative Reconsideration of the Bidder's Good Faith Efforts. In the "DBE Submittal" forms, the bidder has the opportunity and responsibility to provide certified written documentation as to whether the bidder made a good faith effort to meet the DBE contract goal. Any bidder that has not met the DBE contract goal must complete the "Certification of Good Faith Efforts to Obtain DBE Participation" as part of the "DBE Submittal" forms. The "DBE Submittal" forms including

that certification shall be submitted to the Local Public Agency on or before 4:00 p.m. of the third business day after the bid opening date, directly to the address specified on the "DBE Submittal" forms. The complete and signed original documents shall be mailed to the Local Public Agency no later than the day of any telefax transmission. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's responsibility. The bidder shall attach additional pages to the "DBE Submittal" forms, if necessary, in order to fully detail specific good faith efforts made to obtain certified DBE firm participation in the proposed contract work. If the apparent low bidder appears to have failed to adequately document in the "DBE Submittal" forms that the bidder made a good faith effort to achieve sufficient DBE participation in the contract work, that firm will be offered the opportunity for administrative reconsideration upon written request, before the Local Public Agency rejects that bid as non-responsive. However, regardless of the DBE contract goal participation level proposed by the bidder, or the extent of good faith efforts shown, the apparent low and second low bidders shall each file timely and separately their completed and executed "DBE Submittal" forms, or face potential sanctions and the bid bond or guaranty as specified in Section 10.0 of these provisions, may become the property of the Local Public Agency subject to the Local Public Agency's demand.

12.0 DBE Participation for Contract Goal Credit. DBE participation on this contract will count toward meeting the DBE contract goal as follows:

(a) The applicable percentage of the total dollar value of this contract or subcontract awarded to the DBE will be counted toward meeting the DBE contract goal, only if that firm is certified by MoDOT as a DBE at the time the contract or subcontract is executed, and only for the value of the work, goods or services that are actually performed, or provided, by the DBE firm itself.

(b) When a DBE performs work as a participant in a joint venture, the contractor may count toward the DBE goal only that portion of the total dollar value of this contract equal to the distinct, clearly defined portion of the contract work that the DBE has performed with the DBE's own forces. The MoDOT External Civil Rights Administrator shall be contacted in advance regarding any joint venture involving both a DBE firm and a non-DBE firm to review and approve the contractor's organizational structure and proposed operation. When a DBE subcontracts part of the work of this contract to another firm, the value of that subcontracted work may be counted toward the DBE contract goal only if the DBE's subcontractor at a lower tier is a MoDOT certified DBE. Work that a DBE subcontracts to a non-DBE firm will not count toward the DBE contract goal. The cost of supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or the prime's affiliated firms, or from another non-DBE subcontractor, will not count toward the DBE contract goal.

(c) The contractor may count expenditures to a DBE subrecipient toward the DBE contract goal only if the DBE performs a commercially useful function on that contract.

(d) A contractor may not count the participation of a DBE subcontractor toward the contractor's final compliance with the contractor's DBE contract goal obligations until the amount being counted has actually been paid to the DBE. A contractor may count 60 percent of the contractor's expenditures actually paid for material and supplies obtained from a DBE certified by MoDOT as a regular dealer, and 100 percent of such

expenditures actually paid for materials and supplies obtained from a certified DBE manufacturer.

(1) A regular dealer will be defined as a firm that owns, operates, or maintains a store, warehouse or other establishment in which the material, supplies, articles or equipment required and used under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the DBE firm shall be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions will not be considered regular dealers.

(2) A DBE firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt, without owning, operating or maintaining a place of business where it keeps such items in stock, if the DBE both owns and operates distribution equipment for the products it sells and provides for the contract work.. Any supplementation of a regular dealer's own distribution equipment shall be by a long-term lease agreement, and not on an *ad hoc* or contract-by-contract basis.

(3) If a DBE is a regular dealer and is used for the DBE contract goal credit, no additional credit will be given for hauling or delivery to the project site for goods or materials sold by that DBE regular dealer. Those delivery costs shall be deemed included in the price charged for the goods or materials by the regular dealer, who shall be responsible for their distribution.

(4) A manufacturer will be defined as a firm that operates or maintains a factory or establishment that produces on the premises, the material, supplies, articles or equipment required under this contract and of the general character described by the project specifications. A manufacturer will include firms that produce finished goods or products from raw or unfinished material, or that purchases and substantially alters goods and materials to make them suitable for construction use before reselling them.

(e) A contractor may count toward the DBE contract goal the following expenditures to certified DBE firms that are not "regular dealers" or "manufacturers" for DBE program purposes:

(1) The contractor may count toward the DBE contract goal the entire amount of fees or commissions charged by a certified DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the federal-aid contract, if the fee is reasonable and not excessive, compared with fees customarily charged for similar services.

(2) The contractor may count toward the DBE contract goal the entire amount of that portion of the construction contract that is performed by the DBE's own forces and equipment, under the DBE's supervision. This includes the cost of supplies and material ordered and paid for by the DBE for contract work, including supplies purchased or equipment leased by the DBE except supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or its affiliates.

(f) A contractor may count toward the DBE contract goal 100 percent of the fees paid to a certified DBE trucker or hauler for delivery of material and supplies required on a job site, but not for the cost of those materials or supplies themselves, or for the removal or relocation of excess material from or at the job site, when the DBE certified trucking company is not also the manufacturer of or a regular dealer in those material and supplies, provided that the trucking or hauling fee is determined by MoDOT to be reasonable as compared with fees customarily charged by non-DBE firms for similar services. The certified DBE trucking firm shall also perform a commercially useful function commercially useful function on the project and not operate merely as a pass through for the purposes of gaining credit toward the contract DBE goal. Prior to submitting a bid, the contractor shall determine, or contact the MoDOT External Civil Rights Administrator for assistance in determining, whether a DBE trucking firm will meet the criteria for performing a commercially useful function on the project.

(g) The contractor will receive DBE contract goal credit for the fees or commissions charged by and paid to a DBE broker who arranges or expedites sales, leases or other project work or service arrangements, provided that those fees are determined by MoDOT to be reasonable and not excessive, as compared with fees customarily charged by non-DBE firms for similar services. A broker will be defined as a person or firm that does not own or operate the delivery equipment necessary to transport materials, supplies or equipment to or from a job site; a broker typically will not purchase or pay for the material, supplies or equipment, and if the broker does purchase or pay for those items, those costs will be reimbursed in full. In most instances, the broker is merely the entity making arrangements for delivery of material, supplies, equipment, or arranging project services. To receive DBE contract goal credit, MoDOT must determine that the DBE broker has performed a commercially useful function in providing the contract work or service.

13.0 Performing a Commercially Useful Function. No credit toward the DBE contract goal will be allowed for contract payments or expenditures to a DBE firm, if that DBE firm does not perform a commercially useful function on that contract. A DBE performs a commercially useful function when the DBE is solely responsible for execution of a distinct element of the contract work, and the DBE actually performs, manages and supervises the work involved with the firm's own forces. To perform a commercially useful function, the DBE alone shall be responsible, and alone must bear the risk, for the material and supplies used on this contract, selecting a supplier or dealer from those available, negotiating price, determining quality and quantity, ordering the material and supplies, installing those materials with the DBE's own forces and equipment and paying for those materials and supplies. The amount the DBE firm is to be paid under this contract shall commensurate with the work the DBE actually performs and the DBE credit claimed for the DBE's performance.

13.1 Contractor's Obligation to Monitor Commercially Useful Function Performance. It shall be solely the contractor's responsibility to ensure that all DBE firms perform a commercially useful function. Further, the contractor is responsible to, and shall ensure that each DBE firm fully performs the DBE's designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. MoDOT is under no obligation to warn the contractor that a DBE's participation may not count toward the goal, other than through official notification with an opportunity for administrative reconsideration at the conclusion of the contract work.

13.2 DBEs Must Perform a Useful and Necessary Role in Contract Completion. A DBE does not perform a commercially useful function if the DBE's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

13.3 DBEs Must Perform The Contract Work With Their Own Workforces. If a DBE does not perform and exercise responsibility for at least 30 percent of the total cost of the DBE's contract with the DBE's own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, MoDOT will presume that the DBE is not performing a commercially useful function.

13.4 Factors Used to Determine if a DBE Trucking Firm is Performing a Commercially Useful Function. The following factors will be used to determine whether a DBE trucking company is performing a commercially useful function:

(a) To perform a commercially useful function, the DBE trucking firm shall be completely responsible for the management and supervision of the entire trucking operation that the DBE is being paid for on the contract work. There shall not be contrived arrangement, including but not limited to, any arrangement that would not customarily exist under regular construction project subcontracting practices for the purpose of meeting the DBE contract goal.

(b) The DBE must own and operate at least one fully licensed, insured and operational truck used in performance of the contract work. This does not include a supervisor's pickup truck or a similar vehicle that is not suitable for hauling the necessary materials or supplies.

(c) The DBE receives 100 percent contract goal credit for the total reasonable amount the DBE is paid for the transportation services provided on this contract using trucks the DBE owns, insures and operates, using drivers that the DBE employs.

(d) The DBE may lease trucks from another DBE firm, including an owner operator who is certified as a DBE. The DBE firm that leases trucks from another DBE will receive credit for the total fair market value actually paid for of the transportation services the lessee DBE firm provides on the contract.

(e) The DBE may also lease trucks from a non-DBE firm, including an owner operator. However, the DBE who leases trucks from a non-DBE is entitled to DBE contract goal credit only for the brokerage fee or commission the DBE receives as a result of the lease arrangement. The DBE will not receive credit for the total value of the transportation services provided by the non-DBE lessee. Furthermore, no DBE contract goal credit will be allowed, even for brokerage fees or commissions, where the DBE leases the trucks from the prime contractor on the project or a firm owned, controlled by, or affiliated by ownership or control to, the prime contractor.

(f) For purposes of this section, the lease shall indicate that the DBE firm leasing the truck has exclusive use of and control over the truck. This will not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, provided the lease gives the DBE absolute priority for and control over the use of

the leased truck. Leased trucks shall display the name and identification number of the DBE firm that has leased the truck at all times during the life of that lease.

13.5 MoDOT Makes Final Determination On Whether a Commercially Useful Function Is Performed. MoDOT and the Local Public Agency will have the final authority to determine whether a DBE firm has performed a commercially useful function on a federal-aid contract. To determine whether a DBE is performing or has performed a commercially useful function, MoDOT will evaluate the amount of work subcontracted by that DBE firm or performed by other firms, and the other firms forces and equipment. Any DBE work performed by the contractor, or by employees or equipment of the contractor will be subject to disallowance under the DBE Program, unless independent validity and need is demonstrated.

14.0 Verification of DBE Participation, Liquidated Damages.

14.1 Prior to final payment by the Local Public Agency, the contractor shall file with the Local Public Agency a detailed list showing each DBE used on the contract work, and the work performed by each DBE. The list shall show the actual dollar amount paid to each DBE for the creditable work on this contract, less any rebates, kickbacks, deductions, withholdings or other repayments made. The list shall be certified under penalty of perjury, or other law, to be accurate and complete. MoDOT and the Local Public Agency will use this certification and other information available to determine if the contractor and the contractor's DBEs satisfied the DBE contract goal percentage specified in this contract and the extent to which the DBEs were fully paid for that work. The contractor shall acknowledge, by the act of filing the detailed list, that the information is supplied to obtain payment regarding a federal participation contract.

14.2 Failure on the part of the contractor to achieve the DBE participation to which the contractor committed in this contract may result in liquidated damages being imposed on the contractor by the Local Public Agency for breach of contract and for non-compliance. If this contract was awarded with less than the original DBE contract goal proposed by the Local Public Agency, the revised lower amount shall become the final DBE contract goal, and that goal will be used to determine any liquidated damages to be assessed. Additionally, the Local Public Agency or MoDOT may impose any other administrative sanctions or remedies available at law or provided by this contract in the event of breach by the contractor by failing to satisfy the contractor's DBE contract goal commitment. However, no liquidated damages will be assessed, and no other administrative sanctions or remedies will be imposed when, for reasons beyond the control of the contractor and despite the good faith efforts made by the contractor, the final DBE contract goal participation percentage was not achieved. The contractor will be offered the opportunity for administrative reconsideration of any assessment of liquidated damages, upon written request. The administrative reconsideration officer may consider all facts presented, including the legitimacy or business reason for back charges assessed against a DBE firm, in determining the final amount of liquidated damages.

15.0 Prompt Payment Requirements. In accordance with Title 49 CFR 26.29, the contractor shall comply with the prompt payment requirements of that regulation, Section 34.057, RSMo., the provisions of the MoDOT's rule 7 CSR 10-8.111 and this contract. By bidding on this federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the

contractor's subrecipients contractually to those prompt payment requirements at the contractor's expense.

16.0 Miscellaneous DBE Program Requirements. In accordance with Title 49 CFR Part 26 and the MoDOT's DBE Program rules in Title 7 CSR Division 10, Chapter 8, the contractor, for both the contractor and for the contractor's subcontractors and suppliers, whether DBE firms or not, shall commit to comply fully with the auditing, record keeping, confidentiality, cooperation and anti-intimidation or retaliation provisions contained in those federal and state DBE Program regulations. By bidding on this federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the contractor's subrecipients contractually, at the contractor's expense.

DBE Submittal Forms

(6) **DBE Submittal Forms**: This form must be submitted by 4 p.m. three (3) business days after bid opening.

(A) DBE Contract Goal: By submitting this bid, the bidder certifies that the bidder is familiar with the DBE Program Requirements in this contract. The contract DBE goal for the amount of work to be awarded is <<16.0>>% of the total federal project price.

(B) DBE Participation: The bidder certifies that it will utilize DBE's as follows:

_____ % OF TOTAL FEDERAL CONTRACT

NOTE: Bidder must fill in the above blank. If a percentage equal to or exceeding the contract goal is specified, then the contract DBE goal becomes legally enforceable. If a percentage below the contract goal is specified, then the bidder must submit complete documentation of good faith efforts to meet the DBE contract goal, immediately below.

(C) Certification of Good Faith Efforts to Obtain DBE Participation: By submitting its signed bid, the bidder certifies under penalty of perjury and other provisions of law, that the bidder took each of the following steps to try to obtain sufficient DBE participation to achieve the Commission's proposed DBE Contract Goal: (Attach additional sheets if necessary).

DBE Submittal Forms

Identification of Participating DBEs: The information shown on this page must be completed. If this page is submitted but not signed, it will not be cause for rejection. The apparent low and second low bidder must file this form with Cochran, 737 Rudder Road, Fenton, MO 63026 by 4:00 p.m. on the third working day after the bid opening. Fax or email transmittal is permitted. The fax number is (314) 842-5957 and the email address for submittal is mspalding@cochraneng.com. The original copy must be mailed by overnight mail to Cochran the day of the FAX or email transmittal. Contract External Civil Rights at (573) 751-7801 for questions or assistance in completion. (Note: Submittal of this form is not required if the Contract DBE Goal is 0%)

The undersigned submits the following list of DBEs to be used in accomplishing the work of this contract. The work, supplies, or services, applicable value and percent of total federal contract each DBE is to perform or furnish is as follows:

(A) DBE Name & Address	(B) Bid Item Numbers (Or Line numbers)	(C) $ Value of DBE of Work ** (Unit Price X Quantity of each item in B, or Lump Sum)	(D) % Of $ Value Applicable to DBE Goal ** (100%, 60%)	(E) $ Amount Applicable to DBE Goal for each item (C x D)	(F) % Of Total Contract Amount for each item (E/total contract Amount)
1.					
		Total		Total	Total
2.					
		Total		Total	Total
3.					
		Total		Total	Total
4.					
		Total		Total	Total
Total DBE Participation					

** Cannot exceed contract amount for given item of work.

DBE Submittal Forms

(A) DBE Name & Address	(B) Bid Item numbers	(C) $ Value of DBE of Work ** (Unit Price x Quantity of each item in B, or Lump Sum)	(D) % Of $ Value Applicable to DBE Goal ** (100%, 60%)	(E) $ Amount Applicable to DBE Goal for each item (C x D)	(F) % Of Total Contract Amount for each item (E/Total Contract Amount)
Trucking Services Only used if the DBE owns trucks or is leasing from a DBE firm			100%		
Trucking Services Trucks are leased from non-DBE source				Only Include Fees for Trucking Services	
Brokered Services				Only Include Fees for Brokered Services	
Totals (Page 1)					
Totals (Page 2)					
Totals (additional pages if needed)					
Total DBE Participation					

** Cannot exceed contract amount for given item of work.

Company:_____ Date:_____

By: _____ Title: _____

INSTRUCTIONS FOR EXECUTING CONTRACT

The Contractor, in executing the Contract, shall follow the following requirements:

The Contractor and the Owner shall sign the Contract Documents in not less than triplicate.

If the Contractor is a corporation, the following certificate shall be executed:

> "I, _____ certify that I am the _____ of the corporation named as Contractor herein above, that _____ who signed the foregoing Contract on behalf of the Contractor was then of said corporation; that said Contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers."

If the Contract is signed by the secretary of the corporation, the above certificate shall be executed by some other officer of the corporation under the corporate seal. In lieu of the foregoing certificate there may be attached to the Contract, copies of as much of the records of the corporation as will show the official character and authority of the officers signing, duly certified by the secretary or assistant secretary under the corporate seal to be true copies.

If the Contractor is a partnership, each partner shall sign the Contract. If the Contract is not signed by each partner, there shall be attached to the Contract a duly authenticated power of attorney evidencing the signer's ("signers") authority to sign such a Contract for and in behalf of the partnership.

If the Contractor is an individual, the trade name (if the Contractor is operating under a trade name) shall be indicated in the Contract and the Contract shall be signed by such individual. If signed by one other than the Contractor there shall be attached to the Contract a duly authenticated power of attorney evidencing the signer's authority to execute such Contract for and in behalf of the Contractor.

The full name and business address of the Contractor shall be inserted and the Contract shall be signed with his official signature. The name of the signing party or parties shall be typewritten or printed under all signatures to the Contract.

The Contract shall be deemed as having been awarded when formal Notice of Award shall have been duly served upon the intended awardee (i.e., the bidder with whom the Owner contemplates entering into a Contract) by some officer or agent of the Owner duly authorized to give such notice.

OWNER-CONTRACTOR AGREEMENT

This is an Agreement made and entered into the ____ day of _____, 20__, by and between the City of New Haven (hereinafter called the "Owner") and _____, a _____ with offices located at _____, (hereinafter called the "Contractor").

The project is identified as Miller Street Improvements Phase 1 & 2, located in the City of New Haven, Federal Project No. STP-5401(628), (hereinafter called "Project")

The Engineer is Cochran, with offices located at 12963 Maurer Industrial Drive, Sunset Hills, Missouri 63127 (hereinafter called the "Engineer").

WITNESSETH:

The Contractor and the Owner, for the consideration set forth herein, agree as follows:

ARTICLE I

The Contract Documents

The Contract Documents include the Conditions of the Contract (General Conditions of Owner-Contractor Agreement, Supplementary Conditions and other Conditions), State Wage Determination, Non-Collusion Affidavit, Performance and Payment Bond, Drawings, Specifications, the Construction Schedule, all Addenda issued prior to the execution of this Contract, and all Modifications issued after execution of this Contract, which together with this Agreement form the Contract, and are all as fully a part of the Contract as if attached to this Agreement or repeated herein. All definitions set forth in the General Conditions of Owner-Contractor Agreement are applicable to this Agreement.

The Contract represents the entire and integrated agreement between the parties, and supersedes prior negotiations, representations and agreements, whether written or oral. An enumeration of the Contract Documents, other than Modifications, is set forth in Article X.

ARTICLE II

Scope of Work

The Contractor, acting as an independent contractor, shall faithfully and fully perform the Work described in, and shall do everything required by, the Contract Documents or reasonably inferable therefrom, for the complete construction of the project. The Contractor represents and warrants that he has special skills which qualify him to perform the Work in accordance with the Contract and that he is free to perform all such Work and is not a party to any other agreement, written or oral, the performance of which would prevent or interfere with the performance, in whole or in part, of the Work.

ARTICLE III

Time of Completion

(a) All time limits stated in the Contract Documents are of the essence. The Work to be performed under the Contract shall commence within seven (7) consecutive calendar days of the date of the written Notice to Proceed from the Owner to the Contractor, and shall be completed within **180** consecutive calendar days from and including the date of said written Notice to Proceed, subject to adjustments of this Contract Time as provided in the Contract Documents.

(b) Contractor shall pay, as liquidated damages and not as a penalty, the sum of **$1100.00** for each consecutive calendar day after the Final Completion date that the Work has not been completed. The total amount so payable to the Owner as liquidated damages may be deducted from any sums due or to become due to Contractor from Owner.

ARTICLE IV

The Contract Sum and Payments

The Owner agrees to pay, and the Contractor agrees to accept, for the performance of the Contract, the sum of _____ ($_____), subject to additions and deductions as provided in the Contract Documents. Based upon proper Applications for Payment submitted by the Contractor to the Owner on or before the twentieth day of the month for Work performed, payment will be made in the form of progress payments as follows and as provided elsewhere in the Contract Documents:

(1) On or about the tenth day of each following month, one hundred percent (100%) of the portion of the Contract Sum properly allocable to labor, materials and equipment incorporated into the Work, and one hundred percent (100%) of the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site to be incorporated into the Work, through the period ending up to the twentieth day of the preceding month, less the aggregate of all previous progress payments;

(2) Final payment within 30 days after the Work is fully completed and accepted by the Owner and the Contract is fully performed.

ARTICLE V

Performance of the Work

(a) Within 10 days after being awarded the Contract, the Contractor shall prepare and submit for the Owner's approval, (1) a Construction Schedule for the Work in a Gantt Chart format, which Construction Schedule shall indicate the dates for starting and completing the various stages of construction, and (2) a Traffic Control Plan indicating the location of all proposed signage, detours, road closures throughout the Project which adequately address the Traffic Control Plan of the proposed Work. All traffic control shall be according to the standards of the latest edition of the Manual on Uniform Traffic Control Devices developed by the Federal Highway Administration. No Work will commence until the Contractor's Schedule and Traffic Control Plan is submitted and approved by the Owner.

(b) Completion of the Work in accordance with the time limits set forth in the Construction Schedule is an essential condition of the Contract.

(c) After commencement of the Work, and until final completion of the Work, the Contractor shall report to the Owner at such intervals as the Owner may reasonably direct, the actual progress of the Work compared to the Construction Schedule. If the Contractor falls behind the Construction Schedule for any reason, he shall promptly take, and cause his Subcontractors to take, such action as is necessary to remedy the delay, and shall submit promptly to the Owner for approval a supplementary schedule or progress chart demonstrating the manner in which the delay will be remedied; provided, however, that if the delay is excusable under Article VI hereof, the Contractor will not be required to take, or cause his Subcontractors to take, any action which would increase the overall cost of the Work (whether through overtime premium pay or otherwise), unless the Owner shall have agreed in writing to reimburse the Contractor for such increase in cost. Any increase in cost incurred in remedying a delay which is not excusable under Article VI hereof shall be borne by the Contractor.

ARTICLE VI

Delays Beyond Contractor's Control

(a) If the Contractor fails to complete the Work in accordance with the Construction Schedule as a result of the act or neglect of the Owner, or by strikes, lockouts, fire or other similar causes beyond the Contractor's control, then, and to the extent of such delays, the Contractor shall not be required to pay liquidated damages to the Owner pursuant to Paragraph (b) of Article III hereof, provided the Contractor uses his best efforts to remedy the delay in the manner specified in Paragraph (c) of Article V hereof. If, as a result of any such cause beyond the Contractor's control, the delay in completion of the Work in accordance with the Construction Schedule is so great that it cannot be remedied in the aforesaid manner, or if the backlog of work is so great that it cannot be remedied without incurring additional cost which the Owner does not authorize, then the time of completion and the Construction Schedule shall be extended pursuant to a Change Order for the minimum period of delay occasioned by such cause. The period of delay and extension shall be determined by the Owner.

(b) Notwithstanding the foregoing Paragraph (a), no extension of time shall be granted for any delay the cause of which occurs more than seven (7) days before claim therefor is made in writing by the Contractor to the Owner, and no extension of time shall be granted if the Contractor could have avoided the need for such extension by the exercise of reasonable care and foresight. In the case of a continuing cause of delay, only one claim is necessary.

(c) Weather shall not constitute a cause for granting an extension of time.

(d) Except to the extent that a delay is caused by the Owner, the Contractor's sole remedy shall consist of his rights under this Article VI.

ARTICLE VII

Changes in the Work

(a) The Owner may make changes within the general scope of the Contract by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such changes in the Work shall be executed under the conditions of the Contract. No extra work or change shall be made except pursuant to a Change Order from the Owner in accordance with the General Conditions. Any claim for an increase in the Contract Sum resulting from any such change in the Work shall be made by the Contractor in accordance with the General Conditions.

(b) If the requested change would result in a delay in the Construction Schedule, the provisions of Paragraph (c) of Article V and of Article VI hereof shall apply. If the requested change would result in a decrease in the time required to perform the Work, the completion date and the Construction Schedule shall be adjusted by agreement between the parties to reflect such decrease.

(c) Any adjustment in the Contract Sum for duly authorized extra work or change in the Work shall be determined based on the unit prices previously specified, to the extent such unit prices are applicable. To the extent such unit prices are not applicable, the adjustment in the Contract Sum shall, at the option of the Owner, be determined by an acceptable lump sum properly itemized and supported by sufficient substantiating data to permit evaluation, or by an acceptable cost plus percentage or fixed fee.

ARTICLE VIII

Termination by Owner

(a) If the Contractor is adjudged a bankrupt, or if the Contractor makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of the Contractor's insolvency, or if the Contractor persistently or repeatedly fails, except in cases for which extension of time is provided, to make progress in accordance with the Construction Schedule, or if the Contractor fails to make prompt payment to Subcontractors for material or labor, or persistently disregards laws, ordinances or the instructions of the Owner, or otherwise breaches any provision of the Contract, the Owner may, without prejudice to any other right or remedy, by giving written notice to the Contractor and his Surety, terminate the Contract, take

possession of the Work and of all materials and equipment thereon and finish the Work by whatever method the Owner may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Sum shall exceed the expenses of finishing the Work, including additional architectural, managerial and administrative expenses, such excess shall be paid to the Contractor. If such expenses shall exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner promptly upon demand.

In the event of termination pursuant to this Paragraph, the Contractor, upon the request of the Owner, shall promptly

(i) assign to the Owner in the manner and to the extent directed by the Owner all right, title and interest of the Contractor under any subcontracts, purchase orders and construction equipment leases to which the Contractor is a party and which relate to the Work or to construction equipment required therefor, and

(ii) make available to the Owner, to the extent directed by the Owner, all construction equipment owned by the Contractor and employed in connection with the Work.

(b) Performance of the Work hereunder may be terminated by the Owner by giving three (3) days prior written notice to the Contractor if the Owner, in its sole discretion, decides to discontinue or suspend construction. In the event of such termination, as opposed to termination pursuant to Paragraph (a) of this Article VIII, the Contract Sum shall be reduced in an equitable manner by agreement between the parties. The Contractor will not be entitled to payment of profit on work not performed.

ARTICLE IX

Contractor's Liability Insurance

The Contractor shall purchase and maintain in full force and effect the following insurance coverage with an insurance carrier acceptable to the Owner:

The policy shall be endorsed to cover the contractual liability of the Contractor under the General Conditions.

The Contractor and his Subcontractors shall procure and maintain during the life of this Agreement insurance of the types and minimum amounts as follows:

(a) Workers' Compensation in full compliance with statutory requirements of Federal and State of Missouri law and Employers' Liability coverage in the amount of $2,000,000.

(b) Comprehensive General Liability and Bodily Injury

Including Death:	$2,000,000 each person
	$2,000,000 each occurrence
Property Damage:	$2,000,000 each occurrence
	$2,000,000 aggregate

(c) Comprehensive Automobile Liability, Bodily Injury

Including Death:	$2,000,000 each person
	$2,000,000 each occurrence
Property Damage:	$2,000,000 each accident

(d) Owner's Protective Bodily Injury

Including Death:	$2,000,000 each occurrence
Property Damage:	$2,000,000 each occurrence
	$2,000,000 aggregate

The Owner's Protective Policy shall name the Owner as the insured. Certificates evidencing such insurance shall be furnished the Owner prior to Contractor commencing the Work on this Project. The certificates must state, **"The City of New Haven, the Engineer and their Officers and Employees, are included as an additional insured as required by written contract under the General Liability Policy with respect to work performed by the named insured on the above listed project."**

ARTICLE X

Enumeration of The Contract Documents

The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

(a) Owner-Contractor Agreement
(b) General Conditions of the Owner-Contractor Agreement
(c) Supplementary or other Conditions of the Contract as follows:
Job Special Provisions
(d) The Specifications dated: February 2011
(e) The Drawings identified as follows:
Miller Street Improvements Phase 1 & 2, STP-5401(628), City of New Haven
(f) Performance and Payment Bond
(g) Construction Schedule
(h) State Wage Determination
(i) Non-Collusion Affidavit
(j) Subcontractor Approval Form
(k) The Addenda, if any, are as follows:

(l) Other documents, if any, forming part of the Contract Documents are as follows:
Bid Form Proposal
Project Manual

* In making out this form the title that is not applicable should be struck out. For example, if the Contractor is a corporation and this form is to be executed by its president, the words "sole owner, a partner, secretary, etc." should be struck out.

THE CONTRACT CONTAINS A BINDING ARBITRATION PROVISION, WHICH MAY BE ENFORCED BY THE PARTIES.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement:

_____
Owner

By_____

_____
(Print Name)

(SEAL)

Attest: _____

_____
(Print Name)

Date:_____

_____
Title

By _____
"Contractor"

(SEAL)

Attest:_____

Date:_____

FORM OF CONTRACT PERFORMANCE - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____, as Principal, and _____, as Surety, are held and firmly bound unto the _____, hereinafter called the "Owner," in the penal sum of _____ Dollars ($_____) lawful money of the United States, well and truly to be paid unto the said Owner for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has by written agreement dated _____, entered into a Contract with the Owner for the construction of the work designated as _____ located at _____ in the State of Missouri, in accordance with the General Conditions of Contract by this reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal shall faithfully perform the Contract on its part and satisfy all claims and demands incurred by the Principal in the performance of the Contract and shall fully indemnify and save harmless the Owner from all costs and damages which the Owner may suffer by reason of the failure of the Principal to do so, and shall fully reimburse and repay to the Owner all costs, damages, and expenses which the Owner may incur in making good any default by the Principal including, but not limited to, any costs based upon the failure of the Principal to fulfill its obligation to furnish maintenance, repairs or replacements for any period of time after the Work is completed as provided for in the Contract and shall for use in the prosecution of the Work required by the Contract whether by subcontract or otherwise, and shall pay all valid claims and demands which may arise and shall defend, indemnify and hold harmless the Owner and its agents against loss or expense from bodily injury, including death, or damage or destruction of property, including loss of use resulting therefrom, arising out of or resulting from the performance of the Work, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

The Owner may sue on this Bond, and any person furnishing material or performing labor, either as an individual or as a Subcontractor shall have the right to sue on this Bond in the name of the Owner for its use and benefit, all in accordance with the provisions of MO. Rev. Stat. SS 522.300 and any amendments thereto.

Whenever Principal shall be in default under the Contract, the Surety shall promptly remedy the default, or shall promptly, (1) complete the Contract in accordance with its terms and conditions, or (2) obtain bids for completing the Contract in accordance with its terms and conditions, and upon determination by the Owner of the lowest responsible bidder, arrange for a Contract between the Owner and such bidder, and made available as the Work progresses sufficient funds to pay the costs of completion, not exceeding the amount of this Bond.

SAMPLE

It is hereby stipulated and agreed that any suit based upon any default of the Principal in fulfilling his obligation to furnish maintenance, repairs or replacements for any period of time after the Work is completed as provided for in the Contract, may be brought at any time up to one year after the expiration of the time specified in the Contract during which the Contractor has agreed to furnish such maintenance or make such repairs or replacements.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration of addition to the terms of the Contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

Signed and sealed this _____ day of _____, 20____.

In the presence of : _____(SEAL)

_____ By: _____

_____(SEAL)

_____

SAMPLE

The successful bidder shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of the Contract, and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the Contract Sum as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The Surety shall be a company licensed to do business in the State of Missouri and shall be acceptable to the Owner. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments, however if combined into one the amount shall be for two hundred percent (200%) of the Contract

GENERAL CONDITIONS OF OWNER-CONTRACTOR AGREEMENT

ARTICLE 1

CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.1 The Contract Documents. The Contract Documents include the Owner-Contractor Agreement, General Conditions of the Owner-Contractor Agreement, State Wage Determination, Non-Collusion Affidavit, the Performance Payment Bond, the Drawings, the Specifications, the Construction Schedule, all Addenda and all Modifications issued after execution of the Contact. A Modification is (1) a written amendment to the Contract signed by both parties, or (2) a written Change Order.

1.1.2 The Contract. The Contract Documents form the Contract. The Contract represents the entire and integrated Agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, both written and oral, including the Bidding Documents. The Contract may be amended or modified only by a Modification as defined in Subparagraph 1.1.1.

1.1.3 The Work. The term Work means the construction and services required or reasonably inferable from the Contract Documents, and includes all labor necessary to complete the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in such construction.

1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.

1.1.5 Notice to Proceed. The written notice from the Owner notifying the Contractor of the date on or before which he is to begin execution of the Work.

1.2 EXECUTION, CORRELATION, INTENT AND INTERPRETATIONS

1.2.1 The Contract Documents shall be signed in not less than triplicate by the Owner and Contractor.

1.2.2 The Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.

1.2.3 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. The intention of the Contract Documents is to include all labor, materials, equipment and other items as provided in Subparagraph 3.3 necessary for execution and completion of the Work. Words which have well-known technical or trade meanings are used herein in accordance with such recognized meanings.

1.2.4 In the event of any conflict or inconsistency in the Contract Documents, the better quality and quantity of Work, as determined by the Engineer, shall be provided without change in the Contract Sum.

1.3 COPIES FURNISHED AND OWNERSHIP

1.3.1 Unless otherwise provided in the Contract Documents, the Contractor will be furnished a maximum of three (3) copies, free of charge, of the Drawings and Specifications for the execution of the Work.

1.3.2 All Drawings, Specifications and copies thereof furnished by the Owner are and shall at all times remain property of the Owner. Such documents shall not be used on any other project.

1.3.3 For informational purposes only, the Geotech and Environmental Reports have been prepared at the Owners request. These reports are available upon request from the Engineer, but are not intended to be, or construed as Contract Documents.

ARTICLE 2

OWNER

2.1 DEFINITION

2.1.1 The Owner is the person or organization identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Owner" means the Owner or its authorized representative.

2.2 OWNER'S RIGHT TO STOP THE WORK

2.2.1 If the Contractor fails to correct defective work, or fails to supply labor, materials or equipment in accordance with the Contract Documents, the Owner may order the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated; however, the Owner's right to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any third party.

2.3 OWNER'S RIGHT TO CARRY OUT THE WORK

2.3.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, or fails to perform any provision of the Contract, the Owner may, after seven (7) days' written notice to the Contractor and without prejudice to any other remedy he may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner promptly upon request.

2.4 ENGINEER'S STATUS DURING CONSTRUCTION

2.4.1 The Engineer will be Owner's representative during the construction period.

2.4.2 Engineer will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. He shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work.

2.4.3 Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim in writing therefore.

2.4.4 Engineer will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection or test or has been damaged prior to approval of final payment). He will also have authority to require special inspection or testing of the Work whether or not the Work is fabricated, installed or completed.

2.4.5 If Owner and Engineer agree, Engineer will furnish a Resident Project Representative and assistants to assist Engineer in carrying out his responsibilities at the site.

2.4.6 Neither Engineer's authority to act in the Contract documents nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of Engineer to Contractor, any Subcontractor, any material man, fabricator, supplier or any of their agents or employees or any other person performing any of the Work.

2.4.7 Engineer will not be responsible for Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and he will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

2.4.8 Engineer will not be responsible for the acts or omissions of Contractor, or any Subcontractors, or any of his or their agents or employees, or any other persons at the site or otherwise performing any of the Work.

ARTICLE 3

CONTRACTOR

3.1 DEFINITION

3.1.1 The Contractor is the person or organization identified as such in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term "Contractor" means the Contractor or his authorized representative.

3.2 SUPERVISION AND CONSTRUCTION PROCEDURES

3.2.1 The Contractor shall perform the Work in accordance with the Contract Documents, and shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work, and shall be solely responsible for job-site safety precautions, procedures and programs.

3.3 LABOR AND MATERIALS

3.3.1 Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.

3.3.2 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. If the Owner reasonably objects to any person employed by the Contractor, the employee shall be immediately dismissed.

3.3.3 The Contractor shall comply with, and is bound by, the provisions of Missouri law pertaining to the payment of wages on public works projects contained in MO.Rev.Stat. SS290.210 (2000) through 290.340 (2000), and any amendments thereto, including, but not limited to the following:

1. In accordance with MO.Rev.Stat. S290.250 (2000), the Contractor shall not pay less than the prevailing hourly rate of wages specified by the Missouri Department of Labor and Industrial Relations Division of Labor Standards to all workers performing Work under the Contract.

2. In accordance with MO.Rev.Stat. S290.250 (2000), the Contractor shall forfeit as a penalty to the Owner ten dollars ($10.00) for each worker employed for each calendar day, or portion thereof, such worker is paid less than the said stipulated rates for any Work done under the Contract, by him or by any Subcontractor under him and shall include provisions in all bonds guaranteeing the faithful performance of said prevailing hourly wage clause.

3. In accordance with MO.Rev.Stat. S290.265 (2000), the Contractor and each Subcontractor shall post a clearly legible statement of all prevailing hourly wage rates to be paid to all workers employed to complete the Work in a prominent and easily accessible place at the site of the Work and such notice shall remain posted during the full time that any workers shall be employed on the Work.

Certified payrolls shall also be submitted prior to final payment for all work completed by the Contractor or Subcontractors.

4. In accordance with MO.Rev.Stat. S290.290 (2000), before final payment is made an affidavit must be filed by the Contractor stating that he has fully complied with the prevailing wage law. Final payment shall not be due unless and until this affidavit is filed in proper form and order.

3.3.4 Missouri law, 292.675 RSMo, requires the Contractor and its subcontractor(s) to provide a ten-hour occupational safety and health administration (OSHA) construction safety program (or a similar program approved by the Missouri Department of Labor and Industrial Relations as a qualified substitute) for their on-site employees (laborers, workmen, drivers, equipment operators, and craftsmen) who have not previously completed such a program and are directly engaged in actual construction of the improvement (or working at a nearby or adjacent facility used for construction of the improvement). The Contractor and its subcontractor(s) shall require all such employees to complete this ten-hour program, pursuant to 292.675 RSMo, unless they hold documentation on their prior completion of said program. Penalties for non-compliance include Contractor forfeiture to the City of New Haven in the amount of $2,500, plus $100 per contractor and subcontractor employee for each calendar day such employee is employed beyond the elapsed time period for required program completion under 292.675 RSMo.

3.3.5 The Contractor shall execute and complete the Work in such a manner that avoids jurisdictional and other disputes among labor unions.

3.3.6 When state and federal wage rates are both required the higher of the two for each job classification shall be used.

3.4 WARRANTY

3.4.1 Contractor warrants that it shall use sound construction principles and practices in the performance of the Work and that it shall apply to the Work a high degree of skill, care, judgment and supervision to assure that the Work is performed properly and in accordance with the Contract Documents.

3.4.2 The Contractor agrees to assign to the Owner at the time of final completion of the Work, all manufacturer's warranties relating to materials and labor used in the Work and further agrees to perform the Work so as to preserve all such warranties.

3.4.3 Owner's rights under Section 3.4 are in addition to all other rights or remedies which it may have under the Contract or at law or equity.

3.5 PERMITS, FEES AND NOTICES

3.5.1 The Contractor shall secure and pay for all permits, governmental fees and licenses necessary for the proper execution and completion of the Work.

3.5.2 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the Work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner in writing and any necessary changes shall be adjusted by appropriate Modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the Owner, the Contractor shall assume full responsibility thereof and shall bear all costs attributable thereto.

3.6 SUPERINTENDENT

3.6.1 The Contractor shall employ a competent superintendent who shall be in attendance at the Project site during performance of the Work. This person shall be a superintendent who will be responsible for the satisfactory progression of the Work and to ensure that all Work is being completed in accordance with the Drawings and Specifications. He is also to relay any conflicts or discrepancies that arise in the Drawings to the Owner's representative for resolution or interpretation. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor.

3.7 RESPONSIBILITY FOR THOSE PERFORMING THE WORK

3.7.1 The Contractor shall be responsible to the Owner for the acts and omissions of all his employees and all Subcontractors, their agents and employees and all other persons performing any of the Work under the Contract with the Contractor.

3.8 DRAWINGS AND SPECIFICATIONS AT THE SITE

3.8.1 The Contractor shall maintain at the site for the Owner, one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other Modifications, in good order and marked to record all changes made during construction. The as-built Drawings, marked to record all changes made during construction, shall be delivered to the Owner upon completion of the Work.

3.9 CLEANING UP

3.9.1 The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. The Contractor shall not "stockpile" any material on the jobsite and all excavated material shall be hauled off the site at the time of excavation. However, stockpiling of materials delivered and used on the same day will be allowed if all materials are in place or removed at the end of the day.

3.9.2 The Contractor is responsible for securing his own project storage site which shall not be located on Owner's property without prior written consent of the Owner. After completion of the Work the Contractor shall remove all remaining waste materials and rubbish from and about the Project as well as all tools, construction equipment, machinery and surplus materials, and shall clean all surfaces and leave the Work "broomclean" or its equivalent, except as otherwise specified.

3.10 INDEMNIFICATION

3.10.1 The Contractor shall indemnify and hold harmless the Owner and its agents and employees from and against any and all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the Work, including, but not limited to, any such claim, damage, loss or expense that is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, except to the extent that such claims, damages or losses are caused by the negligent act or omission of the Owner.

3.10.2 In any and all claims against the Owner or any of its agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any one of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 3.10 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under Worker's Compensation acts, disability benefit acts or other employee benefit acts.

3.11 CASH ALLOWANCES

3.11.1 The Contractor acknowledges and agrees that the Contract Sum includes all cash allowances specified in the Contract Documents.

ARTICLE 4

SUBCONTRACTORS

4.1 DEFINITION

4.1.1 A Subcontractor is a person or organization who has a direct contract with the Contractor to perform any of the Work. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

4.1.2 Second Tier Subcontracting will not be permitted on this project. It is the Contractor's responsibility to insure that his subcontractors do not, in turn, subcontract any portion of the work.

4.1.3 Nothing contained in the Contract Documents shall create any contractual relation between the Owner and any Subcontractor.

4.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

4.2.1 Unless otherwise specified in the Contract Documents or in the Instructions to Bidders, the Contractor shall submit a completed and signed Subcontractor Approval Form, along with other required Bid Documents, to the Owner. Contractor shall complete and submit a Supplemental Subcontractor Approval Form to the Owner in the event of any substitution or addition of a Subcontractor by the Contractor. No work shall be performed by a Subcontractor until such Subcontractor has been approved by the Owner.

4.2.2 Prior to the award of the Contract, the Owner will notify the bidder in writing if the Owner, after due investigation, objects to any such person or entity proposed by the bidder pursuant to Subparagraph 4.2.1 above. If the Owner objects to any such proposed person or entity, the bidder may, at his option, (1) withdraw his bid, or (2) submit an acceptable substitute person or entity with no adjustment in his bid price.

4.2.3 Contractor shall not subcontract more than sixty-five percent (65%) of the total Contract cost.

4.2.4 The Owner reserves the right to reject a Subcontractor, if in the Owner's sole discretion, delays may result in the performance of work as a result of Subcontractor's other obligation. The Contractor shall be held responsible, in addition to the submission of the "Subcontractor Approval Form," to apprise the Owner of any additional work which a Subcontractor accrues throughout the duration of the project. This shall include work for the Owner under a different contract, or any other person or entity. If such said additional work shall detrimentally impact the progression of the Work under this Contract, the Owner retains the right to require the Contractor to submit a substitute Subcontractor for this work at no additional cost to the Owner.

4.2.5 The Contractor shall not contract with any Subcontractor or any person or organization (including those who are to furnish materials or equipment fabricated to a special design), for proposed proportions of the Work designated in the Contract Documents or in the Instruction to Bidders or, if none is so designated, with any Subcontractor proposed for the principal portions of the Work, who has been rejected by the Owner.

4.2.6 If the Owner requires a change of any proposed Subcontractor or person or organization during the execution of the Work approved under the present Contract, the Contract Sum shall be increased or decreased by the difference in cost resulting from such change and an appropriate Change Order shall be issued.

4.2.7 The Contractor shall not make any substitution for any proposed Subcontractor or person or organization who has not been accepted by the Owner prior to the Contract Award, unless the substitution is accepted by the Owner in writing prior to such substitution.

4.3 SUBCONTRACTUAL RELATIONS

4.3.1 All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate written agreement between the Contractor and Subcontractor which shall contain provisions that:

1. require the Work to be performed in accordance with the requirements of the Contract Documents;

2. require submission to the Contractor of applications for payment under each Subcontract to which the Contractor is a party, in reasonable time to enable the Contractor to apply for payment in accordance with Article VIII hereof;

3. require that all claims for additional costs, extensions of time, damages for delays or otherwise with respect to Subcontracted portions of the Work shall be submitted to the Contractor (via any Subcontractor) in sufficient time so that the Contractor may comply in the manner provided in the Contract Documents for like claims by the Contractor upon the Owner;

4. waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance described in Paragraph 10.2, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee under Paragraph 10.2;

5. obligate each Subcontractor specifically to consent to the provisions of this Paragraph 4.3; and

6. require the Subcontractor to indemnify and hold harmless the Owner against all claims, damages, losses, expenses and attorneys' fees arising out of or resulting from the performance of the Work by Subcontractor, and its agents and employees, except to the extent such claims, damages or losses are caused by the negligent act or omission of the Owner.

4.4 PAYMENTS TO SUBCONTRACTORS

4.4.1 The Contractor shall pay each Subcontractor upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's work, less the percentage retained from payments to the Contractor.

4.4.2 If the Owner withholds payment to the Contractor for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand for its Work to the extent completed.

4.4.3 The Owner shall not have any obligation to pay or to see to the payment of any sum to any Subcontractor.

ARTICLE 5

SEPARATE CONTRACTS

5.1 OWNER'S RIGHT TO AWARD SEPARATE CONTRACTS

5.1.1 The Owner reserves the right to award other contracts on other terms and conditions in connection with other portions of the Project.

5.2 MUTUAL RESPONSIBILITY OF CONTRACTORS

5.2.1 The Contractor shall afford other contractors reasonable opportunity for the delivery and storage of their materials and equipment and the execution of their work, and shall properly connect and coordinate the Work with theirs.

5.2.2 If any part of the Work depends for proper execution or results upon the work of any other separate contractor, the Contractor shall inspect and promptly report to the Owner any apparent discrepancies or defects in such work that render it unsuitable for proper execution of the Work. Failure of the Contractor to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper to receive the Work, except as to defects which may develop in the other contractor's work after the execution of the Contractor's Work that could not have been discovered by the Contractor upon reasonable inspection.

5.2.3 If the Contractor causes damage to the Work or property of any other contractor on the project, and such separate contractor sues the Owner or initiates a legal proceeding on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings at his own expense, and if any judgment or award against the Owner arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court costs which the Owner has incurred.

5.3 OWNER'S RIGHT TO CLEAN UP

5.3.1 If a dispute arises between the separate contractors as to their responsibility for cleaning up as required by Paragraph 3.9, the Owner may clean up and charge the cost thereof to the separate contractors.

ARTICLE 6

MISCELLANEOUS PROVISIONS

6.1 GOVERNING LAW

6.1.1 The Contract shall be governed by the laws of the State of Missouri.

6.2 SUCCESSORS AND ASSIGNS

6.2.1 The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract without the prior written consent of the other, nor shall the Contractor assign any sums due or to become due to him hereunder, without the prior written consent of the Owner.

6.3 NOTICES

6.3.1 Any notice to any party pursuant to or in relation to the Contract shall be in writing and shall be deemed to have been duly given when delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or when deposited in the United States mail, registered or certified with postage prepaid addressed to the last business address known to the party giving the notice.

6.4 RIGHTS AND REMEDIES

6.4.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

6.5 ROYALTIES AND PATENTS

6.5.1 The Contractor shall pay all royalties and license fees payable on all designs, processes or products used in connection with the Work or incorporated therein, unless otherwise agreed upon by the Owner. The Contractor shall defend all suits or claims for infringement of any patent rights and shall indemnify and hold the Owner harmless from and against any loss on account thereof.

6.6 TESTS

6.6.1 All Testing for product acceptance and associated costs shall be performed by the Owner.

6.6.2 The Owner will provide special inspection and testing services to verify the Work is performed in accordance with the Contract. The Owner will provide the Contractor with a listing of tests to be performed and approximate locations or frequency. The Contractor will be required to notify the Owner forty-eight (48) hours prior to the time the Contractor will be ready for specific tests required by the Owner.

6.7 PERFORMANCE AND PAYMENT BONDS

6.7.1 The Contractor shall furnish the Performance Bond and the Payment Bond required in the Instructions to Bidders.

6.8 SHOP DRAWINGS AND SUBMITTALS

6.8.1 The Contractor shall submit to the Engineer, with such promptness as to cause no delay in the performance of the work, copies of design drawings, specifications, shop drawings, equipment details, installation, operating, and maintenance instructions, wiring diagrams, parts lists, etc. No purchasing, fabrication, erection, processing or shipping of the aforementioned material or equipment may begin until the drawings or details have been reviewed by the Engineer. Regardless of corrections made in or approval given to such shop drawings or equipment submittals by the Engineer, the Contractor will be responsible for the accuracy of such drawings and for their conformity to the Drawings and Specifications.

ARTICLE 7

TIME

7.1 DEFINITIONS

7.1.1 The Contract Time is the period of time allotted in the Contract Documents for completion of the Work. Said Work shall include all punchlist items deemed necessary by the Owner. The date of completion of the Contract shall be the date when all work including Owner punchlist items have been approved in writing by the Owner.

7.1.2 The date of commencement of the Work is the date established in the written Notice to Proceed from the Owner to the Contractor.

7.1.3 The term "day" as used in the Contract Documents shall mean calendar day.

7.2 PROGRESS AND COMPLETION

7.2.1 All time limits stated in the Contract Documents are of the essence of the Contract.

7.2.2 The Contractor shall begin the Work on the date of commencement provided in the Owner-Contractor Agreement. The Contractor shall carry the Work forward expeditiously with adequate forces and shall complete it within the Contract Time and in accordance with the Construction Schedule.

ARTICLE 8

PAYMENTS AND COMPLETION

8.1 CONTRACT SUM

8.1.1 The Contract Sum is stated in the Owner-Contractor Agreement and is the total amount payable by the Owner to the Contractor for the performance of the Work.

8.2 APPLICATION FOR PAYMENT

8.2.1 By 12:00 P.M. on or before the twentieth of the month, upon substantial completion of various stages of the Work, and upon final completion of the Work, the Contractor shall submit to the Owner an itemized Application for Payment pursuant to the Owner-Contractor Agreement on such forms and supported by such data substantiating the Contractor's right to payment as the Owner may require.

8.2.2 If payments are to be made on account of materials or equipment to be incorporated into the Work and delivered and suitably stored at the site, such payments shall be conditioned upon submission by the Contractor of bills of sale or such other documents satisfactory to the Owner to establish the Owner's title to such materials or equipment or to otherwise protect the Owner's interest.

8.2.3 The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated into the Work or not, will pass to the Owner upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances (hereinafter referred to as "liens").

8.3. PAYMENT

8.3.1 If the Contractor has made Application for Payment as above, the Owner will, in accordance with the Owner-Contractor Agreement, make payment to the Contractor for such amount as it determines to be properly due pursuant to the Contractor's Application for Payment, or state in writing the Owner's reasons for withholding all or any portion of such payment.

8.3.2 No progress payment, nor any partial or entire use or occupancy of the Work by the Owner, shall constitute an acceptance of any Work not completed in accordance with the Contract Documents.

8.4 COMPLETION AND FINAL PAYMENT

8.4.1 Upon receipt of written notice from the Contractor that the Work is fully completed and ready for final inspection and acceptance, and upon receipt of a final Application for Payment, the Owner will promptly make such inspection and, when the Owner finds the Work acceptable under the Contract Documents and the Contract fully performed, the Owner will make final payment to the Contractor in accordance with the Owner-Contractor Agreement.

8.4.2 The final payment shall not become due until the Contractor submits to the Owner (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness incurred in

connection with the execution and completion of the Work for which the Owner or its property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of the Surety, if any, to final payment, (3) an affidavit stating the Contractor has fully complied with the provisions and requirements of the Prevailing Wage Law, Section 290.210 through 290.340 as amended by MO.Rev.Stat. 1969, and (4) if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner indemnifying the Owner against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

8.4.3 The acceptance of final payment shall constitute a waiver of all claims by the Contractor, except those previously made in writing and still unsettled.

ARTICLE 9

PROTECTION OF PERSONS AND PROPERTY

9.1 SAFETY PRECAUTIONS AND PROGRAMS

9.1.1 The Contractor shall initiate, maintain and supervise safety precautions and programs in connection with the performance of the Work.

9.2 SAFETY OF PERSONS AND PROPERTY

9.2.1 The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. all employees on the Work and all other persons who may be affected thereby;

2. all the Work, all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors or Sub-subcontractors; and

3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

9.2.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction over the safety of persons or property to protect them from damage, injury or loss. The Contractor shall erect and maintain all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Owner and users of adjacent utilities. The Contractor shall provide signs, barrels, or any other safety devices which the Owner deems necessary for public safety. No additional payment will be made and this work shall be considered incidental to the Contract. The Owner will place safety devices as it deems necessary if the Contractor fails to provide the required items within 24 hours of notification. The Contract Sum shall be reduced by the cost of these devices.

9.2.3 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

9.2.4 All damage or loss to any property caused in whole or in part by the Contractor, any Subcontractor, or any Sub-subcontractor, or anyone directly or indirectly employed by anyone for whose acts they may be liable, shall be remedied by the Contractor. The Owner shall document any complaint by any person regarding damage or loss to property caused by Contractor by requesting such complainant to complete a Damage Claim Form. A copy of the Damage Claim Form shall be submitted by the Owner to the Contractor and the Contractor shall correct the problem, repair such damage or otherwise compensate the complainant or file a claim for such damage with Contractor's insurance company within ten (10) days of the receipt of the Damage Claim Form from the Owner. If the Owner shall have a legitimate basis for believing that such claim is valid, the Owner shall have the option to withhold payment of funds until (i) such damages are repaired; or (ii) the Owner has been provided with evidence that the Contractor has made restitution to the complainant.

9.2.5 The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner.

ARTICLE 10

INSURANCE

10.1 CONTRACTOR'S LIABILITY INSURANCE

10.1.1 The Contractor shall purchase and maintain such insurance required in the Owner-Contractor Agreement to protect him from claims which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

10.1.2 The insurance shall be written for not less than any limits of liability specified in the Owner-Contractor Agreement, or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under Paragraph 3.10.

10.1.3 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. Certificate of Insurance must state: **"The City of New Haven, the Engineer and their Officers and Employees, are included as an additional insured as required by written contract under the General Liability Policy with respect to work performed by the named insured on the above listed project."** These Certificates shall contain a provision that coverage afforded under the policies will not be cancelled until at least fifteen days prior written notice has been given to the Owner.

10.2 PROPERTY INSURANCE

10.2.1 Unless otherwise provided, the Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work and shall insure against the perils of fire, extended coverage, vandalism and malicious mischief.

10.2.2 The Contractor shall purchase and maintain such machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

10.2.3 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the work. Certificates of Insurance must state on the certificate: **"The City of New Haven, the Engineer and their Officers and Employees, are included as an additional insured as required by written contract under the General Liability Policy with respect to work performed by the named insured on the above listed project."** These Certificates shall contain a provision that coverage afforded under the policies will not be cancelled until at least fifteen days' prior written notice has been given to the Owner.

10.2.4 Any loss insured by property insurance maintained by the Owner shall be adjusted with the Owner and made payable to the Owner as trustee for the insured, as their interests may appear, subject to the requirements of any applicable mortgagee clause.

10.2.5 The Owner and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance provided under this Paragraph 10.2 and the Contract Documents, Owner-Contractor Agreement, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee. The Contractor shall require similar waivers by Sub-contractors and Sub-subcontractors in accordance with Subparagraph 4.3.1.

ARTICLE 11

REQUEST FOR INFORMATION

11.1 GENERAL

11.1.1 Request for Information Submittal

1. The Contractor shall submit requests for information for conditions requiring clarification of the Contract Documents utilizing the RFI form provided by the Engineer included in the bid documents. The Engineer will not respond to requests for information unless this format is utilized and all appropriate information is provided. Faxed or emailed RFIs are acceptable.

2. Do not use Request for Information process during bidding phase. For questions during bidding phase, refer to Invitation to Bid issued by the Engineer or Owner.

A. Subcontractors, manufacturers, and suppliers shall submit request for additional information and clarification to the prime Contractor. The Contractor shall then submit to the Engineer as provided in this section.

B. Contractor shall contact the Engineer, as applicable, with requests for additional information or clarification. The Engineer will not accept requests for information or clarification submitted directly from subcontractors, manufacturers, or suppliers.

C. The Engineer will provide a response to Contractor within three (3) working days of receipt of the RFI submitted per this section.

D. The Engineer response shall not be considered as a Change Order or Change Directive, nor does it authorize changes in the Contract Sum or Contract Time.

ARTICLE 12

CHANGES IN THE WORK

12.1 CHANGE ORDERS

12.1.1 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, with the Contract Sum and the Construction Schedule being adjusted in accordance with the Owner-Contractor Agreement. All such changes in the Work shall be authorized by Change Order, and shall be executed and performed under the applicable conditions of the Contract Documents.

12.1.2 A Change Order is a written order to the Contractor signed by the Owner, issued after the execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Construction Schedule. The Contract Sum and the Contract Time may be changed only by Change Order. The Contractor shall receive no compensation or extension of time for performing any additional or extra work unless Contractor receives a written Change Order or other written direction signed by the Owner before performing such work.

12.1.3 The cost or credit to the Owner resulting from a change in the Work shall be determined in accordance with the Owner-Contractor Agreement.

12.2 MINOR CHANGES IN THE WORK

12.2.1 The Owner shall have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or the Construction Schedule and not inconsistent with the intent of the Contract Documents. Such changes may be effected by written Field Order or by other written order. Such changes shall be binding on the Owner and the Contractor.

12.3 CLAIMS AND DISPUTES

12.3.1 If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner written notice thereof within seven (7) days after the occurrence of the event-giving rise to such claim. This notice shall be given by the Contractor before proceeding to

execute the Work. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined in accordance with Paragraph 12.3.5. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

12.3.2 The Contractor shall carry on the Work and adhere to the Construction Schedule pending all disputes or disagreements with the Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements. The Owner agrees to pay the Contractor, in accordance with the Contract Documents, for Work performed that is not subject to dispute or disagreement.

12.3.3 If conditions are encountered at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, then the Contractor shall give written notice thereof to the Owner before the conditions are disturbed and in no event later than seven (7) days after first observance of the conditions. The Owner will promptly investigate such conditions and, if they differ materially from those indicated in the Contract Documents and cause an increase or decrease in the Contractor's cost of or time required for performance of the Work, will adjust the Contract Sum or the Contract Time, or both. If the Owner and the Contractor cannot agree on the amount of the adjustment to the Contract Sum or the Contract Time, it shall be determined in accordance with Paragraph 12.3.5.

12.3.4 If the Contractor wishes to make a claim for an increase in the Contract Time, he shall give the Owner written notice thereof within seven (7) days after the occurrence of the event-giving rise to such claim. Adjustment to the Contract Time shall be in accordance with Article VI of the Owner-Contractor Agreement.

12.3.5

a. All claims, counterclaims, disputes and other matters in question between the parties hereto arising out of or relating to this Agreement or the breach thereof will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This Agreement to arbitrate and any other agreement or consent to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction. The location of the arbitration will be Franklin County, Missouri.

b. Notice of demand for arbitration must be filed in writing with the other party to this Agreement and with the American Arbitration Association. The demand must be made within a reasonable time after the claim, dispute or other matter in questions has arisen. In no event may the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

c. No arbitration arising out or related to this Agreement shall include, by joinder, consolidation or other manner, any person not a party to this Agreement.

d. The award rendered by the arbitrators will be final, judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to modification or appeal except to the extent permitted by Sections 10 and 11 of the Federal Arbitration Act (9 U. S. C. Sections 10 and 11).

e. Unless otherwise agreed in writing, Contractor shall carry on the Work and maintain its progress during any arbitration proceedings, and the Owner shall continue to make payments to Contractor in accordance with this Agreement. This Paragraph 12.3.5 shall survive completion or termination of this Agreement.

f. Prior to the exercise of any rights or remedies described in this Paragraph, Owner and Contractor agree that if any claim or dispute arising out of this Agreement or the breach cannot be settled through direct discussions, they agree to first endeavor to settle the claim or dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association then in effect.

ARTICLE 13

UNCOVERING AND CORRECTION OF WORK

13.1 UNCOVERING OF WORK

13.1.1 If any Work should be covered contrary to the request of the Owner, it must, if required by the Owner, be uncovered for his observation and replaced, at the Contractor's expense.

13.1.2 If any Work has been covered which the Owner has not specifically requested to observe prior to being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is found to be in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work be found not in accordance with the Contract Documents, the Contractor shall pay such costs.

13.2 CORRECTION OF WORK

13.2.1 The Contractor shall promptly correct all Work rejected by the Owner as defective or as failing to conform to the Contract Documents, whether observed before or after substantial completion of the Work, and whether or not fabricated, installed or completed. The Contractor shall bear all cost of correcting such rejected Work.

13.2.2 All such defective or non-conforming Work under Subparagraphs 13.2.1 shall be removed from the site if necessary, and the Work shall be corrected to comply with the Contract Documents without additional cost to the Owner.

13.2.3 The Contractor shall bear the cost of making good all work of separate contractors destroyed or damaged by such removal or correction.

13.2.4 If the Contractor fails to correct such defective or non-conforming Work, the Owner may correct it in accordance with Paragraph 2.3.

13.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK

13.3.1 If the Owner prefers to accept defective or non-conforming Work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect

an appropriate reduction in the Contract Sum or, if the amount is determined after final payment, it shall be paid by the Contractor.

ARTICLE 14

SPECIAL PROVISIONS

14.1 SCHEDULING OF WORK AND INTERFERENCE WITH TRAFFIC

14.1.1 The Contractor's Work must be scheduled and accomplished in stages such that local traffic is maintained during construction. It shall be the Contractor's responsibility to provide a traffic way that is usable in all weather conditions. The Contractor shall construct and maintain, in a safe condition, temporary pavements and connections for local traffic.

14.1.2 Temporary guardrail, or other suitable temporary barriers shall be provided to protect traffic from the Work at all times until final acceptance of the Work. The Contractor shall provide and maintain such signs, lights, watchmen and barriers, in addition to the temporary guardrail, as may be necessary to properly protect the Work and provide for safe and convenient public travel.

14.1.3 No additional payment shall be made for temporary guardrail, barriers, signs, lights, or other work as may be necessary to maintain traffic and to protect the Work and the public and all labor, equipment and material necessary to accomplish this task shall be considered incidental.

14.2 ACCESS

14.2.1 Areas of intersections and roadways within the construction limits shall be constructed in phases so that at no time will access be denied.

14.2.2 Access to private driveways will be limited by the nature of the Work. The Contractor shall schedule his work such that at no time during the life of this Contract will any driveway be denied access for any reason other than the curing of the pavement

All temporary materials used for access will be the responsibility of the Contractor and shall be included in his unit bid price for each related item. No separate payment will be made for the placement, maintenance or removal of said access.

If said access is not supplied as set out above, the Owner will supply said access with its own forces, without notification to the Contractor, and will deduct such costs from the sums due the Contractor, notwithstanding any other provisions given this Contract. Wherever excavation affects pedestrian access to houses or public buildings, plank or other suitable bridges shall be placed at convenient intervals.

14.3 PRECONSTRUCTION CONFERENCE

14.3.1 A preconstruction conference may be held prior to the issuance of a Notice to Proceed with the Work. This meeting will be attended by the Contractor, the Owner, and representatives of the various utility companies that have facilities in the project area. The meeting date will be established after the taking of bids and at a time convenient to all parties.

14.4 SEQUENCE OF WORK

14.4.1 A schedule of the Contractor's Work shall be submitted to the Owner for approval as required under Article V of the Owner-Contractor Agreement. It shall contain a listing of the order in which the Contract items will be constructed and the approximate dates for starting and finishing each Contract item.

14.4.2 The Contractor shall furnish the Owner his proposed sequence and schedule for the completion of all Work for their review and approval prior to the time of the preconstruction conference. The Owner shall have the right to specify the order of construction as deemed necessary.

14.5 CONSTRUCTION LIMITS

14.11.1 The construction limits consist of the public rights-of-way and acquired easement areas. The Contractor shall limit his operations accordingly. The Contractor shall acquire the property owners' permission for any activity outside the public right-of-way or easement areas.

14.6 ALTERED QUANTITIES

14.6.1 The Owner reserves the right to make changes in plan details which may vary the accepted quantities from those shown on the Itemized Bid Form.

14.6.2 The Contractor shall accept, as payment in full, payment at the original Contract unit bid prices for the accepted quantities of work done. No allowance will be made for any increase expense or loss of expected profit suffered by the Contractor resulting directly from such altered quantities or indirectly from expenses derived by handling small quantities of materials or performing operations within restricted areas. No allowance shall be made for any increased expense or loss of expected profit suffered because of the anticipated use of specific equipment which was not used.

14.7 ADDITIONS TO CONTRACT

14.7.1 Unit prices in this Contract may be used to negotiate a Change Order for additional work involving similar projects.

14.8 PURCHASE OF MATERIALS AND EQUIPMENT

14.8.1 Sales to contractors who purchase construction materials and supplies to fulfill their contracts for exempt organizations are not subject to sales tax provided the exempt organizations furnish a copy of their current Exemption Letter and a project Exemption Certificate to the contractor authorizing the purchases for the project. The exempt organization may monitor all supplies purchased, used, and consumed in fulfilling the project.

14.8.2 A project Exemption Certificate shall include, but may not be limited to, the following:

1. The exempt entity's name, address, Missouri Tax Identification Number and signature of authorized representative of the exempt entity;

2. The project location, description and unique identification number;

3. Date the Contract is entered into;

4. The estimated project completion date; and

5. The certificate expiration date.

14.8.3 Contractors must provide a copy of the exempt organization's Exemption Letter and the project Exemption Certificate to suppliers when purchasing materials and supplies to be consumed in the project.

14.8.4 Contractors are not exempt from sales tax on the purchase of machinery, equipment or tools used in fulfilling these contracts.

14.8.5 Suppliers shall render to the Contractor invoices bearing the name of the exempt organization and the project identification number. These invoices must be retained by the purchasing Contractor for a period of five (5) years.

14.8.6 Contractors must file a sales tax return for all excess resalable materials and supplies which are not returned to the supplier. This return must be filed and paid not later than the due date of the Contractor's sales tax return following the month in which the contractor determines that the materials were not used in the project.

14.8.7 An exempt organization that fails to revise the project Exemption Certificate expiration date as necessary to complete any Work required by the Contract will be liable for any sales tax due as determined by an audit of the Contractor.

14.9 TESTING

14.9.1 Materials Testing and Inspection Service: Owner may employ and pay for a qualified independent materials and geotechnical testing laboratory to perform testing and inspection service during construction operations. Contractor shall coordinate all Work and cooperate to allow for testing procedures as required by the Owner.

14.10 TECHNICAL SPECIFICATIONS

14.10.1 Where the term "Standard Specifications" is used, such reference shall mean the 2004 edition of the Missouri Standard Specifications for Highway Construction, except as otherwise provided in the contract documents. Where reference is made to a specific part of the Standard Specifications, such applicable part shall be considered as part of this Section of the Specifications. In case of conflict in the requirements of the Standard Specifications and the requirements stated herein, the requirements here shall prevail. The QA/QC testing requirements are waived for this project.

14.11 INSPECTION BY MoDOT AND FHWA

14.11.1 Representatives of the Missouri Department of Transportation and the Federal Highway Administration may make inspection of the work and the Contractor shall grant them access to all parts of the work.

14.12 CONSTRUCTION STAKING

14.12.1 The Contractor shall be responsible for construction staking on this project.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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ATTACHMENTS

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed

in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA

each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of

a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this

transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

*****

2. **Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and

frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS
(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

BUY AMERICA POLICY

106.9 Buy America Requirement. On all federal-aid projects, the contractor's attention is directed to Title 23, CFR, titled *Buy America Requirements*. Where steel or iron products are to be permanently incorporated into the contract work, steel and iron material shall be manufactured in the USA except for "minor usage" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. The use of pig iron and processed, pelletized and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

106.9.1 Any sources other than the USA as defined will be considered foreign. The required domestic manufacturing process shall include formation of ingots and any subsequent process. Coatings shall include any surface finish that protects or adds value to the product.

106.9.2 "Minor usage" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent of the total contract cost or $2500.00, whichever is greater. If foreign steel, iron or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

106.9.3 For each domestic permanent steel or iron item, the contractor shall furnish to the engineer for approval, a manufacturer's certification identifying the item and certifying that the manufacturing processes for the product occurred in the USA, including the coating process if applicable. For foreign items, a statement of the specific foreign manufacturing location(s) shall be provided.

106.9.4 Upon completion of the project, the contractor shall certify to the engineer that all steel, iron and coating processes for steel or iron incorporated into the contract work were in accordance with this specification, except as noted. All exceptions and associated costs shall be listed in the same document.

106.9.5 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

GUIDELINES FOR OBTAINING ENVIRONMENTAL CLEARANCE

For Project-Specific Locations such as:
Borrow Sites
Haul Roads
Burn Pits
Staging Areas
Spoil Sites

The necessary clearances for disturbed areas such as those referenced above shall be obtained prior to using these areas for projects. The contractor is encouraged to consider using material from previously disturbed locations (substantial disturbance) or disturbed areas that have previously been cleared, precluding the need to address most, if not all, of the issues described below. The contractor should include the Federal Project Number on all correspondence. The following addresses the primary environmental issues related to clearance of disturbed areas such as borrow sites:

THE ENDANGERED SPECIES ACT

The Federal Endangered Species Act protects rare species and their habitats. The Act is administered by the U.S. Fish and Wildlife Service (USFWS). Violations of this act can result in extensive project delays and severe fines. To determine if an activity will impact any rare species or their habitats, contact the Missouri Department of Conservation's Policy and Coordination Section at (573) 751-4115 to request a query of the MDC Heritage Database. All queries must be accompanied by a good quality map illustrating the location of the proposed site and a description of the activity. Allow at least three weeks for a response to all requests.

Missouri Department of Conservation (MDC)
Planning Division
P.O. Box 180
Jefferson City MO 65102-0180
Telephone Number (573) 751-4115 or FAX (573) 751-4495

U.S. Fish and Wildlife Service (FWS)
Columbia Field Office
608 East Cherry Street
Columbia MO 65201
Telephone Number (573) 876-1911 or FAX (573) 876-1914

FLOODPLAIN /REGULATORY FLOODWAY

An evaluation of floodplain impacts is mandated by Executive Order 11988, Floodplain Management, and subsequent federal floodplain management guidelines. When available, flood hazard boundary maps (National Flood Insurance Program) and flood insurance studies for the project area are used to determine the limits of the base (100-year) floodplain and the extent of encroachment.

The Federal Emergency Management Agency (FEMA) and Federal Highway Administration (FHWA) guidelines 23 CFR 650 have identified the base (100-year) flood as the flood having a one-percent probability of being equaled or exceeded in any given year. The base floodplain is the area of 100-year flood hazard within a county or community. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a specified amount. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base (100-year) floodplain. For projects that involve the state of Missouri, the State Emergency Management Agency (SEMA) issues floodplain development permits. In the case of projects proposed within regulatory floodways, a "no-rise" certificate, if applicable, should be obtained prior to issuance of a permit.

Questions regarding floodplain and regulatory floodway should be addressed to:

SEMA
P.O. Box 116
Jefferson City MO
65102
(573) 526-9141

Documentation of consultation with SEMA regarding the presence of 100-year floodplain/regulatory floodway should be included in the final collection of information to be submitted to MoDOT staff.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) BUYOUT LANDS

The Flood Disaster Protection Act of 1973, as amended by the Disaster Relief and Emergency Assistance Act of 1988 (The Stafford Act), identified the use of disaster relief funds under Section 404 for the Hazard Mitigation Grand Program (HMGP), including the acquisition and relocation of flood damaged property. The Volkmer Bill further expanded the use of HMGP funds under Section 404 to "buyout" flood damaged property, which had been affected by the Great Flood of 1993.

There are numerous restrictions on these FEMA buyout properties. No structures or improvements may be erected on these properties unless they are open on all sides. The site shall be used only for open space purposes, and shall stay in public

ownership. These conditions and restrictions (among others), along with the right to enforce same, are deemed to be covenants running with the land in perpetuity and are binding on subsequent successors, grantees, or assigns. Any decision involving these properties should take into consideration that 2-3 years is necessary to process an exemption from FEMA to utilize this parcel. This exemption would likely be a permanent easement rather than a transfer of property. If any proposed site is located on a FEMA buyout property, an alternative site should be chosen.

FARMLAND PROTECTION

In order to comply with the Farmland Protection Policy Act, which has the purpose of minimizing Federal programs' contributions to the unnecessary and irreversible conversion of farmland caused by nonagricultural uses, the Form AD-1006 will need to be completed. This can be accomplished through coordination with United States Department of Agricultural (USDA)-Natural Resources Conservation Service (NRCS), and the completion of Form AD-1006. To receive the Form AD-1006, call the NRCS State office in Columbia at (573) 876-9411. An aerial map of the site or sites will also be required with the area to be disturbed identified on the map. This aerial map can be obtained from the local SCS office. In some areas of the state this office may be located in an adjoining county.

The contractor will need to complete Parts I and III on the Form AD-1006. The form should then be sent to the NRCS State Office for completion of Parts II, IV and V. The address for NRCS State Office is:

Mr. Dennis Potter
State Soil Scientist
Natural Resource Conservation Service
601 Business Loop 70 West
Parkade Center, Suite 250
Columbia, MO 65203
1-573-876-9411

The NRCS office should be instructed to return the form (with maps) to:

Missouri Department of Transportation
Design Division-Environmental Section
P.O. Box 270
Jefferson City, MO 65102

The remaining Parts VI and VII will be filled out in the Missouri Department of Transportation (MoDOT) Design Division/ Environmental Section. The completed form will be sent to the contractor for documentation of compliance with the Farmland Protection Policy Act. A copy will be kept in the Design Division file.

WETLANDS

Federal executive order has decreed a national policy of "no net loss of wetlands." Under this policy, impacts to wetlands must be avoided if at all practical. Where wetlands are impacted, these impacts must be mitigated by construction or enhancement of a like quantity and quality of new wetlands. For these reasons, avoiding impacts to wetlands is a primary goal.

To determine whether wetlands occur on a site, contact the USDA, NRCS. The NRCS has identified and mapped wetlands as a requirement under the Food Security Act. These maps are available from county NRCS offices, usually located in the county seat. If wetlands are identified on Food Security Act wetland maps, a site visit may be needed to confirm the location of wetlands. If there are no wetland impacts, no other action need be taken.

If there are any questions about the extent of wetlands in the event that wetlands cannot be avoided, contact the U.S. Army Corps of Engineers (COE). If wetlands cannot be avoided, a COE Section 404 permit would be processed through the appropriate COE district. There are five COE districts in Missouri. See the attached map for locations, addresses, and phone numbers of these offices.

WATER QUALITY/LAND DISTURBANCE

If the project proponent does not have a valid general NPDES permit for storm water runoff and the site to be disturbed is greater than 1 acre in size, a specific NPDES permit from DNR is required. MoDOT's general permit for land disturbance is only applicable if the site is immediately contiguous to MoDOT right of way AND the project, or is owned by MoDOT. A pollution prevention plan may be required with the NPDES application. Permits may be obtained from the Department of Natural Resources at (573)-751-1300. These permits are necessary even if the runoff is directed into a basin.

HAZARDOUS WASTE SITES

More than likely, areas to be disturbed will be located in rural areas that have been used for agriculture or similar purposes. Hazardous wastes are most typically associated with commercial or previous industrial properties.

If the proposed area is basically farmland or pasture, and has not been used for any commercial activity or dumping, hazardous wastes are unlikely. The contractor should simply document the existing and historic land use of the parcel and tell how this assessment was obtained.

In non-rural, suburban or commercial areas a non-intrusive investigation may be used to "diagnose" the environmental conditions of a selected site. The following is a list of suggested items, but not inclusive, for a cursory non-intrusive investigation.

Examine any noticeable contamination in the form of surface staining, oil sheen, odors, stressed vegetation, spills, leaks, illegal dumping, etc.

Conduct interviews of local citizens and current owners to identify past land use practices and hazardous waste management practices.

Consult with local and state (Missouri Department of Natural Resources, Hazardous Waste Program, 573-751-3176) environmental regulatory agencies to identify if any past problems (complaints, citations, etc.) have occurred at the site, if any permits/licenses have been filed for the site, or if enforcement actions have occurred.

If the above analyses produce negative results, the contractor should provide documentation to the MoDOT Design Division-Environmental Section as to who was contacted and the results of the contact. However, if through the search for information described above, potential problems are identified, it would be wise to locate another site.

The potential to encounter wastes from sites that are unknown should always be a consideration. Any unknown sites that are found will be handled in accordance with Federal and State Laws and Regulations.

HISTORIC PRESERVATION

All jobs requiring environmental clearance for historic preservation (archaeological sites and structures) must be reviewed and approved by the State Historic Preservation office (SHPO), Department of Natural Resources. To initiate SHPO's review and clearance of a proposed site for cultural resources, a "Section 106 Project Information Form" must be completed and submitted to SHPO along with a copy of a United States Geological Survey (USGS) topographic map indicating the location of the project. In addition, photographs of any structures that will be impacted must be provided. The "Section 106 Project Information Form" can be obtained from the SHPO website at http://www.dnr.mo.gov/shpo/sectionrev.htm or requested from the SHPO at:

Missouri Department of Natural Resources
State Historic Preservation Office
Attn: Section 106 Review
P.O. Box 176
Jefferson City, MO, 65102-0176

or

573-751-7858

Based on the information supplied, SHPO may clear the project at that time or request that the contractor acquire the services of an archaeological consultant to conduct a historic preservation survey of the proposed area. A listing of currently acceptable and

available archaeological consultants who can complete a survey if required can be viewed at the SHPO's website at http://www.dnr.mo.gov/shpo/profqualifications.htm. Any questions can be directed to the Design Division-Historic Preservation Section, at 573-751-0473.

PUBLIC LAND

If borrow sites are proposed on any publicly owned land, contact the Environmental Section before proceeding. Section 4(f) of the Department of Transportation Act of 1966 (now codified as 49 U.S.C. 303 and 23 U.S.C. 138) protects certain public lands. Section 4(f) requires that all U.S. DOT-funded transportation projects must avoid impacts to public parkland and wildlife refuges (and cultural resources deemed eligible for the National Register of Historic Places), unless it is successfully demonstrated that no feasible and prudent alternative exists that avoid "use" or impacts to the park or refuge. It is strongly recommended that public lands not be considered as potential borrow sites.

Once the contractor has obtained all of the above information, it should be provided to the MoDOT district representative for the project, as well as:

Missouri Department of Transportation
Design Division-Environmental Section
P.O. Box 270
Jefferson City, MO 65102

The transmittal letter must include County, Route, and Job Number of the project. Please include a map depicting the location and limits of the site(s). No direct payment will be made for obtaining the required clearances for disturbed sites. An adjustment in contract time will be considered for any delay caused by receiving the required clearances.

Federal Prevailing Wage Section

General Decision Number: MO100001 10/14/2011 MO1

Superseded General Decision Number: MO20080001

State: Missouri

Construction Types: Heavy and Highway

Counties: Missouri Statewide.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	04/09/2010
2	04/16/2010
3	05/07/2010
4	06/04/2010
5	06/11/2010
6	07/02/2010
7	07/09/2010
8	08/06/2010
9	09/03/2010
10	10/01/2010
11	11/05/2010
12	11/12/2010
13	12/03/2010
14	01/21/2011
15	02/11/2011
16	03/04/2011
17	04/08/2011
18	04/15/2011
19	05/06/2011
20	05/13/2011
21	06/03/2011
22	07/01/2011
23	07/22/2011
24	08/12/2011
25	08/26/2011
26	09/02/2011
27	09/16/2011
28	09/23/2011
29	10/14/2011

* CARP0005-006 04/01/2008

CASS (Richards-Gebauer AFB ONLY), CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Carpenters:		
CARPENTERS & LATHERS	$ 33.00	12.03
MILLWRIGHTS & PILEDRIVERS	$ 33.00	12.03

CARP0008-003 05/01/2010

ST. LOUIS COUNTY AND CITY

	Rates	Fringes
Carpenters.....	$ 32.78	12.25

CARP0011-001 05/01/2011

	Rates	Fringes
Carpenter and Piledriver		
ADAIR, AUDRAIN (West of Hwy 19), BOONE, CALLAWAY, CHARITON, COLE, COOPER, HOWARD, KNOX,LINN, MACON, MILLER, MONITEAU,MONROE, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SHELBY AND SULLIVAN COUNTIES.....	$ 28.57	11.00
ATCHISON, ANDREW, BATES, CALDWELL, CARROLL,DAVIESS, DEKALB,GENTRY, GRUNDY, HARRISON, HENRY, HOLT, LIVINGSTON, MERCER, NODAWAY,ST. CLAIR, SALINE AND WORTH COUNTIES.....	$ 27.67	10.55
AUDRAIN (East of Hwy.19), RALLS, MARION, LEWIS, CLARK AND SCOTLAND COUNTIES.	$ 28.83	13.05
BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY,JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES.	$ 27.32	10.55
BENTON, MORGAN AND PETTIS...	$ 27.27	11.00
BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY, STE. GENEVIEVE, SCOTT, STODDARD AND WAYNE COUNTIES.....	$ 28.67	13.07
BUCHANAN, CLINTON, JOHNSON AND LAFAYETTE COUNTIES.....	$ 28.32	10.55
CARTER, HOWELL, OREGON AND RIPLEY COUNTIES.....	$ 27.75	13.07
CRAWFORD, DENT, GASCONADE, IRON, MADISON, MARIES, MONTGOMERY, PHELPS, PULASKI, REYNOLDS, SHANNON AND TEXAS COUNTIES.....	$ 28.68	13.05
FRANKLIN COUNTY.....	$ 31.23	13.05
JEFFERSON AND ST. CHARLES COUNTIES.....	$ 33.38	13.05

LINCOLN COUNTY	$ 30.34	13.05
PIKE, ST. FRANCOIS AND WASHINGTON COUNTIES	$ 29.39	13.05
WARREN COUNTY	$ 30.73	13.05

ELEC0001-002 06/01/2009

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, FRANKLIN, IRON, JEFFERSON, LINCOLN, MADISON, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY,REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, ST. LOUIS (City and County), STE. GENEVIEVE, SCOTT, STODDARD, WARREN, WASHINGTON AND WAYNE COUNTIES

	Rates	Fringes
Electricians	$ 33.60	22.242

ELEC0002-001 09/01/2008

ADAIR, AUDRAIN, BOONE, CALLAWAY, CAMDEN, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, FRANKLIN, GASCONADE, HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCON, LINN, MACON, MARIES, MARION, MILLER, MONITEAU, MONROE, MONTGOMERY, MORGAN, OREGON, OSAGE, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, ST. LOUIS (City and County), STE. GENEVIEVE, SCHUYLER, SCOTLAND, SHANNON, SHELBY, SULLIVAN, TEXAS, WARREN AND WASHINGTON COUNTIES

	Rates	Fringes
Line Construction:		
Groundman and Groundman-Driver	$ 22.48	43.25%+4.75
Groundman Equipment Operator	$ 29.08	43.25%+4.75
Groundman-Winch Driver	$ 23.59	43.25%+4.75
Lineman or Cable Splicer	$ 33.68	43.25%+4.75

ELEC0053-004 08/31/2010

	Rates	Fringes

Line Construction: (ANDREW, ATCHINSON, BARRY, BARTON, BUCHANAN, CALDWELL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIES,, DEKALB, DOUGLAS, GENTRY, GREENE, GRUNDY, HARRISON, HICKORY, HOLT, JASPER, LACLEDE, LAWRENCE, LIVINGSTON, MCDONALD, MERCER, NEWTON, NODAWAY, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON,

WEBSTER, WORTH AND WRIGHT
COUNTIES)

Groundman Powderman	$ 25.88	34.5%+4.75
Groundman	$ 23.98	34.5%+4.75
GroundmanPowderman	$ 25.13	34%+4.75
Lineman Operator	$ 35.12	34.5%+4.75
Lineman	$ 37.10	34.5%+4.75

Line Construction; (BATES,
BENTON, CARROLL, CASS, CLAY,
HENRY, JACKSON, JOHNSON,
LAFAYETTE, PETTIS, PLATTE,
RAY AND SALINE COUNTIES)

Groundman Powderman	$ 26.84	34.5%+4.75
Groundman	$ 25.44	34.5%+4.75
Lineman Operator	$ 35.82	34.5%+4.75
Lineman	$ 38.40	34.5%+4.75

ELEC0095-001 06/01/2011

BARRY, BARTON, CEDAR, CRAWFORD, DADE, JASPER, LAWRENCE,
MCDONALD, NEWTON, ST CLAIR, AND VERNON COUNTIES

	Rates	Fringes
Electricians:		
Cable Splicers	$ 23.75	12.31
Electricians	$ 24.00	3%+10.91

ELEC0124-007 09/01/2010

BATES, BENTON, CARROLL, CASS, CLAY, COOPER, HENRY, JACKSON,
JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY AND SALINE
COUNTIES:

	Rates	Fringes
Electricians	$ 33.83	18.63

ELEC0257-003 03/01/2011

AUDRAIN (Except Cuivre Township), BOONE, CALLAWAY, CAMDEN,
CHARITON, COLE, CRAWFORD, DENT, GASCONADE, HOWARD, MARIES,
MILLER, MONITEAU, OSAGE, PHELPS AND RANDOLPH COUNTIES

	Rates	Fringes
Electricians:		
Cable Splicers	$ 30.18	12.795
Electricians	$ 30.18	12.795

ELEC0350-002 12/01/2010

ADAIR, AUDRAIN (East of Highway 19), CLARK, KNOX, LEWIS, LINN,
MACON, MARION, MONROE, MONTGOMERY, PIKE, PUTNAM, RALLS,

SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES

	Rates	Fringes
Electricians	$ 28.16	15.20

ELEC0453-001 09/01/2011

	Rates	Fringes
Electricians:		
CHRISITAN, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, LACLEDE, OREGON, OZARK, POLK, SHANNON, WEBSTER and WRIGHT COUNTIES.	$ 24.23	13.55
PULASKI and TEXAS COUNTIES..	$ 28.88	14.01
STONE and TANEY COUNTIES....	$ 20.02	12.72

ELEC0545-003 06/01/2010

ANDREW, BUCHANAN, CLINTON, DEKALB, ATCHISON, HOLT, MERCER, GENTRY, HARRISON, DAVIESS, GRUNDY, WORTH, LIVINGSTON, NODAWAY, AND CALDWELL COUNTIES

	Rates	Fringes
Electricians:	$ 30.85	12.19

ELEC0702-004 06/23/2011

BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MADISON, MISSISSIPPI, NEW MADRID, PEMISCOT, SCOTT, STODDARD AND WAYNE COUNTIES

	Rates	Fringes
Line Construction:		
Groundman - Class A	$ 23.79	5.76+28.75%
Groundman-Equipment Operator Class II (all other equipment)	$ 30.16	5.76+28.75%
Heavy-Equipment Operator Class I (all crawler type equipment D-4 and larger)	$ 34.40	5.76+28.75%
Lineman	$ 47.66	5.76+28.75%

ENGI0101-001 05/01/2011

ANDREW, ATCHISON, BATES, BENTON, BUCHANAN, CALDWELL, CARROLL, CHARITON, CLINTON, COOPER, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HENRY, HOLT, HOWARD, JOHNSON, LAFAYETTE, LINN, LIVINGSTON, MERCER, NODAWAY, PETTIS, SALINE, SULLIVAN AND WORTH COUNITES

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 29.94	13.76
GROUP 2	$ 29.54	13.76
GROUP 3	$ 27.54	13.76

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers - 2; booster pump on dredge; bulldozer operator; boring machine (truck or crane mounted); clamshell operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drill cat with compressor mounted (self-contained) or similar type self- propelled rotary drill (not air tract); drilling or boring machine (rotary-self-propelled); finishing machine operator; greaser; high loader-fork lift-skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); mechanics and welders (field and plants); mucking machine operator; pile drive operator; pitman crane or boom truck (all types); push cat; quad track; scraper operators (all types); shovel operator; sideboom cats; side discharge spreader; skimmer scoop operators; slip form paver operator (CMI, Rex, Gomeco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; wood and log chippers (all types).

GROUP 2: A-frame truck operator; articulated dump truck; back filler operator; boilers (1); chip spreader; churn drill operator; compressor; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grade operator; hoisting engine (one drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra-hammer (or similar type); paymill operator; power shield; pumps; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; siphons and jets; straw blower; stump cutting machine; siphons and jets; tank car heater operator (combination boiler and booster); welding machine; vibrating machine operator (not hand held); welding machine.

GROUP 3: (a) Oiler;
(b) Oiiler driver
(c) Mechanic.

HOURLY PREMIUMS:
THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE ($ .25) ABOVE

GROUP 1 RATE: Dragline operator - 3 yds. & over; shovel 3 yds. & over; clamshell 3 yds. & over; Crane, rigs or piledrivers, 100' of boom or over (incl. jib.), hoist - each additional active drum over 2 drums

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE ($ .50) ABOVE GROUP 1 RATE: Tandem scoop operator; crane, rigs or piledrivers 150' to 200' of boom (incl. jib.)

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE ($ .75) ABOVE GROUP 1 RATE: Crane rigs, or piledrivers 200 ft. of boom or over (including jib.)

ENGI0101-005 04/01/2011

CASS, CLAY, JACKSON,PLATTE AND RAY COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 32.33	13.88
GROUP 2	$ 31.29	13.88
GROUP 3	$ 26.82	13.88
GROUP 4	$ 30.17	13.88

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers-2; booster pump on dredge; boring machine (truck or crane mounted); bulldozer operator; clamshell operator; concrete cleaning decontamination machine operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drillcat with compressor mounted (self-contained) or similar type self propelled rotary drill (not air tract); drilling or boring machine (rotary - self-propelled); finishing machine operator; greaser; heavy equipment robotics operator/mechanic; horizontal directional drill operator; horizontal directional drill locator; loader-forklift - skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); master environmental maintenance mechanic; mechanics and welders (field and plants); mucking machine operator; piledrive operator; pitman crane or boom truck (all types); push cat; quad-track; scraper operators (all types); shovel operator; side discharge spreader; sideboom cats; skimmer scoop operator; slip-form paver (CMI, REX, Gomaco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; ultra high perssure waterjet cutting tool system operator/mechanic; vacuum blasting machine operator/mechanic; wood and log chippers (all types)

GROUP 2: "A" Frame truck operator; articulated dump truck;

back filler operator; boilers (1); chip spreader;churn drill operator; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grader operator; hoisting engine (1 drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra- hammer (or similar type); power shield; paymill operator; pumps; siphons and jets; stump cutting machine; tank car heater operator (combination boiler and booster); compressor; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; straw blower; tank car heater operator (combination boiler and booster); vibrating machine operator (not hand held)

GROUP 3: Oilers

GROUP 4: Oiler Driver (All Types)

FOOTNOTE:
HOURLY PREMIUMS FOLLOWING CLASSIFICATIONS SHALL RECEIVE ($1.00) ABOVE GROUP 1 RATE:
Clamshells - 3 yd. capacity or over; Cranes or rigs, 80 ft. of boom or over (including jib); Draglines, 3 yd. capacity or over;
Piledrivers 80 ft. of boom or over (including jib);
Shovels & backhoes, 3 yd. capacity or over.

ENGI0101-022 05/01/2011

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES and CITY OF SPRINGFIELD

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 26.71	11.81
GROUP 2	$ 26.36	11.81
GROUP 3	$ 26.16	11.81
GROUP 4	$ 24.11	11.81

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening spreader; asphalt plant console operator; autograder; automatic slipform paver; backhoe; blade operator - all types; boat operator - tow; boilers-2; central mix concrete plant operator; clamshell operator; concrete mixer paver; crane operator; derrick or derrick trucks; ditching machine; dozer operator; dragline operator; dredge booster pump; dredge engineman; dredge operator; drill cat with compressor mounted on cat; drilling or boring machine rotary self-propelled; highloader; hoisting engine - 2

active drums; launch hammer wheel; locomotive operator; - standard guage; mechanic and welders; mucking machine; off-road trucks; piledriver operator; pitman crane operator; push cat operator; quad trac; scoop operator - all types; shovel operator; sideboom cats; skimmer scoop operators; trenching machine operator; truck crane.

GROUP 2: A-frame; asphalt hot-mix silo; asphalt plant fireman (drum or boiler); asphalt plant man; asphalt plant man; asphalt plant mixer operator; asphalt roller operator; backfiller operator; barber-greene loader; boat operator (bridges and dams); chip spreader; concrete mixer operator - skip loader; concrete plant operator; concrete pump operator; crusher operator; dredge oiler; elevating grader operator; fork lift; greaser-fleet; hoisting engine - 1; locomotive operator - narrow gauge; multiple compactor; pavement breaker; powerbroom - self-propelled; power shield; rooter; side discharge concrete spreader; slip form finishing machine; stumpcutter machine; throttle man; tractor operator (over 50 h.p.); winch truck.

GROUP 3: Boilers - 1; chip spreader (front man); churn drill operator; clef plane operator; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; roller operator, other than high type asphalt; screening & washing plant operator; siphons & jets; sub-grading machine operator; spreader box operator, self-propelled (not asphalt); tank car heater operator (combination boiler & booster); tractor operator (50 h.p. or less); Ulmac, Ulric or similar spreader; vibrating machine operator, not hand;

GROUP 4: Grade checker; Oiler; Oiler-Driver

HOURLY PREMIUMS:

The following classifications shall receive $ .25 above GROUP 1 rate:
Clamshells - 3 yds. or over; Cranes - Rigs or Piledrivers, 100 ft. of boom or over (including jib);
Draglines - 3 yds. or over; Hoists - each additional active drum over 2 drums; Shovels - 3 yds. or over;

The following classifications shall receive $ .50 above GROUP 1 rate:
Tandem scoop operator; Cranes - Rigs or Piledrivers, 150 ft. to 200 ft. of boom (including jib); Tandem scoop.

The following classifications shall receive $ .75 above GROUP 1 rate:
Cranes - Rigs or Piledrivers, 200 ft. of boom or over (including jib.).

ENGI0513-004 05/04/2011

FRANKLIN, JEFFERSON, LINCOLN, ST CHARLES, AND WARREN COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 29.11	21.36
GROUP 2	$ 29.11	21.36
GROUP 3	$ 27.21	21.36
GROUP 4	$ 23.75	21.36

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, Cable; Backhoe, Hydraulic (2 cu yds bucket and under regardless of attachment, one oiler for 2 or 3, two oilers for 4 through 6); Backhoe, Hydraulic over 2 cu yds; Cableway; Crane, Crawler or Truck; Crane, Hydraulic - Truck or Cruiser mounted, 16 tons and over; Crane, Locomotive; crane with boom including jib over 100 ft from pin to pin; Crane using rock socket tool; Derrick, Steam; Derrick Car and Derrick Boat; Dragline, 7 cu yds and over; Dredge; Gradall, Crawler or tire mounted; Locomotive, Gas, Steam & other powers; Pile Driver, Land or Floating; Scoop, Skimmer; Shovel, Power (Electric, Gas, Steam or other powers); Shovel, Power (7 cu yds and over); Switch Boat; Whirley; Air Tugger with air compressor; Anchor Placing Barge; Asphalt Spreaker; Athey Force Feeder Loader, self-propelled; Backfilling Machine; Boat Operator - Push Boat or Tow Boat (job site); Boiler, High Pressure Breaking in Period; Boom Truck, Placing or Erecting; Boring Machine, Footing Foundation; Bullfloat; Cherry Picker; Combination Concrete Hoist and Mixer (such as Mixermobile); Compressor, Two 125 CFM and under; Compressor, Two through Four over 125 CFM; Compressor when operator runs throttle; Concrete Breaker (Truck or Tractor mounted); Concrete Pump (such as Pumpcrete machine); Concrete Saw (self-propelled); Concrete Spreader; Conveyor, Large (not selfpropelled) hoisting or moving brick and concrete into, or into and on floor level, one or both; Crane, Cimbing (such as Linden); Crane, Hydraulic - Rough Terrain, self-propelled; Crane, Hydraulic - Truck or Cruiser mounted - under 16 tons; Drilling machine - Self-powered, used for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other souces including concrete breakers, jackhammers and Barco equipmnet no engineer required); Elevating Grader; Engine Man, Dredge; Excavator or Powerbelt Machine; Finishing Machine, self- propelled oscillating screed; Forklift; Generators, Two through Six 30 KW or over; Grader, Road with power blade; Greaser; Highlift; Hoist, Concrete and Brick (Brick cages or concrete skips operating or on tower, Towermobile, or similar equipment); Hoist, Three or more drums in use; Hoist, Stack; Hydro-Hammer; Lad-A-Vator, hoisting brick or concrete; Loading Machine such as Barber-Greene; Mechanic on job site

GROUP 2: Air Tugger with plant air; Boiler (for power or heating shell of building or temporary enclosures in connection with construction work); Boiler, Temporary; Compressor, One over 125 CFM; Compressor, truck mounted;

Conveyor, Large (not self- propelled); Conveyor, Large (not self- propelled) moving brick and concrete (distributing) on floor level; Curb Finishing Machine; Ditch Paving Machine; Elevator (outside); Endless Chain Hoist; Fireman (as required); Form Grader; Hoist, One Drum regardless of size (except brick or concrete); Lad-A-Vator, other hoisting; Manlift; Mixer, Asphalt, over 8 cu ft capacity; Mixer, one bag capacity or less; Mixer, without side loader, two bag capacity or more; Mixer, with side loader, regardless of size, not Paver; Mud Jack (where mud jack is used in conjenction with an air compressor, operator shall be paid $ .55 per hour in addition to his basic hourly rate for covering both operations); Pug Mill operator; Pump, Sump - self powered, automatic controlled over 2"; Scissor Lift (used for hoisting); Skid Steer Loader; Sweeper, Street; Tractor, small wheel type 50 HP and under with grader blade and similar equipment; Welding Machine, One over 400 amp; Winch, operating from truck

GROUP 3: Boat operator - outboard motor, job site; Conveyors (such as Con-Vay-It) regardless of how used; Elevator (inside); Heater operator, 2 through 6; Sweeper, Floor

GROUP 4: Crane type

HOURLY PREMIUMS:

Backhoe, Hydraulic 2 cu yds or less without oiler - $2.00;
Certified Crane Operator - $1.50;
Certified Hazardous Material Operator $1.50;
Crane,climbing (such as Linden) - $.50;
Crane, Pile Driving and Extracting - $ .50
Crane with boom (including job) over
100 ft from pin to pin - add $.01 per foot
to maximum of $4.00);
Crane, using rock socket tool - $ .50;
Derrick, diesel, gas or electric hoisting material
and erecting steel (150 ft or more above ground) - $ .50;
Dragline, 7 cu yds and over - $ .50;
Hoist, Three or more drums in use - $ .50;
Scoop, Tandem - $.50;
Shovel, Power - 7 cu yds and over - $ .50;
Tractor, Tandem Crawler - $ .50;
Tunnel, man assigned to work in tunnel or
tunnel shaft - $ .50;
Wrecking, when machines are working on
second floor or higher - $ .50

ENGI0513-006 05/01/2011

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE GIRARDEAU, CARTER, CLARK, COLE, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWELL, IRON, KNOX, LEWIS, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY, MORGAN, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON,

SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 24.89	21.33
GROUP 2	$ 24.54	21.33
GROUP 3	$ 24.34	21.33
GROUP 4	$ 20.69	21.33

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening spreader, asphalt plant console operator; autograder; automatic slipform paver; back hoe; blade operator - all types; boat operator tow; boiler two; central mix concrete plant operator; clam shell operator; concrete mixer paver; crane operator; derrick or derrick trucks; ditching machine; dozer operator; dragline operator; dredge booster pump; dredge engineman; dredge operator; drill cat with compressor mounted on cat; drilling or boring machine rotary self-propelled; highloader; hoisting engine 2 active drums; launchhammer wheel; locomotive operator standrad guage; mechanics and welders; mucking machine; piledriver operator; pitman crane operator; push cat operator; guad-trac; scoop operator; sideboom cats; skimmer scoop operator; trenching machine operator; truck crane, shovel operator.

GROUP 2: A-Frame; asphalt hot-mix silo; asphalt roller operator asphalt plant fireman (drum or boiler); asphalt plant man; asphalt plant mixer operator; backfiller operator; barber-greene loader; boat operator (bridge & dams); chip spreader; concrete mixer operator skip loader; concrete plant operator; concrete pump operator; dredge oiler; elevating graded operator; fork lift; grease fleet; hoisting engine one; locomotive operator narrow guage; multiple compactor; pavement breaker; powerbroom self-propelled; power shield; rooter; slip-form finishing machine; stumpcutter machine; side discharge concrete spreader; throttleman; tractor operator (over 50 hp); winch truck; asphalt roller operator; crusher operator.

GROUP 3: Spreader box operator, self-propelled not asphalt; tractor operator (50 h.p. or less); boilers one; chip spreader (front man); churn drill operator; compressor over 105 CFM 2-3 pumps 4" & over; 2-3 light plant 7.5 KWA or any combination thereof; clef plane operator; compressor maintenance operator 2 or 3; concrete saw operator (self-propelled); curb finishing mancine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; riller operator other than high type asphalt; screening & washing plant operator; siphons & jets; subgrading machine operator; tank car heater (combination boiler & booster); ulmac, ulric or similar spreader; vibrating machine

operator; hydrobroom.

GROUP 4: Oiler; grout machine; oiler driver; compressor over 105 CFM one; conveyor operator one; maintenance operator; pump 4" & over one.

FOOTNOTE: HOURLY PREMIUMS

Backhoe hydraulic, 2 cu. yds. or under Without oiler - $2.00
Certified Crane Operator - $1.50;
Certified Hazardous Material Operator $1.50;
Crane, climbing (such as Linden) - $0.50;
Crane, pile driving and extracting - $0.50;
Crane, with boom (including jib) over 100' from pin to pin add $0.01 per foot to maximum of $4.00;
Crane, using rock socket tool - $0.50;
Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above the ground) - $0.50;
Dragline, 7 cu. yds, and over - $0.50;
Hoist, three or more drums in use - $0.50; Scoop, Tandem - $0.50;
Shovel, power - 7 cu. yds. or more - $0.50;
Tractor, tandem crawler - $0.50;
Tunnel, man assigned to work in tunnel or tunnel shaft - $0.50;
Wrecking, when machine is working on second floor or higher - $0.50;

ENGI0513-007 05/04/2011

ST. LOUIS CITY AND COUNTY

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 29.11	21.36
GROUP 2	$ 29.11	21.36
GROUP 3	$ 27.21	21.36
GROUP 4	$ 23.75	21.36

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, cable or hydraulic; cableway; crane crawler or truck; crane, hydraulic-truck or cruiser mounted 16 tons & over; crane locomotive; derrick, steam; derrick car & derrick boat; dragline; dredge; gradall, crawler or tire mounted; locomotive, gas, steam & other powers; pile driver, land or floating; scoop, skimmer; shovel, power (steam, gas, electric or other powers); switch boat; whirley.

GROUP 2: Air tugger w/air compressor; anchor-placing barge; asphalt spreader; athey force feeder loader (self-propelled); backfilling machine; backhoe-loader; boat operator-push boat or tow boat (job site); boiler, high pressure breaking in period; boom truck, placing or erecting; boring machine, footing foundation; bull- float;

cherry picker; combination concrete hoist & mixer (such as mixer mobile); compressor (when operator runs throttle); concrete breaker (truck or tractor mounted); concrete pump, such as pump-crete machine; concrete saw (self-propelled), concrete spreader; conveyor, large (not self-propelled), hoisting or moving brick and concrete into, or into and on floor level, one or both; crane, hydraulic-rough terrain, self-propelled; crane hydraulic-truck or cruiser mounted-under 16 tons; drilling machines, self-powered use for earth or rock drilling or boring (wagon drills nd any hand drills obtaining power from other sources including concrete breakers, jackhammers and barco equipment-no engineer required); elevating grader; engineman, dredge; excavator or powerbelt machine; finishing machine, self-propelled oscillating screed; forklift; grader, road with power blade; highlift. greaser; hoist, stack, hydro-hammer; loading machine (such as barber-greene); machanic, on job site; mixer, pipe wrapping machines; plant asphalt; plant, concrete producing or ready-mix job site; plant heating-job site; plant mixing-job site; plant power, generating-job site; pumps, two through six self-powered over 2"; pumps, electric submersible, two through six, over 4"; quad-track; roller, asphalt, top or sub-grade; scoop, tractor drawn; spreader box; sub-grader; tie tamper; tractor-crawler, or wheel type with or without power unit, power take-offs and attachments regardless of size; trenching machine; tunnel boring machine; vibrating machine automatic, automatic propelled; welding machines (gasoline or diesel) two through six; well drilling machine

GROUP 3: Conveyor, large (not self-propelled); conveyor, large (not self-propelled) moving brick and concrete distributing) on floor level; mixer two or more mixers of one bag capacity or less; air tugger w/plant air; boiler, for power or heating on construction projects; boiler, temporary; compressor (mounted on truck; curb finishing machine; ditch paving machine; elevator; endless chain hoist; form grader; hoist, one drum regardless of size; lad-a-vator; manlift; mixer, asphalt, over 8 cu. ft. capacity, without side loader, 2 bag capacity or more; mixer, with side loader, regardless of size; pug mill operator; pump, sump-self-powered, automatic controlled over 2" during use in connection with construction work; sweeper, street; welding machine, one over 400 amp.; winch operating from truck; scissor lift (used for hoisting); tractor, small wheel type 50 h.p. & under with grader blade & similar equipment; Oiler on dredge and on truck crane.

GROUP 4: Boat operator-outboard motor (job site); conveyor (such as con-vay-it) regardless of how used; sweeper, floor

HOURLY PREMIUMS:

Backhoe, hydraulic	
2 cu. yds. or under without oiler	$2.00
Certified Crane Operator	1.50
Certified Hazardous Material Operator	1.50
Crane, climbing (such as Linden)	.50

Crane, pile driving and extracting .50
Crane, with boom (including jib) over 100' (from pin to pin) add $.01 per foot to maximum of 4.00
Crane, using rock socket tool .50
Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above ground) .50
Dragline, 7 cu. yds. and over .50
Hoist, three (3) or more drums in use .50
Scoop, Tandem .50
Shovel, power - 7 cu. yds. or more .50
Tractor, tandem crawler .50
Tunnel, man assigned to work in tunnel or tunnel shaft .50
Wrecking, when machine is working on second floor or higher .50

IRON0010-012 04/01/2011

	Rates	Fringes
Ironworkers:		
ANDREW, ATCHISON, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR, CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DE KALB, GENTRY, GREENE, GRUNDY, HARRISON, HENRY, HICKORY, HOLT, HOWARD, LACLEDE, LINN, LIVINGSTON, MERCER, MONITEAU, MORGAN, NODAWAY, PETTIS, POLK, PUTNAM, RANDLOPH, ST. CLAIR, SALINE, SULLIVAN, TANEY, VERNON, WEBSTER, WRIGHT and WORTH Counties and portions of ADAIR, BOONE, MACON, MILLER and RANDOLPH Counties	$ 25.50	24.25
BUCHANAN, CASS, CLAY, JACKSON, JOHNSON, LAFAYETTE, PLATTE AND RAY Counties	$ 28.50	24.25

IRON0321-002 08/01/2009

DOUGLAS, HOWELL and OZARK COUNTIES

	Rates	Fringes
Ironworker	$ 18.10	12.34

IRON0396-004 08/04/2010

ST. LOUIS (City and County), ST. CHARLES, JEFFERSON, IRON, FRANKLIN, LINCOLN, WARREN, WASHINGTON, ST. FRANCOIS, STE. GENEVIEVE, and REYNOLDS Counties; and portions of MADISON, PERRY, BOLLINGER, WAYNE, and CARTER Counties

	Rates	Fringes
Ironworker	$ 31.98	18.20

IRON0396-009 08/04/2010

AUDRAIN, CALLAWAY, COLE, CRAWFORD, DENT, GASCONADE, MARIES, MONTGOMERY, OSAGE, PHELPS, PIKE, PULASKI, TEXAS and WRIGHT Counties; and portions of BOONE, CAMDEN, DOUGLAS, HOWELL, LACLEDE, MILLER, MONROE, OREGON, SHANNON and RALLS Counties

	Rates	Fringes
Ironworker	$ 27.51	18.01

IRON0577-005 08/01/2010

ADAIR, CLARK, KNOX, LEWIS, MACON, MARION, MONROE, RALLS, SCHUYLER, SCOTLAND, AND SHELBY COUNTIES

	Rates	Fringes
Ironworker	$ 24.00	15.01

IRON0584-004 06/01/2009

BARRY, JASPER, LAWRENCE, MCDONALD, NEWTON AND STONE Counties

	Rates	Fringes
Ironworkers:	$ 22.10	10.51

IRON0782-003 05/01/2011

CAPE GIRARDEAU, MISSISSIPPI, NEW MADRID, SCOTT, & STODDARD Counties; and portions of BOLLINGER, BUTLER, CARTER, DUNKLIN, MADISON, PEMISCOT, PERRY, RIPLEY, and WAYNE Counties

	Rates	Fringes
Ironworkers:		
Locks, Dams, Bridges and other major work on the Mississippi and Ohio River only	$ 29.39	17.85
All Other Work	$ 23.87	16.48

LABO0042-003 03/07/2011

ST. LOUIS (City and County)

	Rates	Fringes
Laborers:		
Plumber Laborers	$ 28.17	12.07

LABO0042-005 03/02/2011

ST. LOUIS (City and County)

	Rates	Fringes
Laborers:		
Dynamiter, Powderman	$ 28.67	12.07
Laborers, Flaggers	$ 28.17	12.07
Wrecking	$ 28.05	12.07

LABO0424-002 05/01/2009

	Rates	Fringes
Laborers:		
ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, CLARK, COLE, COOPER, HOWARD, IRON, KNOX, LEWIS, LINN, MACON, MADISON, MARION, MILLER, MONITEAU, MONROE, PERRY, PIKE, PUTNAM, RALLS, RANDOLPH, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES		
GROUP 1	$ 24.56	9.29
GROUP 2	$ 25.16	9.29
BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWELL, MARIES, MISSISSIPPI, NEW MADRID, OREGON, OSAGE, PEMISCOT, PHELPS, PULASKI, RIPLEY, SCOTT, SHANNON, STODDARD, TEXAS, WASHINGTON AND WAYNE COUNTIES		
GROUP 1	$ 24.56	9.29
GROUP 2	$ 25.16	9.29
FRANKLIN COUNTY		
GROUP 1	$ 26.01	9.29
GROUP 2	$ 26.61	9.29
JEFFERSON COUNTY		
GROUP 1	$ 26.06	9.29
GROUP 2	$ 26.66	9.29
LINCOLN, MONTGOMERY AND		

WARREN COUNTIES		
GROUP 1	$ 24.81	9.29
GROUP 2	$ 25.41	9.29
ST.CHARLES COUNTY		
GROUP 1	$ 27.33	9.29
GROUP 2	$ 27.33	9.29

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggie man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzleman; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

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	Rates	Fringes
Laborers: (ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HOLT, LIVINGSTON, MERCER, NODAWAY and WORTH COUNTIES.)		
GROUP 1	$ 23.39	11.04
GROUP 2	$ 23.74	11.04
Laborers: (BARRY, BARTON, BATES, BENTON, CAMDEN, CARROLL, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HENRY. HICKORY, JASPER, JOHNSON, LACLEDE, LAWRENCE, MCDONALD, MORGAN, NEWTON, OZARK, PETTIS, POLK, ST.CLAIR, SALINE, STONE, TANEY, VERNON, WEBSTER and WRIGHT COUNTIES)		
GROUP 1	$ 21.74	10.89
GROUP 2	$ 22.29	10.89
Laborers: (LAFAYETTE COUNTY)		
GROUP 1	$ 23.29	11.14
GROUP 2	$ 23.64	11.14

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers - Carpenter tenders; salamander tenders; loading trucks under bins; hoppers & conveyors; track men & all other general laborers; air tool operator; cement handler-bulk or sack; dump man on earth fill; georgie buggie man; material batch hopper man; material mixer man (except on manholes); coffer dams; riprap pavers - rock, block or brick; signal man; scaffolds over ten feet not self-supported from ground up; skipman on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator, all work in connection with hydraulic or general dredging operations; puddlers (paving only); straw blower nozzleman; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material or materials (where special protection is required); rubbing concrete; topper of standing trees; batter board man on pipe and ditch work; feeder man on wood pulverizers; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 feet where compressed air is not used; abutment and pier hole men working six (6) feet or more below ground; men working in coffer dams for bridge piers and footings in the river; ditchliners; pressure groutmen; caulker; chain or concrete saw; cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet

above ground; mortarmen on brick or block manholes; toxic and hazardous waste work.

GROUP 2: Skilled Laborers - Head pipe layer on sewer work; laser beam man; Jackson or any other similar tamp; cutting torch man; form setters; liners and stringline men on concrete paving, curb, gutters; hot mastic kettleman; hot tar applicator; sandblasting and gunite nozzlemen; air tool operator in tunnels; screed man on asphalt machine; asphalt raker; barco tamper; churn drills; air track drills and all similar drills; vibrator man; stringline man for electronic grade control; manhole builders-brick or block; dynamite and powder men; grade checker.

LABO0663-002 04/01/2011

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 26.64	12.49
GROUP 2	$ 27.85	12.49

LABORERS CLASSIFICATIONS

GROUP 1: General laborers, Carpenter tenders, salamander tenders, loading trucks under bins, hoppers and conveyors, track men and all other general laborers, air tool operator, cement handler (bulk or sack), chain or concrete saw, deck hands, dump man on earth fill, Georgie Buggies man, material batch hopper man, scale man, material mixer man (except on manholes), coffer dams, abutments and pier hole men working below ground, riprap pavers rock, black or brick, signal man, scaffolds over ten feet not self-supported from ground up, skipman on concrete paving, wire mesh setters on concrete paving, all work in connection with sewer,water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipelines, power tool operator, all work in connection with hydraulic or general dredging operations, straw blower nozzleman,asphalt plant platform man, chuck tender, crusher feeder, men handling creosote ties on creosote materials, men working with and handling epoxy material or materials (where special protection is required), topper of standing trees, batter board man on pipe and ditch work, feeder man on wood pulverizers, board and willow mat weavers and cable tiers on river work, deck hands, pile dike and revetment work, all laborers working on underground tunnels less than 25 feet where compressed air is not used, abutment and pier hole men working six (6) feet or more below ground, men working in coffer dams for bridge piers and footings in the river, ditchliners, pressure groutmen, caulker and chain or concrete saw, cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground, mortarmen on brick or block manholes, signal man.

GROUP 2: Skilled Laborer - spreader or screed man on asphalt machine, asphalt raker, grade checker, vibrator man, concrete saw over 5 hp., laser beam man, barco tamper, jackson or any other similar tamp, wagon driller, churn drills, air track drills and other similar drills, cutting torch man, form setters, liners and stringline men on concrete paving, curb, gutters and etc., hot mastic kettleman, hot tar applicator, hand blade operators, mortar men on brick or block manholes, sand blasting and gunnite nozzle men, rubbing concrete, air tool operator in tunnels, head pipe layer on sewer work, manhole builder (brick or block), dynamite and powder men.

PAIN0002-002 09/01/2007

CLARK, FRANKLIN, JEFFERSON, LEWIS, LINCOLN, MARION, PIKE, RALLS, ST. CHARLES, ST. LOUIS (CITY & COUNTY), AND WARREN COUNTIES

	Rates	Fringes
Painters:		
Brush and Roller; Taper	$ 28.61	10.24
High work over 60 feet	$ 29.11	10.24
Lead Abatement	$ 29.36	10.24
Pressure Roller; High work under 60 ft	$ 28.86	10.24
Spray & Abrasive Blasting; Water Blasting (Over 5000 PSI)	$ 30.61	10.24
Taper (Ames Tools & Bazooka)	$ 30.21	10.24

PAIN0002-006 04/01/2011

ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, COLE, GASCONADE, HOWARD, KNOX, LINN, MACON, MONROE, MONTGOMERY, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES and the City of Booneville.

	Rates	Fringes
Painters:		
Bridges, Dams, Locks or Powerhouses	$ 22.80	10.87
Brush and Roll; Taping, Paperhanging	$ 20.80	10.87
Epoxy or Any Two Part Coating; Sandblasting; Stage or other Aerial Work - Platforms over 50 feet high; Lead Abatement	$ 21.80	10.87
Spray; Structural Steel (over 50 feet)	$ 21.30	10.87

Tapers using Ames or Comparable Tools	$ 21.05	10.87

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* PAIN0003-004 04/01/2011

CASS, CLAY, CLINTON, JACKSON, JOHNSON, LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
Painters:		
Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks	$ 29.93	14.04
Brush & Roller	$ 28.31	14.04
Drywall	$ 28.53	14.04
Paper Hanger	$ 28.81	14.04
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping	$ 29.43	14.04
Steeplejack	$ 33.50	14.04

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* PAIN0003-011 04/01/2011

BATES, BENTON, CALDWELL, CARROLL, COOPER, DAVIESS, GRUNDY, HARRISON, HENRY, LIVINGSTON, MERCER, MONITEAU, MORGAN, PETTIS & SALINE COUNTIES

	Rates	Fringes
Painters:		
Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks	$ 24.06	14.04
Brush & Roller	$ 22.67	14.04
Drywall	$ 22.84	14.04
Paper Hanger	$ 23.07	14.04
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping	$ 23.56	14.04
Steeplejack	$ 26.82	14.04

PAIN0098-002 05/01/2010

ANDREW, ATCHISON, BUCHANAN, DE KALB, GENTRY, HOLT, NODAWAY & WORTH COUNTIES

	Rates	Fringes
Painters:		
Brush & Roller	$ 24.43	11.17
Sandblaster	$ 25.43	11.17

Steeplejack	$ 27.43	11.17

PAIN0203-001 04/01/2010

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, and WRIGHT COUNTIES

	Rates	Fringes
Painters:		
Finisher	$ 19.69	11.06
Painter	$ 19.26	11.49
Sandblaster, High Man, Spray Man, Vinyl Hanger, Tool Operator	$ 20.26	11.49

PAIN1265-003 09/01/2011

CAMDEN, CRAWFORD, DENT, LACLEDE, MARIES, MILLER, PHELPS, PULASKI AND TEXAS COUNTIES

	Rates	Fringes
Painters:		
Brush and Roller	$ 24.25	11.71
Floor Work	$ 24.75	11.71
Lead Abatement	$ 26.50	11.71
Spray	$ 25.75	11.71
Structural Steel, Sandblasting and All Tank Work	$ 25.50	11.71
Taping, Paperhanging	$ 25.25	11.71

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* PAIN1292-002 09/01/2011

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, REYNOLDS, RIPLEY, SCOTT, SHANNON, STODDARD and WAYNE COUNTIES

	Rates	Fringes
Painters:		
Bridges, Stacks & Tanks	$ 27.99	10.39
Brush & Roller	$ 23.04	10.39
Spray & Abrasive Blasting; Waterblasting (over 5000 PSI)	$ 25.04	10.39

Height Rates (All Areas):
Over 60 ft. $0.50 per hour.
Under 60 ft. $0.25 per hour.

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* PAIN1292-003 09/01/2011

IRON, MADISON, ST. FRANCOIS, STE. GENEVIEVE and WASHINGTON COUNTIES

	Rates	Fringes
Painters:		
Bridges, Stacks & Tanks	$ 27.99	10.39
Brush & Roller	$ 23.64	10.39
Spray & Abrasive Blasting; Waterblasting (Over 5000 PSI)	$ 25.64	10.39

Height Rates (All Areas):
Over 60 ft. $0.50 per hour
Under 60 ft. $0.25 per hour.

PLAS0518-006 03/01/2011

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, AND WRIGHT COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 21.76	8.49

PLAS0518-007 04/01/2011

CASS (Richards-Gebaur AFB only), CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Cement Masons:	$ 28.84	13.63

PLAS0518-011 04/01/2011

ANDREW, ATCHISON, BATES, BUCHANNAN, CLINTON, DEKALB, GENTRY, HENRY, HOLT, JOHNSON, LAFAYETTE, NODAWAY & WORTH COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 30.28	15.45

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* PLAS0527-001 04/06/2011

	Rates	Fringes
CEMENT MASON		
FRANKLIN, LINCOLN AND		

WARREN COUNTIES	$ 27.53	14.48
JEFFERSON, ST. CHARLES COUNTIES AND ST.LOUIS (City and County)	$ 28.70	14.56

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* PLAS0527-004 06/01/2011

CRAWFORD, DENT, IRON, MADISON, MARION, PHELPS, PIKE, PULASKI, RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SHANNON, TEXAS, WASHINGTON COUNTIES

	Rates	Fringes
CEMENT MASON	$ 25.54	14.48

PLAS0908-001 05/01/2010

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, HOWELL, MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, RIPLEY, SCOTT, STODDARD, AND WAYNE COUNTIES

	Rates	Fringes
CEMENT MASON	$ 21.15	9.30

PLAS0908-005 03/01/2010

BENTON, CALDWELL, CALLAWAY, CAMDEN, CARROLL, COLE, DAVIESS, GASCONADE, GRUNDY, HARRISON, LIVINGSTON, MACON, MARIES, MERCER, MILLER, MONTGOMERY, MORGAN, OSAGE, PETTIS & SALINE COUNTIES

	Rates	Fringes
CEMENT MASON	$ 25.08	9.60

PLUM0008-003 06/01/2011

CASS, CLAY, JACKSON, JOHNSON, AND PLATTE COUNTIES

	Rates	Fringes
Plumbers	$ 36.80	20.41

PLUM0008-017 06/01/2011

BATES, BENTON, CARROLL, HENRY, LAFAYETTE, MORGAN, PETTIS, RAY, ST. CLAIR, SALINE AND VERNON COUNTIES

	Rates	Fringes
Plumbers	$ 34.36	20.41

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* PLUM0045-003 09/01/2011

ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB, GENTRY, HARRISON, HOLT, NODAWAY AND WORTH COUNTIES

	Rates	Fringes
Plumbers and Pipefitters	$ 33.10	18.10

PLUM0178-003 11/01/2010

BARRY, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, LACLEDE, LAWRENCE, POLK, STONE, TANEY, WEBSTER AND WRIGHT COUNTIES

	Rates	Fringes
Plumbers and Pipefitters	$ 26.75	14.07

PLUM0178-006 11/01/2010

BARTON, JASPER, MCDONALD AND NEWTON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters		
Projects $750,000 & under	$ 23.78	14.07
Projects over $750,000	$ 26.75	14.07

PLUM0533-004 06/01/2011

BATES, BENTON, CARROLL, CASS, CLAY, HENRY, HICKORY, JACKSON, JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY, SALINE, ST. CLAIR AND VERNON COUNTIES

	Rates	Fringes
Pipefitters	$ 39.58	19.07

PLUM0562-004 07/01/2011

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY,CAMDEN, CAPE GIRARDEAU,CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, DUNKLIN, FRANKLIN, GASCONADE, GRUNDY, HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCOLN, LINN, LIVINGSTON, MACON, MADISON, MARIES, MARION, MERCER, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY, NEW MADRID, OREGON, OSAGE, PEMISCOTT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST.FRANCOIS, STE. GENEVIEVE, ST. LOUIS, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WARREN, WASHINGTON,AND WAYNE COUNTIES.

	Rates	Fringes

Plumbers and Pipefitters		
Mechanical Contracts including all piping and temperature control work $7.0 million & under	$ 32.91	17.04
Mechanical Contracts including all piping and temperature control work over $7.0 million	$ 34.25	22.43

PLUM0562-016 07/01/2011

CAMDEN, COLE, CRAWFORD, FRANKLIN, JEFFERSON, MARIES, MILLER, MONITEAU, OSAGE, PHELPS, PULASKI, ST. CHARLES, ST. LOUIS (City and County), WARREN and WASHINGTON COUNTIES

	Rates	Fringes
Plumbers		
Mechanical Contracts including all piping and temperature control work $7.0 million & under	$ 32.91	17.04
Mechanical Contracts including all piping and temperature control work over $7.0 million	$ 34.25	22.43

TEAM0013-001 05/01/2010

	Rates	Fringes
Truck drivers (ADAIR, BUTLER, CLARK, DUNKIN, HOWELL, KNOX, LEWIS, OREGON, PUTNAM, RIPLEY, SCHUYLER AND SCOTLAND COUNTIES)		
GROUP 1	$ 25.84	9.85
GROUP 2	$ 26.00	9.85
GROUP 3	$ 25.99	9.85
GROUP 4	$ 26.11	9.85
Truck drivers (AUDRAIN, BOLLINGER, BOONE, CALLAWAY, CAPE GIRARDEAU, CARTER, COLE, CRAWFORD, DENT, GASCONADE, IRON, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONROE, MONTGOMERY, NEW MADRID, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SCOTT, SHANNON, SHELBY, STODDARD, TEXAS, WASHINGTON AND WAYNE COUNTIES)		
GROUP 1	$ 26.57	9.85

GROUP 2	$ 26.73	9.85
GROUP 3	$ 26.72	9.85
GROUP 4	$ 26.84	9.85
Truck drivers (FRANKLIN, JEFFERSON and ST. CHARLES COUNTIES)		
GROUP 1	$ 28.93	9.85
GROUP 2	$ 29.04	9.85
GROUP 3	$ 29.08	9.85
GROUP 4	$ 29.15	9.85
Truck drivers (LINCOLN and WARREN COUNTIES)		
GROUP 1	$ 27.58	9.85
GROUP 2	$ 27.69	9.85
GROUP 3	$ 28.73	9.85
GROUP 4	$ 27.80	9.85

TRUCK DRIVERS CLASSIFICATIONS:

GROUP 1: Flat Bed Trucks, Single Axle; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon, Single Axle

GROUP 2: Agitator and Transit Mix Trucks

GROUP 3: Flat Bed Trucks, Tandem Axle; Articulated Dump Trucks; Material Trucks, Tandem Axle; Tank Wagon, Tandem Axle

GROUP 4: Semi and/or Pole Trailers; Winch, Fork & Steel Trucks; Distributor Drivers and Operators; Tank Wagon, Semi-Trailer; Insley Wagons, Dumpsters, Half-Tracks, Speedace, Euclids and other similar equipment; A-Frame and Derrick Trucks; Float or Low Boy

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TEAM0056-001 05/01/2010

	Rates	Fringes
Truck drivers (ANDREW, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR, CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DEKALB, DOUGLAS, GREENE, HENRY, HICHKORY, HOWARD, JASPER, LACLEDE, LAWRENCE, LINN, LIVINGSTON, MONITEAU, MORGAN, NEWTON, PETTIS, POLK, RANDOLPH, ST. CLAIR, SALINE, VERNON, WEBSTER AND WRIGHT COUNTIES)		
GROUP 1	$ 26.27	9.85
GROUP 2	$ 26.43	9.85
GROUP 3	$ 26.42	9.85
GROUP 4	$ 26.54	9.85

Truck drivers: (ATCHISON, BARRY, GENTRY, GRUNDY, HARRISON, HOLT, MCDONALD, MERCER, NODAWAY, OZARK, STONE, SULLIVAN, TANEY AND WORTH COUNTIES)

GROUP 1	$ 25.54	9.85
GROUP 2	$ 25.70	9.85
GROUP 3	$ 25.69	9.85
GROUP 4	$ 25.81	9.85

Truck drivers; (BUCHANAN, JOHNSON AND LAFAYETTE COUNTIES)

GROUP 1	$ 27.48	9.85
GROUP 2	$ 27.59	9.85
GROUP 3	$ 27.63	9.85
GROUP 4	$ 27.70	9.85

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Flat bed trucks single axle; station wagons; pickup trucks; material trucks single axle; tank wagons single axle.

GROUP 2: Agitator and transit mix-trucks.

GROUP 3: Flat bed trucks tandem axle; articulated dump trucks; material trucks tandem axle; tank wagons tandem axle.

GROUP 4: Semi and/or pole trailers; winch, fork & steel trucks; distributor drivers & operators; tank wagons semi-trailer; insley wagons, dumpsters, half-tracks, speedace, euclids & other similar equipment; A-frames and derrick trucks; float or low boy.

TEAM0245-001 03/25/2010

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DALLAS, DENT, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, MILLER, NEWTON, OZARK, PHELPS, POLK, PULASKI, SHANNON, STONE, TANEY, TEXAS, VERNON, WEBSTER AND WRIGHT COUNTIES

	Rates	Fringes
Truck drivers:		
Traffic Control Service Driver	$ 19.45	0.00

PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, employee's birthday and 2 personal days.

TEAM0541-001 04/01/2010

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 29.21	11.10
GROUP 2	$ 28.64	11.10
GROUP 3	$ 28.12	11.10

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Mechanics and Welders, Field; A-Frame Low Boy-Boom ruck Driver.

GROUP 2: Articulated Dump Truck; Insley Wagons: Dump Trucks, Excavating, 5 cu yds and over; Dumpsters; Half-Tracks: Speedace: Euclids & similar excavating equipment Material trucks, Tandem Two teams; Semi-Trailers; Winch trucks-Fork trucks; Distributor Drivers and Operators; Agitator and Transit Mix; Tank Wagon Drivers, Tandem or Semi; One Team; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon Drivers, Single Axle

GROUP 3: Oilers and Greasers - Field

TEAM0682-002 05/01/2010

ST LOUIS CITY AND COUNTY

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 28.605	6.69+a+b+c+d
GROUP 2	$ 28.805	6.69+a+b+c+d
GROUP 3	$ 28.905	6.69+a+b+c+d

a. PENSION: 5/1/2010 - $156.20 per week.
5/1/2011 - $168.70 per week.
5/1/2012 - $182.20 per week.

b. HAZMAT PREMIUM: If Hazmat certification on a job site is required by a state or federal agency or requested by project owner or by the employer, employees on that job site shall receive $1.50 premium pay.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Pick-up trucks; forklift, single axle; flatbed trucks; job site ambulance, and trucks or trailers of a water level capacity of 11.99 cu. yds. or less

GROUP 2 - Trucks or trailers of a water level capacity of 12.0 cu yds. up to 22.0 cu yds. including euclids, speedace and similar equipment of same capacity and compressors

GROUP 3 - Trucks or trailers of a water level capacity of 22.0 cu. yds & over including euclids, speedace & all floats, flatbed trailers, boom trucks, winch trucks,

including small trailers, farm wagons tilt-top trailers, field offices, tool trailers, concrete pumps, concrete conveyors & gasoline tank trailers and truck mounted mobile concrete mixers

FOOTNOTE FOR TRUCK DRIVERS:

c. PAID HOLIDAYS: Christmas Day, Independence Day, Labor Day, Memorial Day, Veterans Day, New Years Day, Thanksgiving Day

d. PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of service in any one contract year. When such an employee has completed 3 years of continuous employment with the same employer and then works the above required number of hours, he shall receive double the number of days of vacation specified above. When such an employee has completed 10 years of continuous employment with the same employer and then works the above required number of hours, he shall receive triple the number of days of vacation specified above. When such an employee has completed 15 years of continuous employment with the same employer and then works the above required number of hours, he shall receive 4 times the number of days of vacation specified above.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter

* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

State Prevailing Wage Section

Missouri
Division of Labor Standards

WAGE AND HOUR SECTION

JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 18

Section 036

FRANKLIN COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by
Carla Buschjost Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: **March 10, 2011**

Last Date Objections May Be Filed: **April 11, 2011**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	** Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker			$36.26	55	60	$18.11
Boilermaker	6/11		$31.75	57	7	$24.56
Bricklayers-Stone Mason	9/11		$30.30	72	5	$18.81
Carpenter	6/11	d	$33.88	77	41	$13.25
Cement Mason	6/11	f	$27.53	80	6	$14.56
Electrician (Inside Wireman)	6/11		$31.00	82	71	$9.56 + 37.5%
Communication Technician			$27.40	44	47	$8.43 + 29%
Elevator Constructor	6/11	a	$42.195	26	54	$23.305
Operating Engineer						
Group I	6/11		$29.11	3	66	$21.36
Group II	6/11		$29.11	3	66	$21.36
Group III	6/11		$27.21	3	66	$21.36
Group III-A	6/11		$29.11	3	66	$21.36
Group IV	6/11		$23.75	3	66	$21.36
Group V	6/11		$23.75	3	66	$21.36
Pipe Fitter			$34.00	91	69	$21.43
Glazier			$31.68	87	31	$20.63 + 13.2%
Laborer (Building):						
General		c	$25.06	113	3	$10.17
First Semi-Skilled		b	$25.26	113	3	$10.17
Second Semi-Skilled		b	$25.26	113	3	$10.17
Lather			USE CARPENTER RATE			
Linoleum Layer & Cutter	9/11		$29.08	92	26	$12.95
Marble Mason	7/11		$30.15	76	51	$12.45
Millwright	6/11		$33.88	77	41	$13.25
Iron Worker	8/11		$31.98	11	8	$19.775
Painter			$29.00	104	12	$12.33
Plasterer	7/11		$28.61	67	3	$15.23
Plumber			$34.00	91	69	$21.43
Pile Driver			USE CARPENTER RATE			
Roofer	6/11		$28.65	15	73	$14.77
Sheet Metal Worker	6/11		$35.86	32	25	$21.24
Sprinkler Fitter	9/11		$37.73	66	18	$19.10
Terrazzo Worker	6/11		$30.79	116	5	$11.09
Tile Setter	7/11		$30.15	76	51	$12.45
Truck Driver-Teamster						
Group I		e	$28.625	35	36	$8.65
Group II		e	$28.735	35	36	$8.65
Group III		e	$28.775	35	36	$8.65
Group IV		e	$28.845	35	36	$8.65
Traffic Control Service Driver			$28.775	22	55	$9.045
Welders-Acetylene & Electric		*				

Fringe Benefit Percentage is of the Basic Hourly Rate

Attention Workers: If you are not being paid the appropriate wage rate and fringe benefits contact the Division of Labor Standards at (573) 751-3403.

**Annual Incremental Increase

OCCUPATIONAL TITLE	** Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits

* Welders receive rate prescribed for the occupational title performing operation to which welding is incidental.

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

a - Vacation: Employees over 5 years - 8%; Employees under 5 years - 6%
b - Projects over $500,000 - $25.26; Projects under $500,000 - $23.76
c - Projects over $500,000 - $25.06; Projects under $500,000 - $23.56
**d - Projects over $1 Million - $33.88; Projects under $1 Million - $28.79
e - Group I:
Projects over $3 3/4 Million - $28.625
Projects under $3 3/4 Million - $25.125
Group II:
Projects over $3 3/4 Million - $28.735
Projects under $3 3/4 Million - $25.235
Group III:
Projects over $3 3/4 Million - $28.775
Projects under $3 3/4 Million - $25.275
Group IV:
Projects over $3 3/4 Million - $28.845
Projects under $3 3/4 Million - $25.345
**f - Projects over $10 Million - $27.53; Projects under $10 Million - $26.83

REPLACEMENT PAGE
FRANKLIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION

FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

NO. 3: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the straight time rate. The regular workday shall begin between the hours of 6:00 a.m. and 9:00 a.m. The Employer may have the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather, holiday or other conditions beyond the control of the Employer, they shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1½) the hourly rate plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus $2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus $3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

NO. 11: Means eight (8) hours shall constitute a day's work, with the starting time to be established between 6:00 a.m. and 8:00 a.m. from Monday to Friday. Time and one-half (1½) shall be paid for first two (2) hours of overtime Monday through Friday and the first eight (8) hours on Saturday. All other overtime hours Monday through Saturday shall be paid at double (2) time rate. Double (2) time shall be paid for all time on Sunday and recognized holidays or the days observed in lieu of these holidays.

NO. 15: Means the regular working day shall be scheduled to consist of at least eight (8) hours, but no more than ten (10) consecutive hours, exclusive of the lunch period. The regular working day may be scheduled to commence at any time between the hours of 5:00 a.m. and 10:00 a.m. All work performed in excess of forty (40) hours in one work week, or in excess of ten (10) hours in one work day shall be paid at the rate of one and one-half (1½) times the regular hourly wage scale. Any work performed on a Saturday shall be paid for at the rate of one and one-half (1½) times the regular hourly wage scale unless such Saturday work falls under the category of Saturday Make-Up Day. Any work performed by Employees anywhere on Sunday or recognized holidays, shall be paid for at the rate of double (2) time the regular wage scale. If, during the course of a work week, an Employee is unable to work for any reason, and, as a result, that Employee has not accumulated forty (40) hours of compensable time at the straight time rate, the Employer, at his option may offer the Employee the opportunity to work on Saturday at straight time; provided, however, if during the period worked by said Employee on Saturday, the Employee's compensable time at the straight time rate exceeds forty (40) hours, all time worked in excess of the forty (40) hours will be paid at the rate of one and one-half (1½) times the regular hourly wage scale.

NO. 22: Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

REPLACEMENT PAGE
FRANKLIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION

NO. 26: Means that the regular working day shall consist of eight (8) hours worked between 6:00 a.m., and 5:00 p.m., five (5) days per week, Monday to Friday, inclusive. Hours of work at each jobsite shall be those established by the general contractor and worked by the majority of trades. (The above working hours may be changed by mutual agreement). Work performed on Construction Work on Saturdays, Sundays and before and after the regular working day on Monday to Friday, inclusive, shall be classified as overtime, and paid for at double (2) the rate of single time. The employer may establish hours worked on a jobsite for a four (4) ten (10) hour day work week at straight time pay for construction work; the regular working day shall consist of ten (10) hours worked consecutively, between 6:00 a.m. and 6:00 p.m., four (4) days per week, Monday to Thursday, inclusive. Any work performed on Friday, Saturday, Sunday and holidays, and before and after the regular working day on Monday to Thursday where a four (4) ten (10) hour day workweek has been established, will be paid at two times (2) the single time rate of pay. The rate of pay for all work performed on holidays shall be at two times (2) the single time rate of pay.

NO. 32: The regular working day shall consist of seven and one-half (7½) hours of labor on the job between eight (8) a.m. and four (4) p.m. and the regular working week shall consist of five (5) consecutive seven and one-half (7½) hour day's of labor on the job beginning with Monday and ending with Friday of each week. The normal work week is 37½ hours. All full-time or part-time labor performed during such hours shall be recognized as regular working hours and paid for at the regular hourly rate. All work performed during regular work hours on Saturdays shall be paid at time and one-half (1-1/2). All work performed outside of regular working hours and performed during the regular work week, shall be at double (2) times the regular rate, except that the first two (2) hours following the regular work day shall be paid at one and one-half (1½) times the regular rate. And, a flexible starting time as early as 7:00 a.m. may be implemented when mutually agreed upon by the interested parties. An early starting time of 6:00 a.m. may be used during summer months to avoid excessive afternoon temperatures. This early starting time to be used when mutually agreed upon by the interested parties. SHIFT RATE: Shift work would start after 4:00 p.m. to 6:00 a.m. The first 7½ hours would be at 115% of the basic wage rate. Overtime Monday through Friday would be at 1 ½ of base shift rate. Saturday first 7 ½ hours of work – 1½ of base shift rate. Saturday – work after 7½ hours – 2 times the basic wage rate. Sunday and Holidays – 2 times the basic wage rate. All work performed on recognized holidays and Sundays shall be paid double (2) time. Appropriate overtime rates to be based on fifteen minute increments.

NO. 35: Means a regular work week of forty (40) hours, will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interested parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 44: Means forty (40) hours shall constitute a work week, Monday through Friday. Eight (8) hours shall constitute a work day. Hours of work shall be between the hours of 7:00 a.m. and 4:30 p.m. All work performed before 7:00 a.m. and after 4:30 p.m. and all work performed in excess of eight (8) hours in any one work day, over forty (40) hours in any work week and the first eight (8) hours of work on Saturday, shall be paid at the rate of one and one-half (1½) times the regular rate of pay. All hours worked in excess of eight (8) hours on Saturday, all hours worked on Sunday and on holidays, or days that may be celebrated as such, and as designated by the federal government, shall be paid at two (2) times the regular rate of pay. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall receive eight (8) hours pay at the regular hourly rate of pay plus two dollars ($2.00) per clock hour. All work performed between the hours of 12:30 a.m. and 9:00 a.m. on a third shift shall receive eight (8) hours pay at the regular hourly rate plus four dollars ($4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1½ x) the "shift" hourly rate.

NO. 55: Means the regular work day shall be eight (8) hours between 6:00 a.m. and 4:30 p.m. The first two (2) hours of work performed in excess of the eight (8) hour work day, Monday through Friday, and the first ten (10) hours of work on Saturday, shall be paid at one & one-half (1½) times the straight time rate. All work performed on Sunday, observed holidays and in excess of ten (10) hours a day, Monday through Saturday, shall be paid at double (2) the straight time rate.

REPLACEMENT PAGE
FRANKLIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION

NO. 57: Means eight (8) hours per day shall constitute a day's work and forty (40) hours per week, Monday through Friday, shall constitute a week's work. The regular starting time shall be 8:00 a.m. The above may be changed by mutual consent of authorized personnel. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. It being understood that all other pertinent information must be adjusted accordingly. All time worked before and after the established workday of eight (8) hours, Monday through Friday, all time worked on Saturday, shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay.

NO. 66: Means eight (8) hours shall constitute a day's work beginning at 8:00 a.m. and ending at 4:30 p.m. The work week shall be forty (40) hours beginning Monday at 8:00 a.m. and ending Friday at 4:30 p.m. The Employer at his option may use a flexible starting time between the hours of 7:00 a.m. and 9:00 a.m. All overtime, that is worked outside of the above established working hours of Monday through Friday, shall be paid at double (2) time, including Saturdays, Sundays and Holidays.

NO. 67: Means eight (8) hours shall constitute a day's work, with a flexible starting time to begin between 6:00 a.m. to 8:00 a.m., five (5) days a week, Monday through Friday. Any work over eight (8) hours in any one day shall be at the overtime rate, which is time & one-half (1½). Any work on Saturday shall be at time & one-half (1½), unless a Make-Up Day due to inclement weather is in effect. Any work on Sundays or holidays shall be at double (2) time. Four (4) days, ten (10) hours each day to be worked during Monday through Friday, shall be paid at straight time. A Make-Up Day Due To Inclement Weather Only - Employee(s) will be permitted to work an eight (8) hour make-up day on Saturday only, and the employee will receive the regular straight time wage rate.

NO. 72: Means that except as is otherwise provided herein, the work week shall be determined to begin at 8:00 a.m. Wednesday and end at 4:30 p.m. on the following Tuesday. Except as herein provided, working hours are from 8:00 a.m. to 11:55 a.m. and 12:30 p.m. to 4:25 p.m. and no more than the regular hours shall be worked during the forenoon or afternoon at the regular rate. In the case of days of inclement weather starting time and quitting time may be adjusted so long as the hours worked on such days do not exceed eight (8) and do not extend beyond 4:30 p.m. In circumstances where the Employee or Employees have regularly been working overtime on a particular day or days, no adjustment in the starting time shall operate to deprive Employees of overtime pay, which they would have otherwise received but for the change in the starting time. The parties understand that the application of the provisions of the preceding sentence will result in Employees receiving overtime pay even where they have not worked more than with (8) hours on a particular day. Regardless of the staring time, the forenoon working hours shall end at 11:55 a.m. and the afternoon working hours shall begin at 12:30 p.m. and end 8 hours and 25 minutes after the staring time fixed by the Employer for forenoon hours. Work performed by an employee on a non-holiday Saturday, except as hereinafter provided, or at night or before or after regular working hours on a non-holiday weekday, shall be considered overtime work, for which Employees working during such time shall be paid at the rate of one and one-half (1½) times their regular hourly wage rate for each hour or fraction thereof, worked during such time. Work performed on a Sunday or the recognized holidays shall be considered overtime work for which the Employee shall be paid twice the amount of his or her regular hourly wage rate for each hour or fraction thereof worked on any such day.

NO. 76: Means the standard workday shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. with a thirty (30) minute unpaid lunch hour occurring in the middle of the shift. The standard workweek shall consist of five standard workdays commencing on Monday and ending on Friday. The normal starting and quitting times may be changed by mutual consent of interested parties. All time worked before and after the established eight (8) hour workday, Monday through Friday, and all time worked on Saturday, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sunday and holidays shall be paid at the rate of double (2) the hourly wage in effect. All work done on Saturday will be done at time & one-half (1½), unless Saturday shall be used as a make-up day. If an employee should lose one or more days in a work week and use Saturday as a make-up day the pay shall be at the regular hourly base wage rate and benefits.

REPLACEMENT PAGE
FRANKLIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION

NO. 77: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between the hours of 6:00 a.m. and 8:00 a.m. with the starting time to be determined by the Employer, unless project owner requires different starting time. This adjustable starting time can, at the Employer's option, be staggered to permit starting portions of the work force at various times within the prescribed hours. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty (30) minute lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work Monday through Thursday. In the event a job is down due to weather conditions, safety or other conditions beyond the control of the Employer, then Friday may, at the option of the employer, be worked as a make-up day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. Time and one-half (1 ½) shall be paid for all overtime hours worked during the week, Monday through Friday and for all work performed on Saturday. Double (2) time shall be paid for all time worked on Sunday and recognized holidays.

NO. 80: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute unpaid lunch period, with pay at the straight time rate. If the workday starts at 8:00 a.m., the quitting time shall be no later than 4:30 p.m. When separate crews are used, the start time may be adjusted from 6:00 AM through 9:00 AM. The start time may be further adjusted to 9:30 AM throughout the year if required by government agency or municipal ordinance. Time and one-half (1½) shall be paid after eight (8) consecutive hours Monday through Saturday. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate. If a crew of another trade working for the employer is receiving overtime pay, the Cement Mason crew shall receive overtime pay. The Employer has the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. When an Employer schedules 4-10's, the Employer will not bring in any other crew for a fifth workday on the project while not calling in the normal crew that had been scheduled for that project. If the Employer elects to work 4-10's Monday through Thursday and is stopped due to inclement weather, or other conditions beyond the control of the Employer, the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. Shifts may be established when considered necessary by the employer. Shift hours and rates will be as follows. All shifts shall be eight (8) hours plus one-half (1/2) hour for unpaid lunch. First shift will begin at 8:00 a.m. and end at 4:30 p.m. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and will be paid the straight time rate plus $2.50 per hour premium. The third shift shall start eight hours after the start of the second shift and will be paid the straight time rate plus $3.50 per hour premium. Shifts will be established for a minimum of three consecutive workdays. If only two shifts are worked, the Employer may regulate the start time to take maximum advantage of daylight hours.

NO. 82: Means the work day shall consist of eight (8) hours worked between 7:00 a.m. and 4:30 p.m. Forty (40) hours will constitute the work week from Monday through Friday, inclusive. Up to four (4) hours of overtime work per day performed before or after the assigned normal work day, (twelve (12) continuous hours, starting no earlier than 6:00 a.m., Monday through Friday), shall be paid at a rate of one and one-half times (1.5x) that employee's hourly rate. Any additional overtime, Monday through Friday, shall be paid at two times (2x) the regular rate of pay. The first eight hours of overtime work on Saturday shall be paid at the rate of one and one-half times (1.5x) the regular rate of pay. Hours worked in excess of eight (8) hours on Saturday shall be paid at two times (2x) the regular rate of pay. Double time shall be paid for work performed on Sundays, recognized legal holidays or days that may be celebrated as such as designated by the federal government. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall be paid at the regular hourly rate plus two dollars ($2.00) per clock hour. All shifts for work performed between the hours of 12:30 a.m. and 9:00 a.m. shall be paid at the regular hour rate plus four dollars ($4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1.5x) the "shift" hourly rate.

NO. 87: Means eight (8) hours starting between 6:00 a.m. and 8:00 a.m. and ending between 2:30 p.m. and 4:30 p.m. at the Employers discretion shall constitute a day's work. Any work prior to 6:00 a.m. or after eight (8) hours shall be paid at the overtime rate. Five (5) days from Monday through Friday inclusive shall constitute a regular work week. All hours before and after these regular hours shall be considered overtime and shall be paid for at the rate of double (2) time. All work on Saturday and Sunday shall be paid at double (2) the prevailing scale of wages.

REPLACEMENT PAGE
FRANKLIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION

NO. 91: Means eight (8) hours shall constitute a day's work commencing at 8:00 a.m. and ending at 4:30 p.m., allowing one-half (½) hour for lunch. The option exists for the Employer to use a flexible starting time between the hours of 6:00 a.m. and 9:00 a.m. The regular workweek shall consist of forty (40) hours of five (5) workdays, Monday through Friday. The workweek may consist of four (4) ten (10) hour days from Monday through Thursday, with Friday as a make-up day. If the make-up day is a holiday, the employee shall be paid at the double (2) time rate. The employees shall be paid time and one-half (1½) for work performed on Saturdays, before the regular starting time or after the regular quitting time or over eight (8) hours per work day (unless working a 10-hour work day, then time and one-half (1½) is paid for work performed over ten (10) hours a day) or over forty (40) hours per work week. Work performed on Sundays and recognized holidays shall be paid at the double (2) time rate of pay. SHIFT WORK: When it is necessary for the project to operate in shifts, there will be three (3) eight (8) hour shifts commencing at 8:00 a.m. Shift work must continue for a period of not less than three (3) consecutive work days, two (2) days which must be regular work days (Monday through Friday). In the event the second or third shift of any regular work day shall fall into a Saturday or a holiday, such extension into a Saturday or holiday shall be considered as part of the previous workday and employees shall be paid at the regular shift rate. The first day shift shall work a regular eight (8) hour day at regular rates. The second shift shall be eight (8) hours regular time pay plus $2.00 per hour premium for seven and one-half (7½) hours work. Third shift will be for eight (8) hours regular time pay plus $2.50 per hour premium for seven (7) hour work.

NO. 92: Means all work performed from 8:00 a.m. to 4:30 p.m., Monday through Friday, will be at straight time pay up to forty (40) hours per week. All work performed Monday through Friday before 8:00 a.m. and after 4:30 p.m. will be done at time and one-half (1½). All work done on Saturday will be done at time and one-half (1½), unless the employer and employee agree that Saturday shall be used as a make-up day. The Employer may use a flexible starting time of 7:00 a.m. to 8:00 a.m., and quitting time of 3:30 p.m. to 4:30 p.m., and any such different work starting time shall determine whether wages are payable at the straight rate or the premium rate. All work performed on Saturday shall be paid for at time and one-half (1½), unless the Saturday has been used as a make-up day. All work performed on Sunday and holidays shall be paid for at the rate of double (2) time.

NO. 104: Means eight (8) hours per day shall constitute a standard work day between the hours of 6:00 a.m. and 8:00 p.m. The standard work week shall be forty (40) hours between 6:00 a.m. on Monday and ending 8:00 p.m. on Friday. An overtime rate of time and one-half (1½) the base hourly rate shall be paid on all hours in excess of eight (8) hours in a day Monday through Friday. Saturdays shall be considered overtime and work done on Saturday shall be paid at time and one-half (1½) the prevailing scale. Sundays and holidays shall be considered overtime and work done on these days shall be paid at double (2) the prevailing scale.

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NO. 113: The regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between 6:00 a.m. and 9:00 a.m. Overtime rates shall not be broken down into less than thirty (30) minute units of time. The Employer shall have the option of working five (5) eight (8) hour days or four (4) ten (10) hour days, Monday through Friday. If an Employer elects to work five (5) eight (8) hour days during any work week, hours worked more than eight (8) per day or forty (40) per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty (30) minute unpaid lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work, Monday through Thursday. In the event a job is down due to weather conditions, holiday, or other conditions beyond the control of the Employer, then Friday may, at the option of the Employer, be worked as a make-up day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. If an Employer elects to work eight (8) hour days and loses a day due to inclement weather, he may work ten (10) hour days the remainder of the week at straight time. In the event the Laborer working is assisting another craft being paid overtime wage rates, the laborer will receive time and one-half (1½) for hours worked on Saturday. Sundays and recognized Holidays or days observed as such, shall be paid at the double (2) time rate. Projects That Cannot Be Performed During Regular Workday: If required by owner, the contractor may perform work outside the normal work hours, and employees shall be paid the applicable straight time hourly wage rate plus a premium of ($2.50) per hour for the first eight hours worked. Any hours worked in excess of eight (8) hours shall be paid at the applicable overtime rate plus the ($2.50) per hour premium. Shift work: Shifts shall be established for a minimum of three (3) consecutive workdays. Shift hours will be defined as: First shift eight (8) hours including thirty (30) minutes for lunch. Second shift-eight (8) hours including thirty (30) minutes for lunch. Third shift eight (8) hours including thirty (30) minutes for lunch. The first shift will be paid at eight (8) hours straight time. The second shift will be paid eight (8) hours straight time plus a two dollar and fifty cent ($2.50) per hour premium, and the third shift shall be paid eight (8) hours straight time plus a three dollar and fifty cent ($3.50) per hour premium. Payment for shift work shall be determined by when an Employer first begins his shift operation, i.e., the shifts which begin on Friday morning and end on Saturday morning will be paid at straight time; the shifts which start on Saturday morning and end on Sunday morning will be paid at time and one-half (1½); the shifts which start on Sunday morning and end on Monday morning will be paid at double time. Employees working during the normal workday shall receive first shift pay; employees working predominantly during the evening hours shall receive second shift pay; employees working predominately during the early morning hours shall receive third shift pay.

NO. 116: Means the standard work day shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. The standard work week shall consist of five standard work days commencing on Monday and ending on Friday inclusive. All time worked before and after the established eight (8) hour work day, Monday through Friday, and all time worked on Saturdays, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect.

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NO. 3: All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day (November 11), Thanksgiving Day, and Christmas Day shall be compensated at the double (2) time rate of pay. When any of these holidays fall on a Sunday, the following Monday shall be observed. No work shall be performed on the days set forth except in cases of emergencies to protect life or property.

NO. 5: All work that shall be done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay.

NO. 6: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and any additional holidays which may be mutually agreed upon. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. Work performed on Sundays and holidays shall be paid at the double time rate of pay. No work shall be performed on Labor Day.

NO. 7: The following days are assigned days and are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. If a holiday falls on a Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This is applied to protect Labor Day. When a holiday falls during the normal workweek, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week. However, no reimbursement for this eight (8) hours is too paid to the workman unless worked. If workman are required to work the above enumerated holidays or days observed as such, or on Sunday, they shall receive double (2) the regular rate of pay for such work.

NO. 8: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day, or the days observed in lieu of these holidays, shall be paid at the double time rate of pay.

NO. 12: All work done on New Year's Day, Decoration Day, Independence Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Should any of these days fall on Sunday, then the following day shall be observed as the holiday. Under no circumstances shall employees be permitted to work on Labor Day.

NO. 18: All work done on New Year's Day, Memorial Day, July 4th, Labor Day, Veteran's Day, Thanksgiving Day, the Friday following Thanksgiving and Christmas Day shall be paid at the double time rate of pay. When one of the above holidays falls on Sunday, the following Monday shall be considered the holiday, and when one of the above holidays falls on Saturday, the preceding Friday shall be considered the holiday, and all work performed on said day(s) shall be paid at the double time rate.

NO. 25: All work done on New Year's Day, Martin Luther King Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving, Christmas Day, Presidential Election Day, or days locally observed as such, and Saturday and Sunday shall be recognized as holidays and shall be paid at the double (2) time rate of pay. If a named holiday falls on a Saturday, the holiday will be observed on the preceding Friday. When a named holiday falls on Sunday, the Monday after will be observed as the holiday. Appropriate overtime rates to be based on fifteen minute increments.

NO. 26: All work done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. When a Holiday occurs on Saturday it shall not be observed on either the previous Friday or the following Monday. Such days shall be regular work days. If such a holiday occurs on Sunday it shall be observed on the following Monday.

NO. 31: All work done on New Year's Day, Presidents Day, Good Friday, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, and Employee's Birthday shall be paid at the double time rate of pay. If a holiday falls on Sunday, the following Monday will be observed as the recognized holiday. If a holiday falls on Saturday, the preceding Friday will be observed as the recognized holiday.

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NO. 36: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 41: The following days shall be observed as legal holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. No work shall be performed on the Fourth of July, Labor Day or Christmas Day. Any work performed on the above holidays shall be paid for at two (2) times the regular straight time rate of pay. When any of the above holidays fall on Sunday, the following Monday shall be observed as such holiday. If a holiday falls on Saturday, it shall not be considered to be observed on the previous Friday or following Monday. Such days shall be regular workdays.

NO. 47: The following holidays are recognized: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day. When a holiday listed above falls on Saturday, it shall be celebrated on the Friday preceding the holiday. When a holiday falls on Sunday, the following Monday shall be observed. Holidays referred to above shall be paid for at the double (2) time rate of pay when worked.

NO. 51: All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect. The Employer agrees to recognize the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. If the holiday falls on Sunday, it shall be recognized on the following Monday. If the holiday falls on a Saturday, it shall be recognized as a Saturday only holiday.

NO. 54: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay. When a holiday falls on Saturday, it shall be observed on Friday. When a holiday falls on Sunday, it shall be observed on Monday.

NO. 55: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 60: All work performed on New Year's Day, Armistice Day (Veteran's Day), Decoration Day (Memorial Day), Independence Day (Fourth of July), Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. No work shall be performed on Labor Day except when triple (3) time is paid. When a holiday falls on Saturday, Friday will be observed as the holiday. When a holiday falls on Sunday, the following Monday shall be observed as the holiday.

NO. 66: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

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NO. 69: All work performed on New Year's Day, Decoration Day, July Fourth, Labor Day, Veteran's Day, Thanksgiving Day or Christmas Day shall be compensated at double (2) their straight-time hourly rate of pay. Friday after Thanksgiving and the day before Christmas will also be holidays, but if the employer chooses to work these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Sunday in a particular year, the holiday will be observed on the following Monday.

NO. 71: All work performed on the following recognized holidays, or days that may be celebrated as such, shall be paid at the double (2) time rate of pay: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day. If a holiday falls on Sunday, it shall be celebrated on Monday. If a holiday falls on Saturday, it shall be celebrated on the Friday proceeding such Saturday.

NO. 73: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day (or mutually agreed date of the Friday after Thanksgiving Day may be substituted for Veteran's Day), Thanksgiving Day and Christmas Day, or in the event that any of said Holidays falls on Sunday, then the day or days generally recognized as such. Any work performed anywhere on any of the aforesaid Holidays, or on the day or days recognized and observed as such, shall be paid for at double (2) time the regular hourly rate.

OCCUPATIONAL TITLE	* Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
CARPENTER					
Journeymen	6/11	$31.23	23	16	$13.15
Millwright	6/11	$31.23	23	16	$13.15
Pile Driver Worker	6/11	$31.23	23	16	$13.15
OPERATING ENGINEER					
Group I	6/11	$29.11	10	9	$21.36
Group II	6/11	$29.11	10	9	$21.36
Group III	6/11	$27.81	10	9	$21.36
Group IV	6/11	$24.35	10	9	$21.36
Oiler-Driver	6/11	$24.81	10	9	$21.36
LABORER					
General Laborer	6/11	$26.61	2	4	$10.92
Skilled Laborer	6/11	$27.21	2	4	$10.92
CEMENT MASON	6/11	$27.53	80	22	$14.48
TRUCK DRIVER-TEAMSTER					
Group I		$28.625	25	21	$8.65
Group II		$28.735	25	21	$8.65
Group III		$28.775	25	21	$8.65
Group IV		$28.845	25	21	$8.65

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate sheet.

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FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

NO. 2: Means a regular workweek shall be forty (40) hours and will start on Monday and end on Friday. The Employer shall have the option of working five 8-hour days or four 10-hour days Monday through Friday. If an Employer elects to work five 8-hour days during any workweek, hours worked more than eight (8) per day or 40 per week shall be paid at time and one-half the hourly rate Monday through Friday. If an Employer elects to work four 10-hour days in a week, work performed more than ten (10) hours per day or 40 hours per week shall be paid at time and one-half the hourly rate Monday through Friday. When working a five 8-hour day schedule and an Employer is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. If an Employer is working a four 10-hour day schedule and loses a day due to inclement weather, he may work 10 hours Friday at straight time. All hours worked over the 40 hours Monday through Friday will be paid at 1 ½ overtime rate. A workday shift is to begin at the option of the Employer, between 6:00 a.m. and not later than 9:00 a.m. However, the project starting time may be advanced or delayed if required. If workmen are required to work the enumerated holidays or days observed as such or Sundays, they shall receive double (2) the regular rate of pay for such work. Overtime shall be computed at one-half (1/2) hour intervals. Shift: The Contractor may elect to work one, two or three shifts on any work. When operating on more than one shift, the shifts shall be known as the day shift, swing shift, and graveyard shift as such terms are recognized in the industry. When two shifts are worked on any operation, the shifts will consist of eight (8) or ten (10) hours exclusive of lunchtime. When three shifts are worked the first day or day shift will consist of eight (8) hours exclusive of lunchtime. The second or swing shift shall consist of seven and one-half (7 1/2) hours work for eight hours pay, exclusive of lunchtime, and the third or the graveyard shift shall consist of seven (7) hours work for eight (8) hours pay, exclusive of the lunchtime. All time in excess of normal shifts shall be considered overtime. Multiple shift (the two or three shift) operation will not be construed on the entire project if at anytime it is deemed advisable and necessary for the Employer to multiple shift a specific operation. However, no shift shall be started between midnight and six a.m. except the graveyard shift on a three-shift operation, or except in an unusual or emergency situation. If an Employer starts a shift between midnight and 6 a.m. except the graveyard shift on a three-shift operation, he shall reimburse all employees for the entire shift at the double time rate. Completion of the second shift on a two-shift operation or completion of the graveyard shift on a three-shift operation that carries over into Saturday morning, shall be at the straight time rate. Overtime shall be computed at ½ hour intervals.

NO. 10: Means the regular workday for which employees shall be compensated at straight time hourly rate of pay shall, unless otherwise provided for, begin at 8:00 a.m. and end at 4:30 p.m. The regular workweek shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. except as may be modified. The starting time may be either advanced or delayed one hour or two hours at the discretion of the Employer. The Employer may have the option to schedule his work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate. If the Employer elects to work Monday through Thursday and is stopped due to inclement weather, holidays or other conditions beyond the control of the Employer, he shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hour workweek. All necessary overtime and work performed on Saturday, shall be paid at time and one-half (1½) the hourly rate, plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate, plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus $2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus $3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

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NO. 23: Means the regular workweek shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, (10) hours per day. All work over ten (10) hours in a day or forty (40) hours in a week shall be at the overtime rate of one and one-half (1½) times the regular hourly rate. The regular workday shall be either eight (8) or ten (10) hours. If a job can't work forty (40) hours Monday through Friday because of inclement weather or other conditions beyond the control of the Employer, Friday or Saturday may be worked as a make-up day at straight time (if working 4-10's). Saturday may be worked as a make-up day at straight time (if working 5-8's). An Employer, who is working a four (4) ten (10) hour day work schedule may use Friday as a make-up day when a workday is lost due to a holiday. A workday is to begin at the option of the Employer but not later than 11:00 a.m. except when inclement weather, requirements of the owner or other conditions beyond the reasonable control of the Employer prevent work. Except as worked as a make-up day, time on Saturday shall be worked at one and one-half (1½) times the regular rate. Work performed on Sunday shall be paid at two (2) times the regular rate. Work performed on recognized holidays or days observed as such, shall also be paid at the double (2) time rate of pay.

NO. 25: Means a regular work week of forty (40) hours, starting on Monday and ending on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interest parties. All hours worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 80: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute unpaid lunch period, with pay at the straight time rate. If the workday starts at 8:00 a.m., the quitting time shall be no later than 4:30 p.m. When separate crews are used, the start time may be adjusted from 6:00 AM through 9:00 AM. The start time may be further adjusted to 9:30 AM throughout the year if required by government agency or municipal ordinance. Time and one-half (1½) shall be paid after eight (8) consecutive hours Monday through Saturday. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate. If a crew of another trade working for the employer is receiving overtime pay, the Cement Mason crew shall receive overtime pay. The Employer has the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. When an Employer schedules 4-10's, the Employer will not bring in any other crew for a fifth workday on the project while not calling in the normal crew that had been scheduled for that project. If the Employer elects to work 4-10's Monday through Thursday and is stopped due to inclement weather, or other conditions beyond the control of the Employer, the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. Shifts may be established when considered necessary by the employer. Shift hours and rates will be as follows. All shifts shall be eight (8) hours plus one-half (1/2) hour for unpaid lunch. First shift will begin at 8:00 a.m. and end at 4:30 p.m. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and will be paid the straight time rate plus $2.50 per hour premium. The third shift shall start eight hours after the start of the second shift and will be paid the straight time rate plus $3.50 per hour premium. Shifts will be established for a minimum of three consecutive workdays. If only two shifts are worked, the Employer may regulate the start time to take maximum advantage of daylight hours.

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HOLIDAY SCHEDULE – HEAVY CONSTRUCTION

NO. 4: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or observed as such, shall be paid at the double time rate of pay. When a Holiday falls on a Sunday, Monday shall be observed. No work shall be performed on Labor Day, except in case of jeopardy to life or property. This is applied to protect Labor Day.

NO. 9: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

NO. 16: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on Sunday, it shall be observed on the following Monday. If a holiday falls on Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid to the worker unless worked. If workers are required to work the above recognized holidays or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 21: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 22: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and any additional holidays which may be mutually agreed upon. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. Work performed on Sundays and holidays shall be paid at the double time rate of pay. No work shall be performed on Labor Day.

OUTSIDE ELECTRICIAN

These rates are to be used for the following counties:

Adair, Audrain, Boone, Callaway, Camden, Carter, Chariton, Clark, Cole, Cooper, Crawford, Dent, Franklin, Gasconade, Howard, Howell, Iron, Jefferson, Knox, Lewis, Lincoln, Linn, Macon, Maries, Marion, Miller, Moniteau, Monroe, Montgomery, Morgan, Oregon, Osage, Perry, Phelps, Pike, Pulaski, Putnam, Ralls, Randolph, Reynolds, Ripley, St. Charles, St. Francois, St. Louis City, St. Louis County, Ste. Genevieve, Schuyler, Scotland, Shannon, Shelby, Sullivan, Texas, Warren, and Washington.

COMMERCIAL WORK

Occupational Title	Basic Hourly Rate	Total Fringe Benefits
Journeyman Lineman	$35.03	$4.75 + 42%
Lineman Operator	$30.24	$4.75 + 42%
Groundman	$23.38	$4.75 + 42%

OVERTIME RATE: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed outside the regularly scheduled working hours and on Saturdays, Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

HOLIDAY RATE: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.

UTILITY WORK

Occupational Title	Basic Hourly Rate	Total Fringe Benefits
Journeyman Lineman	$35.03	$4.75 + 39.55%
Lineman Operator	$30.24	$4.75 + 39.55%
Groundman	$23.38	$4.75 + 39.55%

OVERTIME RATE: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Worked performed in the first eight (8) hours on Saturday shall be paid at the rate of one and eight tenths (1.8) the regular straight time rate. Work performed outside these hours and on Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

HOLIDAY RATE: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.

JOB SPECIAL PROVISIONS

(Job Special Provisions shall prevail over all other contract documents whenever in conflict therewith.)

A. AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE AND FINAL ACCEPTANCE OF CONSTRUCTED FACILITIES

1.0 Description. The contractor shall comply with all laws pertaining to the Americans with Disabilities Act during construction of pedestrian facilities on public rights of way for this project. An ADA Post Construction Checklist is provided herein to be utilized by the contractor for verifying compliance with the ADA law. The contractor is expected to familiarize himself with the plans involving pedestrian facilities and the ADA Post Construction Checklist prior to performing the work.

2.0 ADA Post Construction Checklist. The contractor can locate the ADA Inspection Checklist form on the Missouri Department of Transportation website:

http://www.modot.mo.gov/business/contractor_resources/forms.htm

2.1 The checklist is intended to be a helpful tool for the contractor to use during the construction of the pedestrian facilities and a basis for the commission's acceptance of work. Prior to work being performed, the contractor shall bring to the engineer's attention any planned work that is in conflict with the design or with the requirement shown in the checklist. Situations may arise where the checklist may not fully address all requirements needed to construct a facility to the full requirements of current ADA law. In those situations, the contractor shall propose a solution to the engineer that is compliant with current ADA law using the following hierarchy of resources: Americans with Disabilities Act Accessibility Guidelines (ADAAG), Draft Public Rights of Way Accessibility Guidelines (PROWAG), MoDOT's Engineering Policy Guidelines (EPG), or a solution approved by the Access Board.

2.2 It is encouraged that the contractor monitor the completed sections of the newly constructed pedestrian facilities in attempts to minimize impacts that his equipment, subcontractors or general public may have on the tolerances as established in the checklist.

3.0 Coordination of Construction.

3.1 Prior to construction and/or closure on an existing pedestrian path of travel, the contractor shall submit a schedule of work to be constructed, which includes location of work performed, the duration of time the contractor expects to impact the facility and an accessible signed pedestrian detour during each stage of construction. This plan shall be submitted to the engineer for review and approval at or prior to the pre-construction conference.

3.2 When consultant survey is included in the contract, the contractor shall use their survey crews to verify that the intended design can be constructed to the full requirements as established in the ADAAG. When ADAAG does not give sufficient information to construct the contract work, the contractor shall refer to the Draft PROWAG.

3.3 When consultant survey is not included in the contract, the contractor shall coordinate with the engineer, prior to construction, to determine if additional survey will be required to confirm the designs constructability.

4.0 Final Acceptance of Work. The contractor shall provide the completed ADA Post Construction Checklist to the engineer at the semi-final inspection. ADA improvements require final inspection and compliance with the ADA Post Construction Checklist. Each item listed in the checklist must receive either a "YES" or an "N/A" score. Any item receiving a "NO" will be deemed non-compliant and shall be corrected at the contractor's expense unless deemed otherwise by the engineer.

5.0 Basis of Payment. The contractor will receive full pay of the contract unit cost for all sidewalk, ramp, curb ramp, median, island, approach work, cross walk striping, APS buttons, pedestrian heads and detectible warning systems that are completed during the current estimate period as approved by the engineer. Based upon completion of the ADA Post Construction Checklist, the contractor shall complete any necessary adjustments deemed non-compliant as directed by the engineer.

5.1 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 documents.

5.2 No direct payment will be made to the contractor to recover the cost of the equipment, labor, materials, or time required to provide an accessible signed detour during the various stages and locations of construction.

B. ALTERED QUANTITIES

1. The Owner reserves the right to make changes in plan details which may vary the accepted quantities from those shown on the Itemized Bid Form.

2. The Contractor shall accept, as payment in full, payment at the original Contract unit bid prices for the accepted quantities of work done. No allowance will be made for any increase expense or loss of expected profit suffered by the Contractor resulting directly from such altered quantities or indirectly from expenses derived by handling small quantities of materials or performing operations within restricted areas. No allowance shall be made for any increased expense or loss of expected profit suffered because of the anticipated use of specific equipment which was not used.

3. The MoDOT provision allowing Asphalt Cement Price Indexing will be offered for this project. The provision is as follows:

C. ASPHALT CEMENT PRICE INDEX

Adjustments will be made to the payments due the Contractor for any plant mix bituminous base, plant mix bituminous pavement, plant mix bituminous surface leveling, asphaltic concrete pavement and ultrathin bonded asphalt wearing surface that contains performance graded (PG) asphalt binder when it has been determined that the monthly average price for the midpoint of the published prices of PG64-22 for St. Louis, Missouri area and Kansas City area has fluctuated from the monthly average price of the month the project was bid. The St. Louis, Missouri area and Kansas City area prices will be obtained from the Asphalt Weekly Monitor® published by Poten & Partners Inc. The monthly base

price will be the price from the last published Asphalt Weekly Monitor® prior to MoDOT's monthly bid opening. The monthly base price, established prior to the monthly bid opening, shall apply to payment estimates for the following month.

The adjusted contract unit price will be applied to the actual amount of PG asphalt binder used by the Contractor for all asphalt items. The adjustment will be applied to projects that have a quantity of asphalt wet ton mix pay items or converted square yard quantity over 1000 tons. For projects that are paid for with square yard pay items, the adjustments will be made for applicable tons calculated based upon the plan square yard quantity and thickness converted to tons excluding the 1:1 wedge. The percentage of virgin PG asphalt binder as shown in the job mix formula will be the basis for adjustments for any asphalt mix type placed on the project during the monthly index period. The effective asphalt binder obtained from the use of Recycled Asphalt Pavement (RAP) and/or Recycled Asphalt Shingles (RAS) will not be eligible for adjustment. The base price index for PG64-22 will be applied to the asphalt mix for mixes using any PG asphalt binder.

Basis of Payment. To determine the adjustment for any material specified in this provision the following formula will be used.

$A = (B \times C) \times (D-E)$

Where:
A = Adjustment for mix placed during monthly average index period
B = Tons of Mix Placed during the monthly average index period
C = % of virgin PG asphalt binder as listed in the job mix formula in use
D = monthly average price at time mix placement
E = monthly average price at time of bid

The engineer will make adjustment payments, as defined above, for the applicable work completed during each month except for projects on which the contractor is being charged liquidated damages, due to working beyond the project completion date. In this case, the "D" value used for the price adjustment will be either the last "D" value prior to the date that liquidated damage assessment began or the current monthly "D" value, whichever is lower. If the contractor is being charged liquidated damages due to the contract being beyond the project completion date and the current months "D" value results in a deduction, then the current monthly "D" value will be used.

Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the Asphalt Cement Price Index. If the Asphalt Cement Price Index is accepted, PG asphalt binder for the project will not be eligible for a material allowance.

D. CONTRACTORS DAILY WORK SCHEDULE

1. In all cases, the Contractor shall notify the Engineer sufficiently in advance of operations, in order to provide for suitable inspection of the preparation work performed by the Contractor. In no case shall the Contractor be permitted to begin operations without prior approval by the Engineer.

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

3. Work hours will be 7:00 a.m. through 7:00 p.m., Monday through Friday.

4. The Contractor shall submit the entire and completed project construction schedule to the Engineer one week prior to the pre-construction meeting. The schedule will specifically identify the order of the work, and will be used as a tool to communicate the order and phasing of construction activities with the residents, property owners, and business owners in the area.

E. CONSTRUCTION ACTIVITY/NOTIFICATION LETTERS

1. The Contractor will be required to notify affected property owners, by letter, prior to each major phase of construction activity. This project will have three major phases: 1) storm sewer and utility installation; 2) sidewalk, driveway, and curb installation; 3) reconstructing pavement and striping.

2. The Contractor shall mail or hand-deliver each letter one week prior to each phase. Letters shall be given to each household and business to be affected by construction.

3. The letters should give an expected start date and timeframe, and state that there could be delays due to weather. In the event of delays of more than three days, a new letter shall be delivered. The Engineer shall approve all letters prior to distribution.

F. WORK ZONE TRAFFIC MANAGEMENT PLAN

1. Work Zone Traffic Management Plans shall be submitted to the Engineer for review prior to the start of work. The Plans shall include the proposed traffic control measures, hours that the traffic control will be in place, actual construction activity working hours, and anticipated beginning and ending dates.

2. The Contractor shall notify the Engineer prior to lane closures or detours. The Contractor shall be responsible for maintaining the existing traffic flow through the job site during construction (specifically, this means two-way traffic shall be maintained at all times, except as described below in section **K. Paving Operations**).

3. During all construction phases - all traffic control shall be according to the standards of the latest edition of the Manual on Uniform Traffic Control Devices developed by the Federal Highway Administration. At all times, the Contractor shall be responsible to follow the Work Zone Traffic Management Plan, and shall maintain signs, cones, lane delineators, and other facilities that may be necessary, even if not addressed on the Work Zone Traffic Management Plan, to comply with the MUTCD, and to protect the work and provide for safe travel through the construction area. Contractor trucks and equipment will not be allowed to drive on previously paved roadways.

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 closed until material is available for continuous construction and the Contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

5. Access shall be provided at all times except as noted in these Job Special Provisions. Access shall include all entrances and side streets. Two way traffic is desired at all times through the construction site. If the contractor's operations necessitate the need

to close one lane of traffic, two competent flagmen with radio contact shall direct the traffic through the site. If a one lane road situation must remain during periods when the contractor is not working or not on site, temporary traffic signals shall be used to provide traffic control. Signals shall be timed and coordinated to prevent unnecessarily long delays. Contractor is responsible for traffic control and the safety of the public at all times for the duration of the project.

6. Payment for all costs incurred in handling traffic during construction other than as provided for in the bid form will be considered incidental to the construction of the project.

G. CONSTRUCTION SCHEDULE

The Contractor shall schedule his operations to perform the work in the vicinity of the school while school is not in session and the students are not present. The Contractor shall also schedule his operations so as to not adversely affect the MFA business during the fall harvest.

H. WORKING ROOM LIMITS OF CONSTRUCTION ACTIVITY

1. **Disrupted Area Limits (2,000' at a time)** – the Contractor shall maintain construction activities within 2,000' increments on one side of the road at a time. Note: this requirement does not include the milling, paving or striping operations; or miscellaneous construction activities on the other side of the road as necessary (i.e. street crossings).

2. **Moving Forward @ 500' Increments** – the Contractor will be allowed to move forward in 500' increments, but only after the first 500' increment is complete and restored (with the exception of sodding activities as described below). This will maintain the 2000' construction activity limit. Complete and restored – will be defined as storm sewer installation, water line replacement, sidewalk and curb installation, and the 500' section has been prepared for milling and paving operations.

3. **Sodding Activity Limits** – complete sodding activities shall be performed within 4000' of removal/excavation activities.

4. The Contractor shall include the sequence of the 2,000' working limits in the construction schedule to be submitted prior to the pre-construction conference.

I. CHANGEABLE MESSAGE SIGNS

1. The Contractor shall provide a minimum of two changeable message signs for each project, for the duration of the construction.

2. The Contractor shall be responsible to update the changeable message signs on a daily basis. The language shall be pre-approved by the Engineer in an effort to effectively communicate, in advance, the future traffic disruption and possible traffic delays.

3. Messages regarding lane closures, street cuts, and paving operations; shall be posted at least a week in advance.

4. Changeable message signs will be located at strategic locations at both ends of the construction activity, as approved by the Engineer.

J. STREET CUTS

1. The Contractor will be required to provide a minimum of two competent flagmen during excavation, installation, and backfilling of open street cuts. One lane of roadway, with two-way traffic, shall be maintained at all times during street cut activities.

2. Immediately following open-street cut construction, the Contractor will be required to backfill the open trench, or cover with certified load rated steel plate. The Contractor shall submit sufficient steel plate certification documentation to the Engineer for review and approval. All steel plates used for construction must be approved by the Engineer prior to use

3. Steel plates shall be secured to the pavement to prevent movement. The plate edges shall be feather wedged with asphalt, in the direction of travel, to provide a smooth transition over the plate. The steel plates and all work required in placing and maintaining the plates shall be considered incidental to the Contract.

K. NO PARKING SIGNS

1. The Contractor shall be responsible to deliver notification to the residents regarding no parking on streets prior to operations. Temporary "No Parking" signs noting the date of construction activity shall be provided and installed at minimum intervals of 100 feet and maximum intervals of 200 feet, 48 hours in advance of work. The signs will be supplied by the Contractor and shall be approved by the Engineer prior to placement. The signs shall show the date and, if appropriate, the times of the parking restrictions.

2. The signs will be removed and properly disposed of by the Contractor approximately two (2) hours after construction activities have been completed or as directed by the Engineer.

L. PAVING OPERATIONS

1. Contractor will be allowed to close the road during paving operations. Phasing and detour plans shall be submitted to the Engineer and approved, 7 days prior to commencement of paving activities.

2. The Contractor will be required to clean the streets to be resurfaced, to the satisfaction of the Engineer, with a self propelled street sweeper with water, just prior (on the same day) to the tack coat application. Pavement shall be dry prior to tack coat application.

M. CLEANING UP

1. The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. The Contractor shall not "stockpile" any material on the job site.

2. At the end of each work day the Contractor shall remove all remaining waste materials from and about the project as well as all tools, construction equipment, machinery and surplus materials, and shall clean all surfaces (streets, sidewalks, curbs, tree boxes, private property, and cars) and leave the job site "broomclean" or its equivalent. **Failure to comply with this section will result in an immediate Stop Work order.**

N. STORAGE OF EQUIPMENT

1. Equipment and materials shall be stored at locations as directed and approved by the Engineer.

O. COORDINATION WITH PUBLIC SERVICES

1. The Contractor will be responsible to notify: a) school district, b) ambulance district, c) fire and police, and d) the City's Trash Hauler of the construction sequence and schedule. The Contractor shall coordinate trash collection for the residents during construction activities.

P. DUST CONTROL

1. The Contractor shall take all reasonable precautions to avoid the creation of excessive dust as a result of construction operations. Should excessive dust result from the Contractor's operations, or complaints regarding dust be received from private property owners, the Contractor will be required to take immediate corrective action to alleviate and resolve the dust concern. Should any private property be damaged by excessive dust as a result of the Contractor's operations, the damage shall be repaired at the Contractor's expense. No direct payment will be made to the Contractor for any reason of their compliance with this provision.

Q. DRIVEWAY APPROACH ACCESS

1. The Contractor shall notify any Business or Residence by letter, one week prior to beginning construction that is expected to affect or limit access.

2. If a Business or Property owner has two entrances, only one entrance will be allowed to be reconstructed at a time.

3. The Contactor shall be responsible for maintaining access to all side roads, commercial and private entrances at all times during construction, unless full entrance closure is allowed as noted below.

4. Commercial and Private Entrances **(20' wide or less)** – excavation shall be completed in one calendar day. Immediately following excavation activities, Contractor shall provide Temporary Access. Concrete forming and pouring shall be completed in one calendar day. Concrete shall contain high early strength additives and must achieve a strength of 3,500 psi in two days.

5. Commercial Entrances **(greater than 20' wide)** – shall be constructed one half at a time. Concrete shall contain high early strength additives and must achieve a strength of 3,500 psi in two days.

6. **Temporary Access** –MoDOT specified Type 5 aggregate, at a minimum thickness of 6" compacted, shall be used for temporary access and shall be considered incidental to the contract. Contractor shall install and compact the Type 5 aggregate in a sufficient manner, and to the Engineer's satisfaction; to prevent vehicle bottoms scraping the roadway, driveway, and parking lots. No separate payment will be made for the placement, maintenance or removal of said access. If said access is not supplied as

set out above, the City will supply said access with its own forces, without notification to the Contractor, and will deduct such costs from the sums due the Contractor.

R. SPRINKLER SYSTEMS

1. It will be the Contractor's responsibility to repair or replace sprinkler systems that are damaged due to construction activities to the satisfaction of the Owner. This will include all sprinkler systems on City right-of-way and private property. The contractor will be required to make the necessary repairs within five (5) working days.

2. If said repairs are not completed as set out above, the Owner will make the necessary repairs, and will deduct the repair cost from the sums due the contractor.

S. DOWN SPOUTS AND SUMP PUMPS

1. It will be the Contractor's responsibility to repair or replace pipes that are part of a private down spout or sump pump system that are damaged due to construction activities to the satisfaction of the Owner. This will include all systems on City right-of-way and private property. The contractor will be required to make the necessary repairs within five (5) working days at no additional cost to the City or Property Owner.

2. Pipes that are within existing curb or sidewalk that are being replaced shall be placed back in the curb unless otherwise directed by the City Representative. The down spout or sump pump system shall operate as well or better than before it was disturbed.

3. If said repairs are not completed as set out above, the Owner will make the necessary repairs, and will deduct the repair cost from the sums due the contractor.

T. PORTABLE TOILET FACILITIES

1. The Contractor shall furnish and maintain an adequate number of portable restroom facilities for his employees for the duration of the project.

CONSTRUCTION REQUEST FOR INFORMATION

RFI #:	
PROJECT:	
SUBMITTED DATE:	
SUBMITTED BY:	
INFORMATION REQUESTED:	
ATTACHMENTS:	

RESPONSE DATE:	
RESPONSE FROM:	
RESPONSE:	
ATTACHMENTS:	

END OF CONSTRUCTION RFI

SECTION 1000 - COORDINATION AND SITE CONDITIONS

1. GENERAL

   A. Requirements for coordinating and sequencing the work under the Contract and requirements regarding existing site conditions.

2. SITE CONDITIONS

   A. Information on Site Conditions:

      1. General: Information obtained by the Owner regarding site conditions, topography and subsurface information obtained by the Engineer's investigation of surface and subsurface conditions, shall be considered part of the Contract Documents. Neither the Engineer nor the Owner assumes any responsibility for its accuracy or completeness or for the Contractor's interpretation of such information.

      2. Existing Elevations: Elevations are expected to vary ±0.1 feet from the elevations shown. The Contractor shall verify existing elevations prior to start of new work.

   B. Existing Utilities and Facilities:

      1. Location:

         a. Known utilities and facilities adjacent to or within the work area are shown on the Drawings. The locations shown are taken from existing records and the best information available from existing utility plans; however, it is expected that there may be some discrepancies and omissions in the locations and quantities shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Owner or the Engineer for their accuracy or completeness. Contractor's request for additional compensation or Contract time resulting from encountering utilities not shown will be considered incidental to the contract. Excessive delays that affect the "critical path" of project scheduling shall be considered for contract time extensions and additional compensation. This decision shall be made by the Owner.

         b. Contractor shall exercise reasonable care to verify locations of utilities and facilities shown on the drawings and to determine the presence of those not shown. Immediate and adjacent areas where excavations are to be made shall be thoroughly checked by visual examination for indications of underground facilities, and also checked with electronic metal and pipe detection equipment. Where there is reasonable cause to verify the presence or absence of an underground facility, make exploratory excavations prior to proceeding with major excavation in the area.

         c. Contractor shall call 1-800-344-7483 (Missouri One Call) and 314-340-4100 (MoDOT) for location of underground utilities prior to beginning any excavation work on this project.

2. Preconstruction Survey and Monitoring:

   a. After the Contract is awarded and before starting the work, the Contractor shall perform a preconstruction survey of the site. Make a thorough examination, providing color photographs, and a color video in a format approved by the Owner and Engineer of all existing buildings, structures and other improvements which might be damaged by the Contractor's operations. The examination shall be made jointly by representatives of the Contractor, the Owner and the Engineer. The scope of the examination and photographs shall include cracks in structures, settlement, leakage, and similar conditions. The Contractor shall be responsible for all documentation, including videocassettes, photos, etc.

   b. The Contractor shall establish vertical and horizontal survey control points from the initial base survey control provided by the Engineer on all structures and improvements located in the vicinity of the work prior to beginning work and shall periodically check the points for movements. The Contractor shall furnish the Engineer with copies of the survey notes for each survey and a copy of the layout of the survey control points.

   c. Records of all observations shall be prepared in triplicate by the Contractor. Two copies of each document and photograph and one copy of the video shall be provided to the Engineer.

   d. The above records and photographs are intended for use as evidence in ascertaining the extent of any damage, which may occur as a result of the Contractor's operations and are for the protection of the Contractor and the Owner. The records will provide a means of determining whether and to what extent damage may have occurred as a result of the Contractor's operations. The records will also be utilized to guide the restoration phase of this project.

3. Contractor's Responsibilities:

   a. Contractor shall call 1-800-344-7483 (Missouri One Call) and 314-340-4100 (MoDOT) for location of underground utilities prior to beginning any excavation work on this project.

   b. Where Contractor's operations could cause damage or inconvenience to railway, telegraph, telephone, television, power, oil, gas, water, sewer, or irrigation systems, the Contractor shall make arrangements necessary for the protection of these utilities and services. Replace existing utilities removed or damaged during construction, unless otherwise provided for in these Contract Documents.

   c. Notify utility offices that are affected by construction operations at least 72 hours in advance. Under no circumstances expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for the utilities.

   d. Contractor shall be solely and directly responsible to Owner and operator of such properties for damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of injuries or damage which may result from construction operations under this Contract.

e. Neither Owner nor its officers or agents shall be responsible to Contractor for damages as a result of Contractor's failure to protect utilities encountered in the work.

f. In event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental damage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration as promptly as possible and pay for repair. Prevent interruption of utility service unless granted by the utility owner.

g. In the event Contractor encounters water service lines that interfere with trenching, obtain prior approval of the water utility, cut the service, dig through, and restore service to previous conditions using equal materials.

C. Interfering Structures:

1. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has been made to show major structures on the drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed.

2. Protect existing structures from damage, whether or not they lie within limits of easements obtained by the Owner. Where existing fences, gates, barns, sheds, buildings, or other structure must be removed to properly carry out work, or are damaged during the work, restore them to original condition and to the satisfaction of property Owner.

3. Contractor may remove and replace in equal or better than original condition, to the Owner's satisfaction, small structures such as fences, and signposts that interfere with Contractor's operations, with the prior notification and approval of the Owner.

D. Connecting to Existing Facilities: Unless otherwise shown or specified, determine methods of connecting new work to existing facilities, and obtain Engineer's review and acceptance of proposed connections prior to initiation of work.

1. Determine location, elevation, nature, materials, dimensions, and configurations of existing facilities where necessary for connecting new work.

2. Inspect existing record drawings and shop drawings, conduct exploratory excavations and field inspections, and conduct similar activities as needed.

3. Shutdown of Owner's existing facility prior to connection, if necessary, shall be by Owner or as specified.

4. Prior to beginning connection work, the Contractor shall meet the notice requirements specified herein.

3. PROJECT MEETINGS

A. Preconstruction Conference: See Section 1200, PROGRESS SCHEDULES.

B. Progress Meetings: Engineer will schedule regular progress meetings to review work progress, schedules, and other matters needing discussion and resolution. See Section 1200, PROGRESS SCHEDULES for details on progress meetings.

C. Coordination Meetings: The Engineer will conduct weekly coordination meetings between the Contractor, Owner, and the Engineer for the purposes of discussing and resolving various project elements requiring interface or coordination with the Owner's treatment.

1. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.

D. Time of Work: No work shall be done between 7:00 p.m. and 7:00 a.m., or on Sundays or legal holidays, without prior approval of the Owner. However, maintenance or emergency work during these hours may be done without prior permission.

E. Overtime Notice: If Contractor for convenience should desire to carry on work at night or outside regular hours, submit written notice to the Engineer and allow ample time for satisfactory arrangements to be made for inspecting work in progress.

4. PAYMENT

A. General:

1. Payment for work in this section will be considered as incidental to the contract.

2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 1000

SECTION 1100 - SUBMITTALS

1. GENERAL

   A. Requirements and procedures necessary for scheduling, preparation, and submission of submittals.

   B. Individual specifications sections in these Contract Documents contain additional and special submittal requirements.

2. SUBMITTAL PROCEDURES

   A. Owner reserves the right to modify the procedures and requirements for submittals, as necessary to accomplish the specific purpose of each submittal. Direct inquires to Engineer regarding the procedure, purpose, or extent of any submittal.

   B. Review, acceptance, or approval of substitutions, schedules, shop drawings, lists of materials, and procedures submitted or requested by Contractor shall not add to the Contract amount, and additional costs, which may result therefrom, shall be solely the obligation of Contractor.

   C. Owner is not precluded, by virtue of review, acceptance, or approval, from obtaining a credit for construction savings resulting from allowed concessions in the work or materials therefore.

   D. Owner is not responsible to provide engineering or other services to protect Contractor from additional costs accruing from such approvals.

   E. The Contractor shall submit four (4) copies of all technical shop drawings unless otherwise indicated.

3. ADMINISTRATIVE SUBMITTALS

   A. Provide administrative submittals required by the Instructions to Bidders, General Conditions, Job Special Provisions, and as may be specifically required in other parts of the Contract Documents.

4. SCHEDULES

   A. General:

      1. Submit estimated progress schedule and preliminary schedule of submittals to Engineer.

      2. Revise and resubmit as specified, and identify all changes made from previous schedule submittal.

   B. Progress Schedule: See Section 1200, PROGRESS SCHEDULES for requirements.

C. Schedule of Submittals:

1. Submit Preliminary and Finalized Schedules of Submittals, in triplicate to the Engineer. Preliminary Schedule of Submittals shall be submitted within 10 days after the date of Notice to Proceed. The Finalized Schedule of Submittals shall be submitted no later than 10 days after the Contractor receives the Engineer's review comments on the Preliminary Schedule of Submittals.

2. Preliminary Schedule of Submittals: Indicate submittals required by specification section number with brief description, starting and completion dates for respective submittal preparation, and submittal review by Engineer.

3. Finalized Schedule of Submittals: Furnish sub network to the progress schedule indicating respective progress schedule activity, which sequentially follows the submittal activity.

5. SHOP DRAWINGS

A. General:

1. Shop drawings, as defined herein, consist of all drawings, diagrams, illustrations, schedules, and other data which are specifically prepared by or for the Contractor to illustrate some portion of the work; and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams, and other information prepared by a manufacturer and submitted by Contractor to illustrate material or equipment for distinct portions of the work. The Contractor shall submit, as applicable, the following for all prefabricated or manufactured structural, mechanical, electrical, plumbing, process systems, and equipment:

a. Shop drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.

b. Catalog information and cuts.

c. Wiring and control diagrams of systems and equipment.

d. Complete manufacturer's specifications, including materials description and paint system.

e. Suggested spare parts list with current price information.

f. List of special tools required for checking, testing, parts replacement, and maintenance (special tools are those which have been specifically designed or adapted for use on parts of the equipment, and which are not customarily and routinely carried by maintenance mechanics).

g. List of special tools furnished with the equipment.

h. List of materials and supplies furnished with the equipment.

i. Samples of finish colors for selection.

j. Special handling and lubrication instructions.

k. Requirements for storage and protection prior to installation.

l. Requirements for installation and recommended installation procedures.

m. List of all spare parts and tools that shall be provided to the Owner.

2. Submittal of incomplete or unchecked shop drawings will not be acceptable. Shop drawing submittals, which do not clearly show Contractor's review stamp or specific written indication of Contractor review will be returned to Contractor for resubmission.

3. Submittal of shop drawings not required under these Contract Documents and not shown on the schedule of submittals will be returned to Contractor unreviewed and unstamped by Engineer.

4. Shop drawing submittals processed by Engineer do not become Contract Documents and are not Change Orders; the purpose of shop drawing review is to establish a reporting procedure and is intended for Contractor's convenience in organizing the work and to permit Engineer to monitor Contractor's progress and understanding of the design.

5. Delays caused by the need for resubmittal shall not constitute basis for claim.

6. Each submittal will receive up to two reviews by the Engineer at no cost to the Contractor. If a given submittal fails to reach a completed status (reviewed and marked "No Exceptions Taken" or "Make Corrections Noted") on the second submittal, the Contractor shall have the costs associated with further reviews by the Engineer deducted from the contract amount. These costs will be computed based on the Engineer's actual direct labor costs, indirect labor costs, plus profit.

7. Sequentially number the transmittal forms; resubmittals to have original number with an alphabetic suffix.

8. Identify project, Contractor, specification section number, pertinent drawing sheet and detail number(s), products, units and assemblies, and the system or equipment identification or tag number as shown.

9. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with requirements of the Contract Documents.

10. Transmit submittals in accordance with finalized schedule of submittals, and deliver to:

Cochran
12963 Maurer Industrial Drive
Sunset Hills, Missouri 63127

11. Provide space for Engineer review stamp.

12. Revise and resubmit submittals as required; identify all changes made since previous submittal.

13. Submittals will be acted upon by Engineer and transmitted to Contractor not later than 10 working days after receipt by Engineer.

14. When shop drawings have been reviewed by Engineer, two copies will be returned to Contractor appropriately annotated. When required by the Engineer's review comments, correct and resubmit the shop drawings in the same manner and quantity as specified for the original submittal.

15. If major changes or corrections are necessary, shop drawings may be rejected and one set will be returned to Contractor with general direction on the requirements of a reviewable submittal.

B. Material and Equipment Colors: Engineer will provide a schedule of selected colors within 30 days after approval of submittals and after receiving samples of the manufacturers' standard colors for those items requiring Owner's selection.

6. SAMPLES AND TEST SPECIMENS

A. Where required in the specifications, and as determined necessary by Engineer, submit test specimens or samples of materials, appliances, and fittings to be used or offered for use in connection with the work. Include information as to their sources, prepay cartage charges, and submit such quantities and sizes for proper examination and tests to establish the quality or equality thereof, as applicable.

B. Submit samples and test specimens in ample time to enable Engineer to make tests or examinations necessary, without delay to the work.

C. Submit additional samples required by Engineer to ensure equality with the original approved sample and/or for determination of specification compliance.

D. Tests required by the specifications to be performed by an independent laboratory shall be made by a laboratory licensed or certified in accordance with state statutes.

1. Submit certified test results of specified tests in duplicate to Engineer.

E. Samples and laboratory services shall be at the expense of Contractor and included in the prices bid for the associated work.

F. Approved sample items (fixtures, hardware, etc.) may be incorporated into the work upon approval and when no longer needed by Engineer for reference.

7. QUALITY CONTROL SUBMITTALS

A. Manufacturers' Certificate(s): Where Manufacturers' Certificate(s) are required in the specifications, the manufacturer shall provide certification stating the following:

1. The product or system has been installed in accordance with the manufacturer's recommendations.

2. The product or system has been inspected by a manufacturer's authorized representative.

3. Applicable safety equipment has been properly installed.

4. Proper electrical and mechanical connections have been made.

5. Proper adjustments have been made and the product or system is ready for functional testing and operation.

B. Certification and Compliance:

1. Where specified, furnish certification of compliance for products specified to a recognized standard or code prior to the use of such products in the work.

a. Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by a certification of compliance.

b. Certifications shall be signed by the manufacturer of the product; state that the components involved comply in all respects with the requirements of the specifications.

c. Furnish certification of compliance with each lot delivered to the jobsite and clearly identify the lot so certified.

2. Products used on the basis of a certification of compliance may be sampled and tested at any time. The fact that a product is used on the basis of a certification of compliance shall not relieve Contractor of responsibility for incorporating products in the work, which conforms to requirements of the Contract Documents. Products not conforming to such requirements will be subject to rejection whether in-place or not.

3. Engineer reserves the right to refuse permission for use of products on the basis of a certification of compliance.

C. Functional Test Certification: Where functional testing is specified for certain equipment, Contractor (as applicable to the equipment furnished) shall state in writing that:

1. Necessary electrical and piping systems have been successfully tested.

2. In completing the recommended spare parts list portion of the Equipment Data Form, the data provided in the "Part No." and "Description" columns shall be consistent with the terminology used in the equipment manufacturer's Bill of Material/Parts List provided with the O & M Manuals. Spare parts provided by this Contract must be

identified by placing two asterisks after the part number. The term "Unit" is the unit of measure for ordering the part, e.g. each, lot of 3, box of 100, etc. The term "Quantity" is the number of units recommended. The term "Unit Cost" is the purchase price of a unit at the time the Equipment Data Form is completed.

8. CONTRACT CLOSEOUT SUBMITTALS

   A. Record Drawings:

      1. Submit complete sets of reproducible final shop drawings before, or at the time of, delivery of equipment to the site.

      2. Submit complete set of "As-Built" drawings recording all changes made during construction. "As-Built" drawings shall be reproducible and in good condition.

   B. O & M Manuals:

      1. Submit final revised O & M Manual incorporating field testing results and additional instructions deemed necessary by Engineer after testing and startup.

      2. Revise and resubmit manuals, or portions of manuals, found to be missing or incomplete from Engineer's punch list.

9. CONSTRUCTION PHOTOGRAPHS

   A. The Owner and/or his authorized agents will take construction progress photographs as the work progresses. The Contractor will be advised of the Owner's schedule and may accompany the Owner's photographer. One copy of the construction progress photographs will be provided to the Contractor upon request. The Owner/Engineer reserves all rights to take other photographs and videotapes of the construction work.

10. PAYMENT

   A. General:

      1. Payment for work in this section will be considered as incidental to the contract.

      2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 1100

SECTION 1200 - PROGRESS SCHEDULES

1. GENERAL

   A. Detailed scheduling requirements and procedures including preparation and overall schedule.

   B. Preconstruction conference requirements.

   C. Monthly progress report requirements.

2. SUBMITTALS

   A. Submit the following items as specified in this section:

      1. Overall schedule
      2. Network diagrams
      3. Progress reports
      4. Cash flow summary

3. PROGRESS OF THE WORK

   A. General:

      1. Execute work with such progress as necessary to prevent delay to the overall completion of the project.

      2. Execute work at such times and on such parts of the project, and with such forces, materials, and equipment, to assure completion in the time established by the Contract.

4. PRECONSTRUCTION CONFERENCE

   A. A preconstruction conference shall be held as soon as possible after the award of the Contract but before the Notice to Proceed. Contractor shall meet with Owner and Engineer for discussion of scheduling requirements, procedures for handling shop drawings and other submittals, processing application for payment, and establishing a working understanding among the parties. The conference shall be held at the jobsite or at a location selected by the Owner. The conference shall be attended by:

      1. Contractor's office representative.

      2. Contractor's general superintendent.

      3. Subcontractor's representative whom Contractor may desire or Engineer may request to attend.

      4. Engineer's representative.

5. Owner's representative.

6. Representative of utility companies.

5. OVERALL SCHEDULE

A. General:

1. Contractor shall prepare and submit, within 10 days after the award of Contract, an Overall Schedule comprised of all construction operations in connection with the Contract.

2. Overall Schedule shall indicate the sequence of work, by phase and by station, and the time of starting and completion of each activity. Activities shall include, but not be limited to, the following items as they pertain to the Contract.

a. Each subcontractor's items of work.

b. Shop drawing submittal from Contractor, checking and coordination, submittal to the Engineer, review, and return to Contractor.

c. Material and equipment order, manufacture, delivery, installation, and checkout.

d. Move in and site preparation.

e. Concrete placement sequence.

f. Backfilling, grading, seeding, paving, etc.

g. Electrical activities.

h. Plumbing and piping activities.

i. Final cleaning.

j. Allowable for inclement weather.

3. The Overall Schedule shall show all stipulated milestone dates, constraints, substantial completion and final completion dates.

B. Network Diagram:

1. The Contractor shall submit a time-scaled network diagram as part of the Overall Schedule. Draw or print the network diagram on reproducible paper, not larger than 24 inches by 36 inches, and show the sequence and interdependence of activities required for complete performance of all items of work.

2. Produce a legible and accurate diagram. Group activities related to a specific physical area of the project for ease of understanding and simplification. Label each activity with a complete description as well as estimated duration in working days.

3. Activity durations shall be not less than 1 day or more than 30 working days, unless otherwise approved by the Engineer, except for Engineer's submittal review and material and equipment fabrication/delivery.

4. Indicate critical path of activities on the network diagram.

5. Contractor(s) shall not be permitted to sequester shared float through such strategies as extending duration estimates to consume available float time, extensive crew/resource sequencing, etc.

C. Schedule Reports:

1. Prepare schedule listings of the information in the network diagram in tabular format, sorted according to:

   a. Early-start, within responsibility.

   b. Early-start.

   c. Activity number sequence.

   d. Activity number sequence with predecessor and successor activity.

2. Schedule listings shall show activity numbers, description, responsibility, total duration in workdays, percent complete, early-start date, late-start date, early-finish date, and total float for each activity in the network diagram.

3. Overall Schedule and subsequent revisions shall reflect actual progress of the project to within 5 working days prior to submittal. The Contractor shall sign and submit three copies of the initial Overall Schedule and each revision.

4. If initial submittal or a subsequent revision does not meet the requirements specified, Contractor shall revise the Overall Schedule and resubmit until it is acceptable to the Engineer. Failure to submit and adequately update the Overall Schedule, including network diagram and schedule reports, will be considered cause for withholding partial payments otherwise due under the Contract.

D. Progress Reports:

1. Once each month on a date mutually agreed upon by the Contractor, Owner and Engineer, a jobsite progress meeting will be held at which time the schedule will be reviewed. Immediately prior to the meeting, Contractor shall obtain the necessary information to update the Overall Schedule to reflect progress to date. Furnish sufficient copies of the updated schedule at the meeting for review.

2. In updating the schedule, progress will be reviewed:

   a. To identify those activities started and completed during the previous period.

   b. For remaining duration, from the date of update, required to complete each activity started but not completed.

   c. For review of remaining durations for selected activities not yet started.

d. For addition of Change Orders and proposed sequencing changes to the network diagram and schedule listings.

3. At least once each month, and utilizing data accumulated during the previous joint Owner-Engineer-Contractor reviews, the Contractor shall revise the network diagram and the Overall Schedule and generate updated schedule reports. Also, revise and submit the network diagram and schedule reports when one of the following conditions occur:

   a. Delay in completion of a work item or sequence of work items causes an estimated extension of project completion by 15 or more working days.

   b. Delays in submittals, deliveries, or work stoppages are encountered which require replanning rescheduling of work.

   c. Schedule no longer represents actual prosecution and progress of work.

4. Whenever revised scheduling documents are submitted, they shall be accompanied by a written Narrative Report which shall:

   a. Describe amount of progress since the last revision in terms of activities started, continuing, and completed.

   b. Describe problem areas, current and anticipated delay factors, and their estimated impact on performance of other activities and completion dates.

   c. Explain corrective action taken or proposed.

E. Correcting Delays:

1. If at any time during the project the Contractor fails to complete an activity by its latest scheduled completion date, which late completion will impact the end date of the work part of the Contract completion date, submit within 7 calendar days plans to reorganize the work force to return to the current schedule.

2. The Owner may require Contractor to add construction forces, as well as increase working hours, if operations fall behind schedule at any time.

3. Addition of equipment or construction forces, increasing working hours, or other method, manner, or procedure to return to the contractually required completion date will not be justification for Contract modification.

4. Contractor shall plan, schedule, and coordinate construction operations and activities in a manner that will facilitate progress of work.

6. CASH FLOW

   A. Contractor shall submit a cash flow summary with the initial Overall Schedule submittal and each monthly update. Cash flow summary shall be based on the submitted Overall Schedule and equal in total the Contractor's bid plus approved Contract modifications. Include expected payment requests for each month, as well as cumulative payment requests to date after deducting retainage. Failure to submit and adequately update an acceptable cash flow summary will be considered cause for withholding partial payments otherwise due under the Contract.

7. PAYMENT

   A. General:

      1. Payment for work in this Section will be considered incidental to the contract.

      2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 1200

SECTION 1300 - PRODUCT SHIPMENT, HANDLING, STORAGE & PROTECTION

1. GENERAL

   A. Requirements and procedures for work necessary for shipment handling, storage, and protection of material and equipment products.

2. SUBMITTALS

   A. Contractor shall submit the following:

      1. Assembly instructions for parts shipped unassembled.

      2. Manufacturer's instructions for unloading, handling, storage, and protection prior to installation, with each shipment of each product type.

      3. Copy of manufacturer's notice of shipment for products critical to project schedule.

      4. Statements of new products delivered each week.

      5. Documentation of products in storage, submitted with each progress payment request.

3. PREPARATION FOR SHIPMENT

   A. When practical, products shall be factory assembled.

      1. Furnish assembly instructions for parts and assemblies that are shipped unassembled.

      2. Mark or tag the separate parts and assemblies for field assembly.

      3. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.

   B. Package or crate products to provide protection from damage during shipping, handling, and storage.

      1. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of project and Contractor, equipment number, and approximate weight.

   C. Mark spare parts and special tools to identify the associated products by name, equipment, and part number. Package parts for protection against damage from the elements during shipping, handling, and storage. Ship in boxes or containers marked to indicate the contents and as stated above. Deliver spare parts and special tools before the associated equipment is scheduled for the initial test run.

   D. Where specified for specific product, factory test results shall be reviewed and accepted before such product is shipped.

4. RECEIVING, INSPECTION, AND UNLOADING

   A. Contractor shall record the receipt of products at the jobsite.

   B. Upon receipt of products at the jobsite, Contractor shall inspect for completeness and evidence of damage during shipment.

      1. Owner or Engineer and manufacturer's representative may be present for inspection.

      2. Should there appear to be damage, notify the Engineer immediately and inform the manufacturers and the transportation company.

      3. Expedite replacement of damaged, incomplete, or lost items.

   C. After completion of inspection, unload products in accordance with manufacturer's instructions for unloading, or as specified. Do not unload damaged or incomplete products to be returned to manufacturer for replacement, except as necessary to expedite return shipment.

5. HANDLING, STORAGE, AND MAINTENANCE

   A. Handle products in accordance with the manufacturer's written recommendations, and in a manner to prevent damage.

   B. Store products prior to installation as recommended by the manufacturer.

      1. Store products such as pipe, fittings and reinforcing steel off the ground in approved storage yards.

      2. Store items subject to damage by the elements, vandalism, or theft in secure buildings.

      3. Provide environmentally controlled storage facilities for items requiring environmental control for protection.

   C. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.

6. PAYMENT

   A. General:

      1. Payment for work in this section will be considered as incidental to the contract.

      2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 1300

SECTION 1400 - CONTRACT CLOSEOUT

1. GENERAL

   A. Procedures to be followed in closing out the Contract.

2. FINAL SUBMITTALS

   A. No Contract will be finalized until all of the following have been submitted as required in Section 1100, SUBMITTALS:

      1. Prevailing Wage Affidavits from Prime Contractor and all Subcontractors.
      2. Affidavit regarding settlement of claims from Prime Contractor and all Subcontractors.
      3. Release from Bonding Companies
      4. Final shop drawings.
      5. Record drawings.
      6. Interface information.
      7. Operation and Maintenance Manuals.
      8. Equipment maintenance summaries.
      9. Manufacturer's certification of proper installation.
      10. Material certification for each item provided stating that it meets the requirements of the Specifications.
      11. Sewer "as-builts" as specified by the Metropolitan St. Louis Sewer District (if required).

   B. No Contract will be finalized until all guarantees, bonds, certifications, licenses, and affidavits required for work or equipment as specified are satisfactorily filed with the Engineer and Owner.

3. RELEASE OF LIENS OR CLAIMS

   A. No Contract will be finalized until satisfactory evidence of release of liens has been submitted to Owner as required by the General Conditions.

4. PRODUCTS

   (Not Used)

5. EXECUTION

   A. FINAL CLEANING. At completion of work and immediately prior to final inspection, clean entire project according to the following provisions:

      1. Clean, sweep, wash, and polish work and equipment provided under the Contract, including finishes. Leave the structures and site in a complete and finished condition to the satisfaction of the Engineer.

2. Should Contractor not remove rubbish or debris or not clean the facilities and site as specified above, the Owner reserves the right to have final cleaning done at the sole expense of the Contractor.

B. The Contractor shall:

1. Employ experienced workers or professional cleaners for final cleaning.

2. Conduct final inspection of exposed interior and exterior surfaces and of concealed spaces.

3. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed interior and exterior finished surfaces; polish surfaces designed to shine finish.

4. Repair, patch, and touch up marred surfaces to specified finish, and match adjacent surfaces.

5. Broom clean paved surfaces; rake clean other surfaces.

6. Remove from the Owner's property temporary structures and materials, equipment, and appurtenances not required as part of, or appurtenant to, the completed work.

7. Leave watercourses, gutters, and ditches open and in condition satisfactory to Engineer.

6. FINAL INSPECTION

A. After final cleaning and upon written notice from Contractor that the work is completed, Engineer will make preliminary inspection with the Owner and Contractor present. Upon completion of preliminary inspection, Engineer will notify Contractor in writing of particulars in which the completed work is defective or incomplete.

B. Upon receiving written notice from Engineer, Contractor shall immediately undertake work required to remedy defects and complete the work to the satisfaction of Engineer.

C. After the items as listed in Engineer's written notice are corrected or completed, inform Engineer in writing that required work has been completed. Upon receipt of this notice, Engineer, in the presence of Owner and Contractor, will make final inspection of the project.

7. PAYMENT

A. General:

1. Payment for work in this section will be considered as incidental to the contract.

2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 1400

SECTION 1500 – MOBILIZATION AND TRAFFIC CONTROL

1. MOBILIZATION

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of all offices, buildings, and other facilities necessary for work on the project except as provided in the contract as separate pay items; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.

A. GENERAL

1. QUALITY ASSURANCE. The Engineer shall have the right to reject construction tools, equipment, materials, and supplies that are, in their opinion, unsafe, improper, or inadequate. The Contractor shall bring rejected tools, equipment, materials, and supplies to acceptable conditions or remove them from the project site.

2. DELIVERY. Delivery to the project site of construction tools, equipment, materials, and supplies shall be accomplished in conformance with local governing regulations.

B. EXECUTION

Provide personnel, construction tools, equipment, materials, and supplies that will facilitate the timely execution of the work. Upon completion of the work, remove construction tools, apparatus, equipment, unused materials and supplies, plants, and personnel from the project site.

2. TRAFFIC CONTROL

A. Traffic control shall consist of furnishing, installing, relocating, maintaining and removing, temporary or permanent traffic control devices in accordance with the contract and as directed by the Engineer. Traffic control shall be the responsibility of the Contractor and shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).

B. Safety Requirements.

1. All workers within highway right of way who are exposed to traffic or construction equipment shall wear high-visibility safety apparel meeting Class 2 or Class 3 requirements of ANSI/ISEA 107-2004 publication entitled, "American National Standard for High-Visibility Safety Apparel and Headwear".

2. All traffic control devices shall be in accordance with the MUTCD and any applicable safety and design codes.

3. The Contractor shall: (a) Designate a trained person at the project level who has the primary responsibility, with sufficient authority, for implementing the

traffic management plan and other safety and mobility aspects of the project. The name of that person and a 24-hour contact number for that person shall be provided to the Engineer at the pre-construction meeting. (b) Ensure all Contractor personnel are trained in traffic control to a level commensurate with their responsibilities. (c) Advise the Engineer, as required, at least two working days before any work requiring a lane closure begins and 14 calendar days prior to the imposition of height, width and weight restrictions. (d) Perform quality control of work zones to promote consistency and ensure compliance with contract documents, policies and guidelines.

C. Construction Requirements.

1. Performance and operational aspects of the devices shall be in accordance with the latest editions of the MUTCD and the Missouri Quality Standards for Temporary Traffic Control Devices.

2. All traffic control devices shall be removed as soon as practical when the devices are no longer needed. When work is suspended for short periods of time, traffic control devices that are no longer appropriate shall be turned away from traffic, removed or covered. All temporary traffic control devices shall be removed after the completion of construction and shall remain the property of the Contractor unless specified otherwise. All permanent traffic control devices that are in conflict with temporary traffic control devices shall be covered or removed as shown on the plans or as directed by the Engineer. Upon completion of the work, all permanent traffic control devices to remain in place shall be restored to original condition.

3. All sign covers shall meet the requirements of the MoDOT Quality Standards for Temporary Traffic Control Devices.

4. All permanent traffic control devices relocated on a temporary basis shall be moved in the timeframe designated by the Engineer, and shall remain visible to the traveling public during all stages of construction. The Contractor shall place temporarily relocated permanent traffic control devices in the final location when construction is complete. Damaged devices shall be replaced by the Contractor at the Contractor's expense.

5. With the Engineer's approval, the Contractor may add to the traffic control plan any temporary traffic control devices or services the Contractor considers necessary to adequately protect the public and the work.

6. All changes to the traffic control plan resulting from Contractor staging revisions, including proposed total road closures for the Contractor's convenience, shall be submitted in writing to the Engineer for review and acceptance prior to implementation.

7. If the Engineer determines the need for additional traffic control devices not included in the traffic control plan, the Contractor will be notified in writing to provide the additional devices at no cost to the project.

8. The Contractor shall monitor traffic flow through the project and verify that all traffic control devices are in place and functioning properly during both daytime and nighttime conditions, as applicable. If the Contractor determines that a deficiency in any traffic control device exists, the Contractor shall take corrective action. No payment will be made for the corrective action.

9. As soon as possible after observing a traffic control deficiency, the Engineer will report the deficiency to the Contractor, either verbally or in writing. After receiving notification, if the Contractor does not make corrections within 24 hours, suspension of the work may occur. Regardless of the severity of the deficiency, corrections shall be made as soon as possible to maintain a quality work zone.

10. The Contractor shall provide written notice to the Engineer of any pedestrian or vehicular accident when physical evidence or other information suggests an accident has occurred in the work zone. The Contractor shall obtain and provide to the Engineer copies of law enforcement accident reports for any accidents in the work zone.

D. Lighting Requirements.

1. Work zone lighting shall be provided between dusk and dawn. Lighting systems shall be positioned such that the lighting systems do not cause glare or hot spots, i.e. concentrated areas of high lighting intensity when compared to the average, for motorists, spillover to adjacent properties or become safety concerns.

2. Work area lighting shall be provided in areas where construction equipment and labor are active only.

3. Flashing Arrow Panel. The Contractor shall deploy, operate and maintain flashing arrow panels as specified on the plans for the duration of the project, in accordance with the manufacturer's recommendations, at the Contractor's expense. A minimum vertical clearance of 7 feet (2.1 m) shall be maintained from the edge of pavement to the bottom of the flashing arrow panel.

4. Changeable Message Signs. The Contractor shall place the changeable message sign (CMS) at the location shown on the plans or as directed by the Engineer.

3. TEMPORARY TRAFFIC CONTROL DEVICES

A. Scope. This specification covers material to be used for temporary traffic control devices.

B. General Requirements. All temporary traffic control devices shall be manufactured as shown on the plans and as specified, in accordance with MUTCD requirements and shall be NCHRP 350 compliant. All temporary traffic control devices shall exhibit good workmanship and shall be free of objectionable marks or defects that affect

appearance or serviceability.

C. Channelizers and Tubular Markers. All channelizers and tubular markers shall be manufactured from a non-metallic material, pigmented and molded of a Highway Orange color throughout and stabilized against fading by ultraviolet or other light rays by the incorporation of adequate inhibitors. Drum-like channelizers shall be closed-top. Trim-line channelizers will be acceptable for use on the project.

D. Signs.

1. Rigid Signs.

(a) Sign Substrate. All signs shall be fabricated of substrate designed to provide satisfactory structural rigidity.

(b) Sign Sheeting. All signs shall have a retroreflectorized background. Sheeting shall be applied to the sign substrate in accordance with the manufacturer's recommendations and the surface shall be free of air bubbles, wrinkles or other blemishes as determined by the Engineer.

2. Roll-up Signs.

(a) Sign Substrate. Sign and overlay blanks shall consist of fluorescent orange microprismatic retroreflective sheeting sealed to a heavy-duty coated fabric or vinyl material.

4. MEASUREMENT AND PAYMENT

A. Mobilization: Partial payments will be allowed on the payment estimates as follows:

1. When 5 percent or more of the original contract amount is earned, 25 percent.

2. When 10 percent or more of the original contract amount is earned, an additional 25 percent.

3. When 25 percent or more of the original contract amount is earned, an additional 25 percent.

4. When 50 percent or more of the original contract amount is earned, the final payment.

5. Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the contract.

B. Channelizers will not be measured for payment and will be paid for at the contract quantity. Any additional channelizers necessary to meet the requirements of the MUTCD or placed at the direction of the engineer will be considered incidental to the project and no additional payment will be made. The price shall include all labor, tools, and materials necessary to install and maintain channelizers for the duration of the project.

C. Road Work Ahead Signs (W20-1) shall be measured and paid for per each sign installed. The price shall include all labor, tools, and materials necessary to install and maintain signs for the duration of the project.

D. Shoulder Work Ahead Signs (W21-5) shall be measured and paid for per each sign installed. The price shall include all labor, tools, and materials necessary to install and maintain signs for the duration of the project.

E. End Road Work Signs (G20-2) shall be measured and paid for per each sign installed. The price shall include all labor, tools, and materials necessary to install and maintain signs for the duration of the project.

F. Any traffic control items, other than those listed in the bid form, necessary to meet the standards of the MUTCD shall be considered incidental to the contract. No direct payment shall be made for additional traffic control items.

G. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

ITEM: 1500.1 Mobilization – Lump Sum

ITEM: 1500.2 Channelizers – Each

ITEM: 1500.3 "Road Work Ahead" (W20-1) – Each

ITEM: 1500.4 "End Road Work" (G20-2) – Each

END SECTION 1500

SECTION 1600 - CHANGEABLE MESSAGE SIGN

1. DESCRIPTION

All solar powered changeable message signs, hereinafter referred to as a CMS, shall be designed and manufactured in accordance with this specification.

2. MATERIAL

There shall be four Changeable Message Signs used for these Projects, two for Phase 1 and two for Phase 2. The CMS for Phase 1 shall be Contractor rented or owned. The CMS for Phase 2 shall be City retained at the end of the project and shall be purchased new for this specific project by the Contractor. Refurbished CMS or CMS used on other projects will not be accepted for this Phase.

A. Each CMS shall consist of an all LED (light emitting diode) matrix message board, solar/battery power supply and a computer-operated interface, all mounted on a heavy-duty towable trailer.

B. Each CMS shall have the following minimum characteristics:

1. The overall sign dimensions shall not be less than 72 inches (1800 mm) high x 126 inches (3150 mm) wide. Each CMS will consist of three lines containing eight individually changeable characters per line. Each character is 18 inches (450 mm) high. The CMS shall be legible up to a distance of 650 feet (200 m) for both day and night operations.

2. Each CMS unit shall have a standard trailer lighting system and be able to withstand a 65 mph (105 km/h) maximum sustained highway speed.

3. All exterior surfaces except the sign face shall be cleaned, primed and finished with two coats of Highway Safety Orange and the sign face itself shall be cleaned and finished with one coat of corrosion inhibiting primer and two coats of flat black enamel baked to surface.

4. When fully raised in the display position, the top of the CMS shall be at least a height of 13 feet (3900 mm) ±6 inches (150 mm) and shall be able to rotate a complete 360 degrees atop the lift mechanism. It also must be able to be locked into various viewing angles as determined best for the motorists by the CMS operator.

5. All LED displays and control circuitry shall be operational from -20 F (6 C) to 120 F (50 C). The LED's shall have a rated life of 100,000 hours. The LED's shall be ITE amber in color on a flat black background.

6. The CMS shall have a modem and cellular phone capable of receiving a message over standard phone lines from a remote location and forwarding the message to the CMS controller to change the displayed message. Modems shall have a minimum baud rate of 14,400 bps. In addition to the modem, the CMS shall have the necessary hardware on board that will allow the message to be changed from the CMS location without connection via phone line. A connecting cable a minimum of 5 feet (1.5 meters) long shall be provided to connect the sign controller to a notebook

computer.

7. The power supply shall use a battery bank sufficient in capacity to operate a full display of characters for 20 continuous days with no sun. Solar panels shall charge the batteries at a rate that will operate the CMS one day for each 2 1/2 hours of sunlight. The CMS shall have the capability to charge the battery bank from a 120 VAC power source. The CMS shall have power control circuitry to manage solar charging. The CMS shall also be equipped to accept power from a 240/120 VAC utility power source. All terminals and connections shall be clearly labeled.

8. For Phase 2, the supplier shall provide the Owner with the required software and licenses necessary to change the message from a remote location. This software shall be compatible with the Windows operating systems and be able to issue Hayes or Hayes compatible modem commands. The supplier shall provide technical assistance with the installation and operation of software.

9. For Phase 2, a factory trained service representative shall be available at the delivery location to provide technical assistance with no additional payment made for travel expenses. This representative shall reside within the state of Missouri or in the St. Louis or Kansas City metro areas.

3. CHANGEABLE MESSAGE SIGNS THAT MEET THIS CRITERIA INCLUDE:

A. ADDCO DH1000 ALS manufactured by ADDCO Manufacturing Co. Inc.
69 Empire Drive
St. Paul, Minnesota 55103
Phone (612) 224-8800

B. CMS-T331 manufactured by American Signal Company
2755 Bankers Industrial Park
Atlanta, Georgia 30360
Phone (770) 448-6650

C. Solar Message Center manufactured by Precision Solar Controls Inc.
2915 National Court
Garland, Texas 75041
Phone (214) 278-0553

D. Sunray Solar 380 manufactured by Display Solutions Inc.
6301 Best Friend Road
Norcross, Georgia 30071
Phone (404) 662-5400

E. WANCO WTLMB-S-LL manufactured by WANCO Inc.
5870 Tennyson Street
Arvada, Colorado 80003
Phone (303) 427-5700

F. VER-MAC 1200 manufactured by VER-MAC, Inc.,
2520 Watt Street
Ste - Foy, Qc, Canada G1P3T4.

Phone (888) 488-7446

4. CONSTRUCTION METHOD

A. Installation. The contractor shall place the CMS 6 feet (2 meters) off of the right edge of shoulder at the location shown on the plans or as directed by the engineer. The CMS shall be placed so that the right side of the unit is advanced approximately 3 degrees ahead with the direction of traffic. CMS shall not be located in medians. CMS shall be delineated with a minimum of five non-metallic drum-like channelizers. Installation, including location and placement, shall be approved by the engineer. Cost for channelizers shall be included in the unit bid price for Changeable Message Sign.

B. The contractor shall maintain and repair the CMS as required by the manufacturer and the engineer for the duration of this project. The manufacturer recommended maintenance schedule will be on file at the Project Office. Any hydraulic fluid or brake fluid needed to maintain the CMS shall be furnished by the contractor. All lenses shall be kept clean and free of dust.

C. The contractor shall program the CMS as directed by the engineer.

D. When not in use, the CMS shall be stored no closer than 30 feet (10 meters) to the edge of pavement carrying traffic, unless it is in a properly protected area, an off-site storage area or as otherwise directed by the engineer.

E. For Phase 2, when no longer needed on the project, the CMS will become the property of the Owner. The CMS shall be in good working condition to the satisfaction of the engineer prior to delivery to the Owner. The contractor shall furnish manufacturer's "statement of origin" of the CMS, and the CMS shall be delivered to the Owner's maintenance building.

5. MEASUREMENT

A. The quantity measured shall be the number of accepted changeable message signs used for the duration of the project.

6. PAYMENT

A. All costs associated with the purchase, rental, installation and maintenance shall be considered completely covered by the unit price bid for Changeable Message Sign. The installation cost shall include cellular phone hookup and monthly usage fee for the duration of the project.

ITEM: 1600.1 Changeable Message Sign (Contractor Retained) – Each

ITEM: 1600.2 Changeable Message Sign (Owner Retained) – Each

END OF SECTION 1600

SECTION 2000 – CLEARING, GRUBBING AND STRIPPING

1. GENERAL

   A. This section covers the work necessary to removal all interfering or objectionable material from the designated areas of work as shown on the drawings or designated in the specifications.

   B. This work shall also include the preservation from injury or defacement of all vegetation and existing objects designated to remain, as shown or as specified herein.

   C. Review with the Engineer the location, limits, and methods to be used prior to commencing the work under this section.

   D. Provide all equipment and materials, suitable and in adequate quantity, required to accomplish the work as specified herein.

2. DEFINITIONS

   A. Clearing. Clearing shall consist of cutting, removing, and disposing of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth, and shall be performed in such a manner as to remove all evidence of their presence from the surface and shall be inclusive of sticks and branches greater than 2 inches in diameter or thickness.

   B. Grubbing. Grubbing shall consist of the removal and disposal of wood or root matter up to 18" below the ground surface remaining after clearing and shall include stumps, trunks, roots or root systems greater than 2 inches in diameter or thickness.

   C. Stripping shall include the removal and disposal of all organic sod, topsoil, grass and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped. The exact depth of stripping will be adjusted to minimize the amount of topsoil in the strippings.

   D. Disposal. The contractor shall dispose of all trees, stumps, brush, roots and all other objectionable matter removed in the clearing, grubbing and stripping process. Open burning will not be allowed.

3. MEASUREMENT

   A. Clearing, Grubbing and Stripping. This work will not be measured for payment, but will be considered incidental to the contract. The work will include all clearing, grubbing and stripping necessary to construct the project, regardless of whether the items are shown on the plans or encountered during construction.

4. PAYMENT

   A. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Owner, or its Representative, will be considered incidental to the work and no direct payment for the work will be made. Any work as described in this section that is performed outside of the limits shown in the drawings is considered incidental and must be approved by the Owner, or its Representative prior to starting the work.

END SECTION 2000

SECTION 2100 - PRESERVING AND PROTECTING EXISTING TREES

1. GENERAL

   A. All existing trees that are noted to remain are to be preserved and protected by the Contractor during the entire duration of the grading and construction of that portion of the project.

2. PRESERVING MEASURE AND PRECAUTIONS

   A. No construction vehicles or equipment shall be parked within the drip line area of any tree that is to remain.

   B. During excavation and grading operations, equipment shall travel over the tree lawn area within the drip line of any tree as little as possible since this causes undue compaction over the roots of the tree.

   C. Extreme care should be taken in grading around the trees and in cutting the roots of any trees. The plans have been prepared so that there will be minimal disturbance to the ground immediately around and under the trees. Stop work and notify the Engineer if intensive roots need to be cut or if any roots over 1.5" in diameter are encountered.

   D. The Owner reserves the right to stop the work at any time he feels correct measures are not being employed to protect the trees. The Contractor will be notified to resume work after the necessary revisions are made.

3. PENALTY FOR DAMAGE TO TREES

   A. Trees shall be protected at all times. A $500 back charge, per incident, shall be assessed for damaging trees. Repair damage to tree in accordance with Owner instructions.

   B. If the damage to the tree is beyond repair and it is determined by the Engineer that the tree will die, the Contractor shall remove the remaining tree and stump at no expense to the Owner, replace the tree with a new 3 inch caliper tree of the same species to the Owner's satisfaction and shall pay a penalty to the Owner of $100 for every inch over 3 inches of the damaged tree's caliper. For example: if the Contractor damages a 20" tree and it is determined that the damage is irreversible and will lead to the death of the tree, the Contractor will pay the Owner the following in addition to replacing the existing tree with a new 3 inch tree of the same or approved species:

	$500	Back Charge
20" – 3" = 17" x $100 or	+$1,700	Penalty
	$2,200	Total amount due to the Owner

   C. Contractor shall submit an incident report to the Engineer. Payment shall be deducted from sums due the Contractor.

4. MEASUREMENT

No measurement will be made for this item as it is considered incidental to the contract.

5. PAYMENT

A. General:

1. Payment for work in this section will be considered as incidental to the contract.

2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 2100

SECTION 2200 – REMOVAL OF IMPROVEMENTS AND PAVEMENT MILLING

1. DESCRIPTION

A. This section covers the preparation of existing pavement surfaces for overlay, removal of existing pavement, and other miscellaneous items. This work shall consist of the removal and disposal of all existing improvements from the right of way and within the limits of any construction area outside the right of way, except improvements designated or permitted to remain in place or to be removed under other items of work. Removal of improvements shall include, but not be limited to, removing (whether designated for removal or for the preparation for new improvements), or movement if appropriate, of all drainage structures, pavement, surfacing and base courses, curb, gutter, sidewalks, house walks, steps, retaining walls, foundation walls, columns, footings, concrete floors, cisterns, catch basins, uncontaminated storage tanks, manholes, drainage and sewer pipes, water and gas main pipes, signs, mailboxes, planters, fences, scattered or piled bricks, stones, broken masonry, rubbish, debris, outdoor advertising signs, etc., from existing improvements. The plans may not show a complete list of all items to be removed. There may be an undetermined number of abandoned utilities, basement or foundation walls, columns, footings or other improvements encountered. The contractor shall determine the extent of the work to be performed under this item. No additional payment will be made for items not shown on the plans that require removal.

2. GENERAL

A. Disposal of Material: All improvements not designated to remain shall be removed or disposed of by the Contractor as required. The work may involve the generation of excess material, which may be solid waste under the definitions of the MDNR Solid Waste Management Program. The Contractor shall dispose of solid waste in accordance with the Missouri Solid Waste Management Law and implementing regulations, 10 CSR 80.

1. Regulated solid waste, including waste tires, shall be handled, transported and disposed of in accordance with applicable regulations. Documentary proof of proper transport and disposal of this waste, including transport forms, disposal forms, scale tickets, cancelled checks and receipts, shall be provided to MDNR and to the Engineer prior to acceptance of and payment for the work.

2. Material designated for use elsewhere shall not be removed from the project. Open burning will not be allowed.

B. Relocating Items: All items that may be damaged by the construction, that are not labeled "TO BE REMOVED" shall be temporarily removed by the Contract prior to work beginning at that location, stored in a safe place where damage will not occur to the item and shall be reinstalled at a location designated by the Engineer in a condition as good or better than the existing condition, to the satisfaction of the Owner. This shall include, but not be limited by: mailboxes, signs, planters, etc.

C. Damaged Items: Any item damaged by the Contractor's operations that is designated to remain in place, to be used elsewhere, or to be used by the public or an adjoining property Owner, shall be repaired or replaced at the Contractor's expense, in a manner satisfactory to the Engineer.

D. Contractor shall use extreme caution during all removal and milling operations at intersections. Any damage to existing traffic signal loops will be the responsibility of the Contractor. If a traffic signal loop is damaged during the Contractors operations, the Contractor, at his own expense, will replace the loop, in its entirety to the controller, in accordance with MoDOT Standards.

E. Dust and Emissions Control: All operations during demolition and removal shall be adequately controlled to prevent dust and visible emissions, unless otherwise approved by the Engineer. All measures taken shall be provided by the Contractor at the Contractor's expense unless specified otherwise.

F. Salvage: All material designated in the contract to be salvaged for Owner use from existing structures or improvements shall be removed without damage, in sections that may be readily handled, transported and stored as approved by the Engineer. Unless otherwise designated in the contract, cold milled material shall remain the property of the Contractor. Guardrail material will remain the property of the Owner and stockpiled as specified in the contract or as directed by the Engineer. All buildings, material and equipment of any description not designated for salvage by the Owner shall become the property of the Contractor, unless owned and claimed by a political subdivision or utility company. Salvaged material becoming the property of the Contractor shall not be stored on the right of way, or shall any portion of the right of way or land owned by the Owner be used by the Contractor as a place of sale for salvaged material.

3. REMOVAL OF IMPROVEMENTS

A. Pavements: Removal of pavement, curb, gutter, sidewalk, driveways and other similar improvements, and where a portion of such improvements are to be left in place, shall be to an existing joint. Sufficient removal shall be made to provide for proper grades and connections in the new work regardless of removal limits shown on the plans. All subgrade material will be restored as required with compacted material.

All saw cuts shall be a full depth saw cut completely through the pavement, unless otherwise stated or allowed by the Engineer, and shall be considered incidental to the contract.

1. Removal of concrete or asphalt material shall consist of breaking up and disposing of the material in areas furnished at the contractor's expense. The existing pavement to be removed shall be freed from the pavement to remain by saw cutting. The pavement inside the full depth saw cut shall be broken by methods suitable to the Contractor and approved by the Engineer.

2. Where driveway approaches are to be removed:

(a) A full-depth, straight, smooth saw cut shall be required in front (streetside) of the driveway approach. Base concrete (8" thick) and finish asphalt (2" thick) shall be required in front of driveway (street side) over-dig area. Tthis work shall be considered as incidental to the approach work.

(b) Where the new driveway meets an asphalt driveway, the contractor shall be required to sawcut full-depth behind the new

driveway for a smooth transition. The Engineer shall designate the location of the saw cut. The saw cut shall be considered incidental.

(c) For concrete driveways, the Contractor will be required to meet grade at the nearest joint, specified by the Engineer, for a smooth transition or to an Engineer approved saw cut which will be considered incidental to the Contract.

3. The Contractor's removal operation shall not cause damage to utilities, drainage structures, or sprinkler systems. Any damage shall be repaired by the Contractor at no expense to the Owner.

B. Sewers and Drains: All sewers, drainage pipes and floor drains that have been or are to be abandoned shall be permanently sealed at the ends with a minimum 8-inch thick bulkhead constructed of Class B concrete, a commercial mix concrete or brick masonry. The use of salvaged brick will be permitted for constructing bulkheads, provided the brick is clean and sound.

C. Backfill: All trenches, holes and pits resulting from the removal of improvements, contaminated material, soil, tanks and piping shall be backfilled and graded to shape and finish disturbed areas. Material shall be placed in the same manner and compacted to the requirements of Section 2300 EARTHWORK and shall be done in such a manner as to ensure proper drainage.

Backfill material may consist of previously stockpiled uncontaminated clay soil or may be obtained from the right of way if approved by the Engineer. Only approved material free of trees, stumps, rubbish and any other deleterious material shall be used in the construction of backfills. Rock, broken concrete or other solid material shall not be placed in bridge fill areas. No slope shall be steeper than 3:1. In the event there is insufficient material in the immediate vicinity, the contractor shall provide material, at the contractor's expense, from a source obtained by the contractor and approved by the Engineer.

D. Hazardous Material:

1. The contractor may encounter small quantities of hazardous material as defined by MDNR. This material shall be recycled or disposed of in a manner that maintains the material's qualifications as "small quantities" in accordance with MDNR regulations.

2. In the event the contractor encounters what is reasonably suspected to be large quantities of hazardous material, the contractor shall immediately cease work and notify the Engineer in accordance with the contract requirements. If the Engineer determines the suspect material is not hazardous or does not constitute a large quantity of hazardous material, the contractor will be notified to continue the work. If the Engineer determines the suspect material is hazardous or constitutes a large quantity of hazardous material, the Engineer may require the contractor to perform work necessary to abate the hazardous material.

4. PAVEMENT MILLING

A. Pavement milling shall consist of stripping pavement material by a cold milling process for the purpose of profiling or cleaning the surface prior to resurfacing. This milling shall provide a surface, which is free of gouges, ridges, continuous grooves and shall have a uniform surface texture. Butt joints are required to match existing grades of pavement to remain and shall have a vertical saw cut to a depth of 2 inches.

B. The equipment for milling shall be a power operated, self-propelled machine capable of removing a thickness of pavement necessary to provide profile, cross-slope and surface texture uniformly across the full width of the milling machine. The machine shall have sufficient power, traction, and stability to accurately maintain depth of cut and slope. An automatic system shall control grade elevations and cross-slope, be fully proportional and capable of field calibration. The system shall be capable of referencing from a towed averaging ski or a direct matching shoe.

C. The machine shall adequately control dust and other particulate matter created by cutting action. A dust suppression system including water storage tank and high-pressure spray bars shall be included.

D. The machine shall have an integral loading system or sufficient support equipment shall be provided to accomplish complete recovery of milled material at a rate equivalent to the removal rate of the milling equipment.

E. Milling shall be done in a longitudinal direction except in the case of butt joints. A longitudinal reference shall be provided to accurately guide the machine. The machine shall have a steering guide for reference that will allow the operator to follow the guidance reference within 1 inch.

F. The milled surface shall have a uniform texture, which is free of excessive gouges, ridges, and grooves to the satisfaction of the Engineer.

G. The roadway pavement surface shall be removed and milled around and over manholes, utility valves and drainage appurtenances within the limits of the work as directed by the Engineer. Any damage to manholes, utility valves or drainage appurtenances by the removal and milling operation shall be repaired by the contractor at the contractor's expense. After removal of existing material around manholes, utility valves and other appurtenances, the contractor shall place a temporary wedge around the appurtenance. The temporary wedge shall consist of asphalt or another approved material at a slope that will allow safe transition over the appurtenance by through traffic and of a thickness and design that the material remains intact while under traffic. Asphalt wedges shall be considered incidental and removed prior to resurfacing.

H. A transition satisfactory to the Engineer shall be provided at each end of the milling work at the end of the day in order to avoid a vertical edge perpendicular to direction of travel.

I. Complete recovery of milled material shall be accomplished immediately following the milling operation. The milled surface shall be clear of all loose material, dust and dirt. The recovered milled material shall be the property of the Contractor and disposed of properly off-site. Payment for this work shall be included in the price bid for pavement milling.

J. If existing pavement markings are removed by the milling process and the new pavement will not be paved the same day, temporary pavement markings shall be used to provide safe movement of traffic until permanent pavement markings can be provided. The temporary pavement markings must be removed immediately prior to paving operations if they will affect the bonding of the new pavement to the milled pavement.

K. Any damage to pavements, curbs, gutters, signal loops and public or private property, resulting from the milling process, which is determined by the Engineer to be due to the Contractor's operations, will be replaced by the Contractor in a timely manner to the satisfaction of the Owner at the Contractor's expense.

L. The entire width, when applicable, shall be milled uniformly in accordance with typical sections and details on the plans, or as otherwise approved by the Engineer, to allow for proper placement of the new surface.

M. Saw Cut butt joints: All butt joints required, as shown on the plan sheets, shall be sawed to a depth of 2 inches. Contractor shall install and maintain a temporary cold patch ramp at the butt joints. Asphalt cold patch ramps shall be considered incidental and removed just prior to the paving operations.

5. METHOD OF MEASUREMENT

A. Removal of Improvements. This work will not be measured for payment, but will be considered a lump sum unit. The work will include the removal of all items, regardless of whether the items are shown on the plans or encountered during construction.

B. Pavement Milling. The quantity measured shall be the number of square yards of asphalt and concrete pavement milled.

6. PAYMENT

A. These prices shall be full compensation for the execution of the pay items indicated including all material, equipment, labor and incidentals necessary to complete these items, including disposal off site.

B. Removal of Improvements. Accepted work will be paid for at the contract lump sum price. If no lump sum unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work and no direct payment for the removal will be made.

C. Pavement Milling. Accepted work will be paid for at the contract unit bid price for Pavement Milling. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work and no direct payment for the removal will be made.

ITEM: 2200.1 Removal Of Improvements – Lump Sum

END SECTION 2200

SECTION 2300 - EARTHWORK

1. GENERAL

   A. This section covers the work necessary for all earthwork, including but not limited to; any cut or fill required, rock excavation, subgrade preparation, subgrade repair, and disposal of all excess and waste materials.

2. DEFINITIONS

   A. Relative Compaction: The ratio, in percent, of the as-compacted field dry density to the laboratory maximum dry density as determined by ASTM D 1557 (Modified Proctor). Corrections for oversize material may be applied to either the as-compacted field dry density or the maximum dry density, as determined by the Engineer.

   B. Optimum Moisture Content: Determined by the ASTM standard specified to determine the maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the fraction passing the 3/4-inch sieve.

   C. Well-Graded: A mixture of particle sizes that has no specific concentration or lack thereof of one or more sizes. Well-graded does not define any numerical value that must be placed on the coefficient of uniformity, coefficient of curvature, or other specific grain size distribution parameters. Well-graded is used to define a material type that, when compacted, produces a strong and relatively incompressible soil mass free from detrimental voids.

   D. Gradation Test: Unless otherwise specified herein, determine the percent of material by weight passing the No. 200 sieve in accordance with ASTM D1140, then determine the particle size distribution of the portion of material retained on the No. 200 sieve in accordance with ASTM D422.

   E. Liquid Limit and Plastic Limit: As determined by ASTM D4318.

   F. Influence Area: The area within planes sloped downward and outward at an angle of 60 degrees from the horizontal from (a) 1 foot outside the outermost edge at the base of foundations or slabs; or (b) 1 foot outside the outermost edge at the surface of roadways or shoulder; or (c) 0.5 foot outside the exterior edge at the spring line of pipes and culverts.

   G. Borrow: Material excavated on the site or taken from designated borrow areas on or near the site.

   H. Selected Backfill Material: Material available on site that the Engineer determines to be suitable for a specific use.

   I. Imported Material: Material obtained by the Contractor from sources off the site.

   J. Embankment: The fill material required to raise the existing grade in areas other than under structures.

3. SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions, Division 1 of the Technical Specifications, and the requirements of this section.

B. Provide the following submittals:

1. Certification, test results, source, and sample for all imported material.

2. Catalog and manufacturer's data sheets for compaction equipment.

3. Certification and mill certificates for geotextile.

4. Copies of permits obtained for excavation, hauling, etc., that are required by state and local governing authorities.

4. IMPORTED MATERIAL ACCEPTANCE

A. All imported materials specified in this section are subject to the following requirements:

1. Certification that the material conforms to the Specification requirements shall be submitted to the Engineer for approval at least 21 calendar days before the material is required for use. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Sampling of the material source shall be done by the Contractor in accordance with ASTM D75. Notify the Engineer at least 24 hours prior to sampling. The Engineer may, at the Engineer's option, observe the sampling procedure. Tentative acceptance of the material source shall be based on an inspection of the source by the Engineer and/or the certified test results submitted by the Contractor to the Engineer, at the Engineer's discretion. No imported materials shall be delivered to the site until the proposed source and materials tests have been tentatively accepted in writing by the Engineer. Final acceptance will be based on tests made on samples of material taken from the completed and compacted course. The completed course is defined as a course or layer that is ready for the next layer or the next phase of construction. Testing for final acceptance shall be performed by the Engineer.

2. Gradation tests shall be performed by the Engineer at the Engineers discretion.

3. If tests conducted by the Engineer indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material, which does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense.

5. SHORING, SHEETING, BRACING, AND SLOPING

A. Install and maintain shoring, sheeting, bracing, and sloping necessary to support the sides of the excavation, to keep and to prevent any movement, which may damage adjacent pavements, utilities, or structures, damage or delay the work, or endanger life and health. Install and maintain shoring, sheeting, bracing, and sloping as required by

OSHA and other applicable governmental regulations and agencies.

6. EXCAVATION SAFETY

   A. The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to retain excavation side slopes and prevent rock falls to ensure that persons working in or near the excavation are protected.

7. CODES, ORDINANCES, AND STATUTES

   A. Contractors shall familiarize themselves with, and comply with, all applicable codes, ordinances, statutes, and bear sole responsibility for the penalties imposed for noncompliance.

8. TOLERANCES

   A. All material limits shall be constructed within a tolerance of 0.1 foot except where dimensions or grades are shown or specified as minimum. All grading shall be performed to maintain slopes and drainage as shown. No reverse slopes will be permitted.

9. PRODUCTS

   A. Provide all labor, materials, and equipment necessary to accomplish the work specified in this section.

10. EXCAVATION

   A. Complete all excavation regardless of the type, nature, or condition of the materials encountered, other than what is classified as Rock Excavation. The Contractor shall make his own estimate of the kind and extent of the various materials to be excavated in order to accomplish the work.

11. ROCK EXCAVATION

   A. Rock excavation includes removal and disposal of materials and obstructions encountered that cannot be excavated with a track-mounted power excavator, equivalent to Caterpillar Model NO. 215C LC, and rated at not less than 115 HP flywheel power and 32,000-pound drawbar pull and equipped with a short stick and a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity.

   B. Do not perform rock excavation work until material to be excavated has been cross-sectioned and classified by Engineer. Such excavation will be paid for on the basis of the unit price bid for Rock Excavation in accordance with the Contract Conditions relative to changes in work. The Contract Sum will be adjusted by an appropriate Contract Modification.

   C. Rock Excavation is limited to the following, unless otherwise directed by the Engineer:

      1. In pipe trenches, 4 inches below invert elevation of pipe and a width of 1.4 multiplied by the inside diameter of the pipe, plus 12".

2. Outside dimensions of concrete work where no forms are required.

3. Under pavement, 6 inches below bottom of concrete slab.

12. EARTH FILL

A. Earth fill shall be clayey or silty sand material free from clay clods, roots, organic matter, peat, debris, rocks larger than 3 inches, and other deleterious materials. Earthwork shall contain 15 to 40 percent by weight passing the No. 200 sieve. Soil materials shall comply with ASTM D 287 soil classification groups GW, GP, GM, SM, SW, and SP. Select earthwork from onsite excavations or provide imported material of equivalent quality, if required to accomplish the work.

13. AGGREGATE BASE

A. Imported granular material, naturally or artificially graded mixture of natural or crushed gravel, well graded from coarse to fine, free from clay lumps, roots, or organic material, meeting the requirements for MoDOT Type 5 Aggregate for Base.

14. SAND

A. Imported natural sand or sand produced from crushed gravel or crushed rock, free from clay and organic material, maximum size 1/4 inch, with 95 percent passing a No. 4 sieve, and a maximum of 8 percent by weight passing the No. 200 sieve.

15. TOPSOIL

A. Provide topsoil as specified in Section 9000, SODDING.

16. WATER FOR COMPACTION

A. Furnish as required.

17. COMPACTION EQUIPMENT

A. Compaction equipment shall be of suitable type and adequate to obtain the densities specified, and shall provide satisfactory breakdown of materials to form a dense fill.

B. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort. If inadequate densities are obtained, larger and/or different types of additional equipment shall be provided by the Contractor. Hand-operated equipment shall be capable of achieving the specified densities.

18. MOISTURE CONTROL EQUIPMENT

A. Equipment for applying water shall be of a type and quality adequate for the work, shall not leak, and shall be equipped with a distributor bar or other approved device to assure uniform application. Equipment for mixing and drying out material shall consist of blades,

discs, or other approved equipment.

19. DEWATERING

A. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent soil changes detrimental to stability of subgrades. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

B. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.

C. Water removal from excavation shall be disposed of according to local, State, and Federal requirements. Obtain the necessary permits and meet water quality requirements for total suspended solids, oil, grease, BOD, COD, and other limits listed on the permits from local, State, and Federal agencies.

20. STORAGE OF EXCAVATED MATERIALS

A. Dispose of excess excavated soil material and materials not acceptable for use as backfill or fill off of the site immediately unless otherwise authorized by the Engineer.

21. LIMITS OF EXCAVATION

A. Excavate to depths and widths, as shown. Allow for forms, working space, granular backfill, structural base, earth fill and finish topsoil as shown or required. Do not carry excavations deeper than the elevation shown. Excavation carried below the grade lines shown or established by the Engineer shall be replaced with the same fill material as specified for the overlying fill or backfill, and compacted as required for such overlying fill or backfill. Where the overlying area is not to receive fill or backfill, replace the overexcavated material and compact to a density not less than that of the underlying ground. Cuts below grade shall be corrected by similarly cutting adjoining areas and creating a smooth transition. Correct all overexcavated areas at the Contractor's sole expense.

B. Excavation widths beyond those shown shall be minimized. The Contractor shall design and use sloping, sheeting, and bracing as necessary to protect existing structures from damage.

22. BACKFILL AND FILL

A. General: Place soil material in layers to required subgrade elevations, listed below, using materials specified in this Section.

1. Under pavements, use subbase material.

2. Under piping, use granular drainage materials for bedding for correction of

unauthorized excavation.

3. Backfill trenches with granular drainage material.

B. Backfill excavations under new pavement and in trenches as promptly as work permits, but not until inspection, testing, and approval of construction below grade have been performed and recorded.

23. PLACEMENT AND COMPACTION

A. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills.

B. Place backfill and fill materials in layers not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

D. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density, in accordance with ASTM D 1557 (Modified Proctor Test):

1. Under pavements, compact each layer of backfill or fill material at 95 percent maximum density.

2. Under lawn or unpaved areas, compact top 6 inches of subgrade and each layer of backfill or fill material at 90 percent maximum density.

E. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.

1. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

24. GRADING

A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Finish surfaces free from irregular surface changes and as follows:

1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10 foot above or below required subgrade elevations.

2. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than ½ inch above or below required subgrade elevation.

25. FIELD QUALITY CONTROL

A. Quality Control Testing during Construction: The Engineer shall perform field quality control during construction at his/her discretion.

1. Field density tests shall be performed by the nuclear method in accordance with ASTM D 2922.

2. If field tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.

B. Paved Areas: Perform at least one field density test of subgrade for every 2,000 sq. ft. of paved area, but in no case fewer than three (3) tests per daily operation. In each compacted fill layer, perform one field density test for every 2,000 sq. ft. of paved area, but in no case fewer than five (5) tests per daily operation.

C. If in opinion of Engineer, based on testing service reports and inspection, subgrade or fills that have been placed are below specified density, perform additional compaction and testing until specified density is obtained.

26. DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal from Owner's Property: Remove waste materials, including unacceptable excavated material, trash, and debris, and dispose of it off Owner's property.

27. SUBGRADE

A. In advance of setting line and grade stakes, all depressions or ruts, which contain water, shall be drained. The grade shall then be bladed and dragged to remove inequalities and scarified as necessary to secure a uniform surface.

B. Excavation: Excavate and shape the subgrade to line, grade and cross section shown on the drawings.

C. Embankment:

1. Place embankment in lifts not to exceed 9 inches in compacted thickness.

2. Each lift shall be sprinkled with water or aerated and dried, as required, to obtain the optimum moisture required for the specified compaction.

3. Compact each lift to 90 percent relative compaction before placing the next lift of embankment material.

4. Construct the embankment to the line, grade and cross section shown on the

drawings.

D. Completed Subgrade

1. The completed bottom surface of the excavations and top surface of the embankment shall be defined as the subgrade.

2. The subgrade shall be sprinkled with water or aerated and dried, as required, to obtain the optimum moisture required for the specified compaction.

3. Roll the subgrade until the top 6 inches is compacted to 95 percent relative compaction.

E. The finished subgrade shall be within a tolerance of ±0.1 foot of the grade and cross section shown, and shall be smooth and free from irregularities and at the specified density.

F. The subgrade shall be considered to extend over the full width of the base course. Compaction shall extend 1 foot beyond the edge of paving, curb, or form.

28. SUBGRADE REPAIR

A. During compaction of the prepared subgrade, the Contractor shall record and report all soft or uncompactable areas to the Engineer. In areas where soft spots and unsuitable soils are encountered, the Contractor shall notify the Engineer prior to performing any subgrade repair operations. The Engineer shall delineate the limits of the subgrade repair.

B. The designated areas shall then be excavated an additional one (1) foot below the elevation of the bottom of the aggregate base course.

1. The excavated material shall be disposed of at a Contractor furnished offsite disposal site.

C. Backfill the excavated areas with 2" minus aggregate base course material as follows:

1. Backfill subgrade repair area in two lifts, 6 inches compacted thickness each, to the elevation of the bottom of the aggregate base course.

2. Compact lift to 90 percent relative compaction before placing the next lift of subgrade repair material.

D. If the excavation below subgrade is required because of the results of the Contractor's operations, the necessary excavation, backfilling and compaction required to restore the subgrade satisfactorily shall be at the Contractor's sole expense.

29. PROOF-ROLLING

A. Following completion of the subgrade repair and final compaction, the entire subgrade area shall be proof-rolled.

B. Proof-roll the entire subgrade with a minimum of two complete surface coverages with the wheels of a loaded 10-yard dump truck or other approved equipment.

1. The dump truck shall have dual wheels on tandem rear axles (eight rear wheels total) and shall be loaded with a minimum of 10 cubic yards of crushed rock.

C. During proof-rolling of the compacted subgrade, the Engineer will observe and record all soft areas and unstable areas that show subgrade movement during proof-rolling.

D. The limits of subgrade failure that were developed during proof-rolling will be marked by the Engineer. The designated areas shall then be excavated an additional one (1) foot below the elevation of the bottom of the aggregate base course.

E. Backfill the excavated areas with 2" minus aggregate base course material as follows:

1. Backfill subgrade repair area in two lifts, 6 inches compacted thickness each, to the elevation of the bottom of the aggregate base course.

2. Compact lift to 90 percent relative compaction before placing the next lift of subgrade repair material.

F. The subgrade in the area of the completed backfill shall be rolled until the top 6 inches is compacted to 95 percent relative compaction.

G. If the excavation below subgrade is required because of the results of the Contractor's operations, the necessary excavation, backfilling and compaction required to restore the subgrade satisfactorily shall be at the Contractor's sole expense.

30. PROTECTION OF SUBGRADE

A. After preparing the subgrade as above specified, all unnecessary traffic shall be kept off. Should it be found necessary to haul over the prepared subgrade, the Contractor shall drag and roll the traveled way as frequently as may be necessary to remove ruts, cuts, and breaks in the surface. All cuts, ruts, and breaks in the surface of the subgrade that are not removed by the above operations shall be raked and hand tampered. All equipment used for transporting materials over the prepared subgrade shall be equipped with pneumatic tires.

B. Continued use of sections of prepared subgrade for hauling, so as to cut up or deform it from the true cross section, will not be permitted. The Contractor shall protect the prepared subgrade from traffic.

C. The Contractor will be required, at the Contractor's sole expense, to plank the subgrade before hauling materials or equipment over it.

D. The subgrade shall be maintained in the finished condition until the first succeeding course is placed.

31. FULL DEPTH PAVEMENT REPAIR

A. This work shall consist of removing specified areas of existing variable thickness

pavement, repairing and/or compacting the base to 95% of the standard proctor as necessary, and replacing the removed material with non-reinforced Portland cement concrete as shown on the plans or as directed by the Engineer and utilizing methods and materials conforming to the latest edition of the Missouri Standard Specifications for Highway Construction. This work includes removal, hauling, off-site disposal, and all related costs, including disposal fees, equipment, labor, and materials.

B. The Engineer will determine the locations of the full depth pavement repair to obtain the smoothest possible riding surface. The Contractor will make a full depth saw cut as directed by the Engineer to remove the unsatisfactory pavement and replace the excavated area with high-early concrete, attaining 3500 psi in 24 hours. Contractor will be required to barricade the area with flashing barricades and necessary signage to ensure public safety as approved by the Engineer.

32. METHOD OF MEASUREMENT

A. Earthwork. This work will not be measured for payment, but will be considered incidental to the contract. The work will include all excavation, embankment, base rock, backfill, compaction and finish grading required, regardless of whether the items are shown on the plans or encountered during construction.

B. Subgrade Repair. The quantity measured shall be the number of cubic yards of approved unsuitable material excavated.

C. Full Depth Pavement Repair. The quantity measured shall be the number of square yards of approved full depth pavement repair placed, complete and accepted.

D. Rock Excavation. The quantity measured shall be the number of cubic yards of approved rock material excavated.

E. Type 5 Aggregate for Base (4" Thick). The quantity measured shall be the number of square yards of aggregate base, 4" thick, placed, compacted and accepted for the area of new pavement reconstruction only as shown on the plans. All other aggregate, or aggregate base, is considered incidental and is a subsidiary obligation of the Contractor.

F. Type 2 Rock Blanket with Geotextile Fabric (2' Thick). The quantity measured shall be the number of cubic yards of Type 2 Rock Blanket, 2' thick placed and accepted as shown on the plans.

33. PAYMENT

A. If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered as a subsidiary obligation of the Contractor covered under the other contract items. Only accepted work will be measured.

B. Earthwork. Payment for this work shall be considered incidental to the contract. This work includes furnishing and placing all materials, furnishing equipment, labor, tools and incidentals necessary to complete these items.

C. Subgrade Repair. Payment shall be at the unit bid price as herein indicated. This price shall be full compensation for the execution of the pay items indicated including all

material, furnishing equipment, labor, tools, disposal of excavated material and incidentals necessary to complete these items. This item is to provide for the repair of the subgrade in the process of the work and shall be used only under the direction of the Engineer.

D. Full Depth Pavement Repair. Payment shall be at the unit bid price as herein indicated. This price shall be full compensation for the execution of the pay items indicated including all material, furnishing equipment, labor, tools, saw cutting, disposal of excavated material and incidentals necessary to complete these items. This item is to provide for the repair of the pavement base in the process of the work and shall be used only under the direction of the Engineer.

E. Rock Excavation. Payment shall be at the unit bid price as herein indicated. This price shall be full compensation for the execution of the pay items indicated including all material, furnishing equipment, labor, tools, disposal of excavated material and incidentals necessary to complete these items. This item is to provide for the removal of rock encountered in the process of the work and shall be used only under the direction of the Engineer.

F. Type 5 Aggregate for Base (4" Thick). Payment shall be at the unit bid price as herein indicated. This price shall be full compensation for the execution of the pay items indicated including all material, furnishing equipment, labor, tools, saw cutting, disposal of excavated material and incidentals necessary to complete these items. This item is to provide for the placement of aggregate base under the area of new pavement reconstruction only.

G. Type 2 Rock Blanket with Geotextile Fabric (2' Thick). Payment shall be at the unit bid price as herein indicated. This price shall be full compensation for the execution of the pay items indicated including all material, furnishing equipment, labor, tools, disposal of excavated material and incidentals necessary to complete these items. This item is to provide and place rock blanket as shown on the plans.

ITEM: 2300.1 Subgrade Repair – Cubic Yard

ITEM: 2300.2 Rock Excavation – Cubic Yard

ITEM: 2300.3 Type 5 Aggregate For Base (4" Thick) – Square Yard

ITEM: 2300.4 Type 2 Rock Blanket with Geotextile Fabric (2' Thick) – Cubic Yard

END OF SECTION 2300

SECTION 2350 – EROSION CONTROL

1. GENERAL

   A. This work shall consist of furnishing, installing, maintaining and removing temporary pollution, erosion and sediment control measures; furnishing and placing permanent erosion control features; or a combination of both as shown on the plans or as directed by the Engineer.

2. SUBMITTALS

   A. Prior to the preconstruction conference and the start of construction, the Contractor shall submit schedules for the implementation of temporary and permanent erosion control work, as applicable, for construction operations. No work shall start until the erosion control schedules and methods of operations have been approved by the Engineer.

3. GENERAL CONSTRUCTION

   A. The Engineer may direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other bodies of water. Such work may involve the construction of temporary berms, dikes, dams, sediment basins and slope drains, and use of temporary mulches, seeding or other control devices or methods as necessary to control erosion and pollution.

   B. If the Engineer determines ditch checks, as shown on the plans, are not suitable due to site conditions, a combination of ditch checks and erosion control blankets or rock blankets shall be designed to effectively reduce flow velocities.

   C. The Contractor shall exercise effective management practices throughout the life of the project to control pollution. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage or other harmful material shall not be discharged on or from the project. Temporary pollution control measures, such as storage and handling of petroleum products and other pollutants, shall be coordinated with temporary and permanent erosion control features specified in the contract to ensure economical, effective and continuous erosion and pollution control. These requirements will also apply to work within easements designated by the Owner.

   D. The Contractor shall incorporate all permanent erosion and pollution control features into the project at the earliest practical time. Temporary measures shall be used to correct conditions that develop during construction which were not foreseen during the design stage, that are needed prior to installation of permanent pollution control features, or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

   E. Clearing and grubbing operations shall be scheduled and performed such that grading operations and erosion control features will follow immediately thereafter.

   F. Erosion from construction operations and pollution control measures shall not cause water pollution. In the event of conflict between these requirements and the pollution control laws, rules or regulations of other federal, state or local agencies, the more restrictive laws, rules or regulations will apply.

G. Unless otherwise specified, or directed by the Engineer, all temporary erosion control measures shall be removed by the Contractor after permanent erosion control measures are established. All temporary erosion control measures shall be removed prior to acceptance of the project and before final payment.

4. TEMPORARY BERMS

Temporary berms shall consist of graded material from within the project limits or any other suitable material approved by the Engineer and shall be constructed to the approximate dimensions shown on the plans.

A. Type A Berms: shall be machine compacted with a minimum of one pass over the entire width of the berm.

B. Type B Berms: shall be machine compacted with a minimum of three passes over the entire width of the berm. Material removed from Type B berms shall be incorporated in the embankment when possible. The Contractor shall remove and dispose of any excess or unsuitable material to a location approved by the Engineer.

Type A and Type B Berms. Temporary berms shall drain to a compacted outlet at a slope drain. On transverse berms, the top width of the berms may be wider and the sideslopes flatter to allow equipment to pass over these berms with minimal disruption.

C. Type C Berms: shall be constructed of rock base material as approved by the Engineer. Vegetative mulch or an equivalent erosion control blanket shall be placed on the upslope side of the Type C berm. The vegetative mulch shall be placed in such a manner that the final compacted thickness is 2 inches. The straw layer or equivalent erosion control blanket shall be removed and replaced as directed by the Engineer.

5. TEMPORARY SLOPE DRAINS

This work shall consist of constructing and maintaining temporary slope drains to carry water down slopes and to reduce erosion. The method selected shall be approved by the Engineer prior to construction.

A. The Contractor shall provide temporary, impermeable slope drains to carry water or water with suspended solids down fill slopes until permanent erosion control measures are established. The Contractor shall provide temporary slope drains on fill slopes at approximately 500-foot intervals or as directed by the Engineer. All temporary slope drains shall be adequately anchored to the slope to prevent disruption of flow. Inlet ends shall be properly constructed to channel water into the temporary slope drain. Outlet ends shall have some means of dissipating the energy of the water to reduce erosion downstream. The Contractor shall restore the site of the slope drains to the satisfaction of the Engineer.

6. TEMPORARY DITCH AND INLET CHECKS

This work shall consist of constructing and maintaining temporary ditch and inlet checks, removing sediment deposits from these checks and disposing of the sediment at a location approved by the Engineer.

A. Materials

1. Posts: Wood, steel or synthetic posts may be used. Posts shall be of sufficient length, but no less than 4 feet, to ensure adequate embedment while fully supporting the silt fence and shall have sufficient strength to resist damage during installation and to support applied loads while in service.

2. Support Fence: All geotextile silt fences shall be supported either externally by wire or other approved mesh to a height of at least 24 inches or by a suitably designed support system capable of keeping the material erect. Either method shall be strong enough to withstand applied loads.

B. Type I Ditch Checks: shall be constructed of straw bales, silt fence or an approved alternative erosion control measure as specified in the contract. Type I ditch checks shall not be used where drainage areas exceed 3 acres or where ditch slopes exceed 10 percent. Type II ditch checks may be substituted for Type I ditch checks at the Contractor's expense. Straw bale and silt fence ditch checks shall be constructed as shown on the plans in accordance with the contract documents. Approved alternate Type I ditch checks shall be installed and maintained according to the manufacturer's recommendations.

C. Ditch Checks: Approved alternate Type II ditch checks may be used as shown in the contract. Type II ditch checks shall not be used where drainage areas exceed 50 acres or where ditch slopes exceed 10 percent.

D. Rock Ditch Checks: shall be constructed with clean rock. A minimum of 50 percent of the rock shall have a diameter of 6 inches or greater, with a maximum size of 9 inches. Silt fence or an equivalent filter fabric shall be placed beneath the rock ditch check as shown on the plans.

E. Sand Bag Ditch Checks: Sand or rock for sand bags shall be a uniform granulation with a maximum aggregate size of 2 inches, shall be clean to allow percolation of water through the sand bag and shall meet the approval of the Engineer. Sand bags shall be of tightly woven burlap or other material that is sufficiently durable to remain intact for the time intended. Sand bags shall be filled approximately three-fourths full, shall laid in horizontal courses, and successive courses shall break joints with preceding ones. The bags shall be packed against each other and tamped to provide a uniform surface.

F. Drop Inlet Checks: shall be constructed adjacent to the drop inlets as shown on the plans or as directed by the Engineer, as necessary to prevent sediment from entering the inlet. Material shall be in accordance with the requirements of the Type II Ditch Checks or as approved by the Engineer.

G. Maintenance: The Contractor shall replace checks as directed by the Engineer. Periodic sediment removal shall include removal and disposal of sediment to a location where sediment will not erode into construction areas, streams or other bodies of water. The Contractor shall inspect the ditch checks for sediment accumulation after each storm event and shall remove the sediment when deposits reach approximately one-half the original height of the check. Alternate temporary erosion control methods shall be maintained in accordance with the manufacturer and as directed by the Engineer.

7. SEDIMENT BASINS

This work shall consist of constructing sediment basins as shown on the plans or as directed by the Engineer to detain sediment. This work shall also include disposal of excavated material, sediment and basin removal and site restoration.

A. The area where a sediment basin is to be constructed shall be cleared of vegetation to enable sediment removal. The sediment basin shall be an excavated or dammed storage area with defined side slopes. Inlet and outlet areas shall be lined with rock riprap.

B. The inlet of a sediment basin shall be constructed with a wide cross-section and a minimum grade to prevent turbulence and to allow deposition of soil particles. When the depth of sediment reaches one-half the original depth of the sediment basin in any part of the pool, all accumulation shall be removed.

C. The Contractor shall dispose of accumulated sediment and excavated material removed during the construction of the sediment basin in locations where the material will not erode into the construction areas, streams or other bodies of water.

D. Sediment basins shall remain in service until all disturbed areas draining into the structure have been satisfactorily stabilized. When use of a temporary sediment basin is to be discontinued, the Contractor shall remove any sediment and backfill, properly compact all excavations, restore the area to the existing ground's natural or intended condition, and sod.

8. TEMPORARY SEEDING AND MULCHING

This work shall consist of furnishing and applying fertilizer, seed, vegetative mulch or other acceptable cover authorized by the Engineer. This work shall produce a quick ground cover to reduce erosion in disturbed areas expected to be redisturbed at a later date. Finish grading of areas will not be required. Hydraulic seeding and fertilizing will be permitted.

A. Seeding and mulching shall be a continuous operation on all cut and fill slopes, excess material sites and borrow pits during the construction process. All disturbed areas shall be seeded and mulched as necessary to eliminate erosion.

B. The Contractor shall provide permanent sodding as shown on the plans following temporary seeding.

C. Temporary seeding mixtures of cereal grains shall be applied at a rate of 100 pounds per acre (110 kg/ha). All erodible seeded areas shall provide a minimum of 20 plants of the species planted per square foot on at least two random counts per acre in representative areas of the field. For areas with a large percentage of rock, the number of living plants shall be proportional to the percentage of erodible surface, as determined by the Engineer. The counts will be conducted 60 days after the species is planted.

D. Fertilizer shall be applied at a rate of 40 pounds nitrogen (N) per acre.

9. SILT FENCE

This work shall consist of furnishing, installing, maintaining, removing and disposing of a silt fence designed to remove suspended particles from sheet flow passing through the fence and to

prevent sediment from polluting nearby streams or other bodies of water. At the Engineer's discretion, the location may be modified to fit field conditions. Such variations in quantity will not be considered as a change in work.

A. Materials

1. Posts: Wood, steel or synthetic posts may be used. Posts shall be of sufficient length, but no less than 4 feet, to ensure adequate embedment while fully supporting the silt fence and shall have sufficient strength to resist damage during installation and to support applied loads while in service.

2. Support Fence: All geotextile silt fences shall be supported either externally by wire or other approved mesh to a height of at least 24 inches or by a suitably designed support system capable of keeping the material erect. Either method shall be strong enough to withstand applied loads.

3. Prefabricated Fence: Prefabricated fence systems may be used if the systems meet all of the above material requirements.

B. Straw Bales: The Contractor shall place bales at the bottom of embankment slopes or on the lower side of cleared areas to divert runoff and to detain sediment from sheet flow. When used to divert runoff or detain sediment, the bales shall be adequately anchored to withstand the applied load.

C. Fabric Fence: The Contractor shall install silt fence as shown on the plans and at other locations directed by the Engineer. Fence construction shall be adequate to handle the stress from hydraulic and sediment loading. Fabric at the bottom of the fence shall be buried a minimum of 6 inches to prevent flow under the barrier. The trench shall be backfilled, and the soil compacted over the fabric. Fabric splices with a minimum 2-footoverlay shall be located only at a support post. Any installation method acceptable to the Engineer will be allowed as long as the effectiveness and intent of the silt fence is achieved.

D. Post spacing shall not exceed 5 feet. Posts shall be driven a sufficient depth into the ground or placed on closer spacing as necessary to ensure adequate resistance to applied loads.

E. The silt fence shall be fastened securely to the upslope side of the post. When wire support fence is used, the wire shall extend into the trench a minimum of 2 inches.

F. Maintenance: The Contractor shall maintain the integrity of silt fences as long as the fences are necessary to contain sediment runoff. The Contractor shall inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfalls. Any deficiencies shall be immediately corrected by the Contractor. In addition, the Contractor shall make a daily review of the silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure the silt fences are properly located for effectiveness. Where deficiencies exist, additional silt fences shall be installed as approved or directed by the Engineer.

G. Sediment: The Contractor shall remove and dispose of sediment when accumulations reach approximately one-half the fence height, or sooner when directed by the Engineer.

If required by heavy sediment loading, a second silt fence shall be installed as directed by the Engineer.

H. Removal: The silt fence shall remain in place until removal is directed by the Engineer. Upon removal, the Contractor shall remove and dispose of any excess silt accumulation, grade and dress the area to the satisfaction of the Engineer, and establish vegetation on all bare areas in accordance with the contract requirements. The fence material shall remain the property of the Contractor.

10. TEMPORARY PIPE

This work shall consist of installing and removing temporary pipe utilized to carry water under temporary roadways, silt fences, berms or other locations determined by the Engineer and to prevent the Contractor's equipment from coming in direct contact with water when crossing an active stream, intermittent streams created during heavy rainfalls or other bodies of water. Any pipe approved by the Engineer may be used.

A. Installation of temporary pipe shall be in accordance with the specifications for permanent pipe and shall prevent water from causing erosion around the pipe. All backfill material for pipes shall be placed in 6-inch lifts and mechanically compacted. Compaction tests will not be required. Temporary pipe placed in intermittent or active streams shall be backfilled with clean rock.

11. TEMPORARY EROSION CONTROL BLANKETS

This work shall consist of furnishing and placing erosion control blankets on slopes or ditches for short-term or long-term protection of seeded areas at locations shown on the plans or as directed by the Engineer.

A. Erosion control blankets shall be used as designated in the contract or as approved by the Engineer. The Contractor shall provide prequalified erosion control blankets of the class and type specified in the contract documents or as approved by the Engineer. Erosion control blankets shall be installed and maintained according to the manufacturer's recommendations.

12. TEMPORARY STREAM CROSSING

This work shall consist of constructing a temporary stream crossing to facilitate the movement of equipment across a stream.

A. The Contractor shall be responsible for the design, installation, maintenance and removal of the temporary stream crossing and any structures installed for the construction of the temporary stream crossing. Appropriate measures shall be taken to maintain near normal downstream flows and to minimize flooding upstream. The temporary stream crossing shall be constructed to permit the free movement of the stream's aquatic life.

B. Prior to construction of the temporary stream crossing, all information shall be submitted to the Engineer as needed for the issuance or modification of the Corps of Engineer permit. The Contractor shall not begin construction on any temporary stream crossing without written permission from the Engineer.

C. All approaches to the temporary stream crossing shall be maintained such that all storm water runoff is diverted to retention devices.

D. When the temporary stream crossing is no longer needed, the crossing shall be removed as soon as possible and the area shall be restored to pre-project conditions or to the satisfaction of the Engineer.

13. GENERAL MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.

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

D. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

14. MEASUREMENT AND PAYMENT

A. Silt Fence shall be measured and paid for by the linear foot of installed and accepted fence. The work shall include all excavation, materials, tools, and any other items necessary to properly install the silt fence.

B. Inlet Checks shall be measure and paid for per each installed and accepted inlet check. The work shall include all excavation, materials, tools, and any other items necessary to properly install the inlet check.

ITEM: 2350.1 Silt Fence – Lineal Foot

ITEM: 2350.2 Inlet Check – Each

END OF SECTION 2350

SECTION 2500 – TEMPORARY WALKWAYS AND BRIDGES

1. GENERAL

   A. This section includes the requirements for establishing temporary walkways and bridges for pedestrian traffic.

2. SUBMITTALS

   A. Submit a detailed drawing of a typical bridge that will be used to provide access to buildings during construction.

3. PROGRESS OF THE WORK

   A. General.

      1. The Contractor will provide access to all buildings during construction.

      2. Any open excavations and new concrete placements will be bridged to allow for pedestrian access.

      3. Temporary walkways will be established parallel to the street and perpendicular to each entrance of all buildings.

      4. Bright orange construction fencing and signage will be used to define the walkways.

4. TEMPORARY WALKWAYS

   A. General.

      1. Temporary walkways will be a minimum of 5-feet-wide and 4 inches deep, made of compacted 3/4-inch crushed stone.

      2. Temporary walkways will be placed at the existing grade of the current sidewalks. Care will be used to ensure safe transitions between new and existing work.

5. BRIDGES

   A. General.

      1. Bridges will be used to cross open excavations and to protect new concrete. The Contractor will be required to provide safe access to all buildings for pedestrian use.

      2. Bridges will be a minimum of 5-feet-wide and be equipped with handrails as prescribed by OSHA.

6. PRODUCTS

   A. General. Temporary walkways will be ¾-inch compacted crushed stone.

7. EXECUTION

   A. General. Within a reasonable amount of time, the Contractor will remove sections of the sidewalk and replace them with a temporary walkway. Under no circumstances will the Contractor be allowed to open up a section of the sidewalk and not replace it with temporary access in the same day.

8. MEASUREMENT

   A. No direct measurement will be made for temporary fencing or signage.

   B. No direct measurement will be made for temporary walkways or bridges.

9. PAYMENT

   A. General:

      1. Payment for work in this section will be considered as incidental to the contract.

      2. Any extension of contract time that may be granted by the Owner will not of itself constitute a claim for additional payment for work under this section.

END SECTION 2500

SECTION 3000 - SEWERS

1. GENERAL

   A. This section covers the work necessary for the installation and abandonment of storm and combination sewers.

   B. Where the term "Standard Specifications" is used, such reference shall mean the latest revision of the Metropolitan St. Louis Sewer District Revised Standard Construction Details and Specifications, except as otherwise provided in the Contract Documents. Where reference is made to a specific part of the Standard Specifications, such applicable part shall be considered as part of this Section of the Specifications.

   C. All underground work contemplated in the area of the subgrade shall be completed and properly backfilled before subgrade work is started.

2. SUBMITTALS

   A. Product Data: Provide data on pipe materials, pipe fittings, and accessories. Provide shop drawings for precast inlets, catch basins and junction boxes.

   B. Manufacturer's Certificate: Certify that products meet or exceed specified local requirements.

   C. Project Record Documents

      1. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.

      2. Identify and describe unexpected variations to subsoil conditions and location of uncharted utilities.

3. MATERIALS

   A. POLYVINYL CHLORIDE (PVC) SOLID WALL SEWER PIPE. Pipe and fittings under these Specifications shall be PVC solid wall pipe with bell and spigot gasketed joints, manufactured of materials and methods meeting the tests set forth in the latest revision of ASTM D-3034 and ASTM D-3212. PVC sewer pipe shall have a maximum standard dimension ratio of 35. Pipe must be continually marked with manufacturer's name, pipe size, cell classification, SDR rating, and ASTM D 3034 classification. Only permitted when specifically indicated on Drawings.

   B. DUCTILE IRON PIPE. Ductile iron pipe for use on sanitary sewer main under these specifications shall be lined with a pure fused calcium aluminate mortar with seal coat applied, as manufactured by Lafarge Calcium Aluminate, or approved equal. cement-lined super bell-tite push-on joint; manufactured of materials and methods meeting the tests set forth in the latest revision of ANSI A21.51 (AWWA C151) for Class 50 ductile iron pipe. Pipe shall have a working pressure of 350 psi.

   C. REINFORCED CONCRETE PIPE (RCP). ASTM C76, Class III unless noted otherwise

on Drawings, installed with flexible plastic, bitumen gaskets at joints.

1. Gaskets: AASHTO M 198 751, Type B or ASTM C 443, installed in accordance with manufacturer's recommendations.

2. Flared end sections shall be per ASTM C76 or AASHTO H170 (for sections with toe wall)

D. HIGH DENSITY POLYETHYLENE PIPE (HDPE). AASHTO Designation M252 Type S, M294 Type S and MP7-97 Type S, smooth interior/annular exterior. Only permitted when specifically indicated on Drawings. Pipe shall be in-stalled in accordance with pipe manufacturer's installation Guidelines for Culvert Storm Drainage Applications.

1. Pipe Joints and fittings shall conform to AASHTO M252 and M294.

E. SPIRAL RIB METAL PIPE. ASTM A 760 Type 1R or Type IIR. Coatings shall meet requirements of ASTM A929 and shall be galvanized, aluminized, or bituminous coated as specified on Drawings. Only permitted when specifically indicated on Drawings.

1. Pipe ends shall be re-corrugated and installed with semi-corrugated "Hugger" type bands and "O" ring gaskets in accordance with pipe manufacturer's installation requirements.

2. Pipe gauge shall be as specified on construction drawings or if no gauge is given then the minimum gauges are as follows: 15" to 42" diameter round pipe – 16 gauge (0.064"), 48" to 60" round pipe – 14 gauge (0.079"), 66" to 78" round pipe – 12 gauge (0.109"), 15" to 30" pipe arch – 16 gauge (0.064"), 36" to 42" pipe arch – 14 gauge (0.079"), and 48" to 78" pipe arch – 12 gauge (0.109"). Gauges for larger diameters shall be indicated on the drawings.

3. Installation shall be in accordance with ASTM A798 and A796 as they apply, manufacturer's requirements, and as indicated on the drawings.

4. Standard corrugated steel pipe as described in section E of these specifications shall not be substituted for any diameter of Spiral Rib Steel Pipe.

F. CORRUGATED STEEL (METAL) PIPE (CSP or CMP). ASTM A 760, 16 gauge unless another gauge is indicated on Drawings. Galvanized, aluminized (Type 1R), or bituminous coated as specified on Drawings. Only permitted when specifically indicated on Drawings. Corrugated steel pipe may be round pipe, arch pipe, or slotted drainpipe as indicated on Drawings. Slotted drainpipe shall have 1.75-inches wide drain waterway openings and 6 inches minimum height drain guide

1. CSP, bands and appurtenances shall be uniformly coated inside and outside with a 0.05 inch minimum thickness bituminous coating in accordance with AASHTO M190.

2. CSP shall be supplied with paved inverts or fully lined to provide a smooth interior, smooth flow lining only as indicated on the drawings.

G. SUBDRAINS. Perforated PVC or flexible corrugated plastic pipe as specified herein of

the size indicated on the drawings.

H. IMPORTED GRANULAR MATERIAL.

1. Imported granular material shall be used for pipe base and pipe zone backfill for pipe installations.

2. Granular material shall be clear pea gravel or crushed rock well graded from coarse to fine and shall be free from debris, roots, or other deleterious material. The presence of fine clay or loam particles is acceptable, but shall not exceed 8 percent by weight passing the No. 200 sieve as determined by ASTM D 1140. Clay or loam lumps are not permitted.

3. Maximum size aggregate for granular pipe base and pipe zone shall be as follows:

18-inch and smaller	3/4
21-inch to 36-inch	1-1/2
42-inch and larger	2-1/2

4. SEWER PIPES

A. All sewer pipe shall be laid accurately to the line and grades indicated on the approved plans. The trench excavation shall be of sufficient width to properly construct the joints and to allow for inspection of proper bedding of the pipe. In all cases, the bottom quadrant of the pipe trench should be carefully shaped at proper intervals so that the pipe bells support no part of the load. The full load should rest on the barrel of the pipe.

B. To assure stable pipe bedding, mechanical excavation should be made to allow for the minimum required depth of aggregate base below the bottom of the pipe grade. Minimum depth of aggregate base shall be a follows:

15-inch and smaller	4
18-inch to 36-inch	6
42-inch and larger	9

1. Hand-grade base to proper grade ahead of pipe laying. Base shall provide a firm, unyielding support along entire pipe length

C. The grades to which all sewer lines are laid shall be accurately controlled, providing grade stakes and batter board at 25-foot intervals and checking invert elevations with a grade rod from an established grade line.

D. A laser beam may be used to attain proper alignment of sewer pipe during construction.

However, if such a device is used, a blower of sufficient capacity to prevent diffraction of the beam by fumes from joint lubricant must be used.

E. No pipe shall be installed in the trench until the bottom of the trench has been properly shaped and its conditions, line, and grade have been approved by the Owner.

F. All sewers must be laid in a straight line so that a light can be seen from one end to the other. Pipe shall be laid with the spigot end downstream entering the bell to full depth, and in such manner as not to drag earth into the joints. Pipe sections shall be fitted together and matched so that, when laid, they will form a sewer with a smooth and uniform invert. Installation shall be in accordance with manufacturer's recommendations.

G. Wherever obstructions are encountered during the progress of the work and interfere to such an extent that an alteration in the Plan is required, the Owner shall have the authority to change the approved plans and order a deviation from the line and grade or arrange with the Owners of the structures for the removal, relocation, or reconstruction of the obstructions.

6. PRE-CAST MANHOLES

A. Pre-cast manholes shall be 48" diameter and conform with ASTM C478 and to design dimensions. Cones and sections shall be substantially free from fractures, large or deep cracks and surface roughness.

B. All lift holes shall be thoroughly wetted and then be completely filled with mortar, smoothed and pointed to insure water-tightness.

C. All joints between pre-cast elements on manholes shall be made with an approved bitumastic material or an approved rubber gasket.

D. The first pre-cast barrel section shall be positioned and carefully adjusted to true grade and alignment. Manhole connections for inlet pipes shall be in accordance with the approved plans. All inlet pipes shall be properly installed with the base section so as to form an integral watertight unit. The base section shall be cast in place to form a watertight unit with the first barrel section.

E. Pre-cast sections shall be placed and aligned to provide vertical sides and vertical alignment of the ladder rungs. The completed manholes shall be rigid, true to dimensions, and watertight.

F. Tops of manholes shall be built up to the elevations indicated on the approved plans. Where no elevation is indicated, they shall be built to the existing ground surface unless the Owner shall direct otherwise.

7. FRAMES AND COVERS

Frames and covers shall be of the type of duty shown on the approved plans. Iron castings shall conform to the latest revision of ASTM Specifications A-48, Class 20. All castings shall be true to pattern in forms and dimensions, free from faults, sponginess, cracks, blowholes, and other defects affecting their strength. Bearing surfaces between cast frames and covers shall be machined, fitted together, and match-marked to prevent rocking. Manhole frames and covers

shall have a built in gasket and be the type of design to eliminate any surface water infiltration into the system.

8. CUTTING AND TRENCHING EXCAVATION

A. Underground pipe construction shall be in accordance with the recommended practice as outlined by the pipe manufacturer.

B. All excavations shall be made to such depths and widths as will give ample room for building all structures, sewers, and appurtenances as detailed on the approved plans.

C. If local conditions permit their reuse, all surface materials suitable for reuse in restoring the surface shall be kept separate from the general excavation material.

D. All excavated material unsuitable for backfill shall be removed and disposed of off the site, by and at the expense of the Contractor.

E. All excavated material shall be piled in a manner that will not endanger the work and that will not avoid obstructing walks and driveways. Ditches shall be kept clear or other satisfactory provisions made for drainage.

F. No excavated trench shall be wider than 1-4/10 times the pipe diameter in inches plus 12 inches (width = 1.4d" + 12") or two feet wide or as designated by the Owner.

G. Granular backfill material shall be tamped into the trench uniformly on both sides of the pipeline for the full width of the trench, up to the horizontal diameter of the pipeline.

H. No large rocks shall be allowed in contact with the pipe either in the bed or the backfill. Large rocks occurring in the bed shall be removed and the resulting hole filled with gravel.

I. Bell holes shall be of ample depth to permit the barrel of the pipe totally flat on the trench bottoms, but they shall not be larger than necessary or properly making the joint.

9. SHEETING AND BRACING

A. Furnish, put in place, and maintain such sheeting, braces, rangers, and other timbering as may be required to support the sides of the excavation and to prevent any movement which could in any way injure the sewers, diminish the necessary width of the excavation or otherwise injure or delay the work or endanger adjacent pavements, buildings, sewers, pipes, drains, conduits or other structures, or the lives or workmen employed thereon.

B. The Owner may direct that sheeting in the trench be cut off at any specified elevation and in no case without permission shall timber be left in the ground above and elevation 18 inches below the surface of the ground.

C. All timber which may not be left in place under the foregoing provisions of this Specification shall be removed in such manner as not to endanger adjacent pavements, structures or property, or to cause movement of the pipe or endanger the structure built in the excavation from which the timber of sheeting is being removed or adjacent thereto. All voids left by withdrawal of sheeting shall be immediately refilled with sand or fine

earth by ramming with tools especially adapted to that purpose, by watering, or otherwise as may be directed by the Owner.

10. LAYING PIPE

A. The pipelines shall be constructed of such sizes and laid accurately to such lines and grade as are shown in the approved plans. Pipe material shall meet the requirements of the Material Specifications. Branches, fittings, and specials shall be provided, and when not to be immediately used shall be closed with earthenware or precast concrete stoppers sealed in place with bituminous mastic. When immediate use is to be made of them, they may be closed with a plywood stopper. The sewer at the end of the day's laying shall be closed with dirt-tight temporary stopper.

B. The interior of the sewers shall, as the work progresses, be cleared of all dirt, cement and superfluous materials of every description. On all diameter sewers, an approved swab or drag shall be kept in the pipeline and pulled forward past each joint immediately after its completion.

C. Variance from established line and grade shall not exceed 1/2 inch, provided that any such variation does not result in a level or reverse sloping invert; provided also, that variation in the invert elevation between adjoining ends of pipe due to non-concentricity of joining surface and pipe interior surfaces, does not exceed 1/4 inch maximum.

D. Unless otherwise permitted, at least four finished joints shall be left exposed for inspection throughout the working day, and any and all sections of pipe laid shall be made accessible for inspection at any time while the work is progressing.

E. Pipe shall not be laid in water. No walking on the pipe will be permitted after they are laid except as may be necessary for backfilling and tamping.

F. Pipe shall be laid true to line and grade shown in the approved plans and shall be firmly supported for its entire length when laid in trench.

11. BACKFILLING FOR TRENCHES

A. GENERAL. When the pipe is laid, the Contractor shall backfill under and around the pipe as specified in "Pipe Bedding." The remainder of the trench shall then be carefully backfilled simultaneously on both sides of the pipe. Broken concrete or pavement, blasted rock and large boulders shall not be used as backfill materials. Any trenches improperly backfilled, or where settlement occurs, shall be repaired as directed by the Owner.

B. BACKFILL IN PAVED AREAS. In areas of existing or proposed pavement or rock surfaces, the entire backfill shall consist of well-graded 1 inch minus crushed limestone. The backfill material shall be compacted to 90% of the Modified Proctor density by an acceptable method to ensure that no pavement settlement of the completed backfill will occur. All areas of existing pavement damaged during construction shall be repaved with 3 inches of Type BP-1 asphaltic pavement and installed in accordance with the latest edition of the Missouri Standard Specifications for Highway Construction. Edges of the existing pavement shall be neatly cut in a straight line, removing all damaged pavement prior to repaving.

C. BACKFILL IN AREAS THAT ARE NOT PAVED. The entire backfill for trenches in these areas shall be compacted to 85% of the Modified Proctor density as directed by the Owner. It is the intent of these Specifications to secure a condition where no further settlement of trenches will occur after backfilling is completed.

D. COMPACTION. Care shall be exercised not to disturb pipe when placing backfill. All backfill or trenches shall be placed in uncompacted lifts not to exceed 8 inches in thickness, and each lift shall be compacted in a manner approved by the Owner.

E. RESPONSIBILITY OF CONTRACTOR FOR BACKFILL SETTLEMENT. The Contractor shall be responsible for the satisfactory compaction of backfill material described. If any trenches or other excavation are found to have settled, they shall be immediately reworked by the Contractor and restored to the specified grades. In addition, the Contractor shall be responsible for all damage or damages, which might result from settlement or backfill made by him on the fulfillment of his Contract within and during the period until the project is completely closed out and all paperwork is approved by MoDOT and accepted by the Owner.

F. FINISH GRADING. The finishing of side slopes, cuts, and fills shall be reasonably smooth uniform surfaces that will merge with the adjacent terrain without noticeable break. Finishing shall be done in accordance with grades shown on the Approved plans and without variations that are readily discernible.

12. IDENTIFICATION TAPE

A. Identification tape shall be 6 inches wide.

1. For nonmetallic utilities or pipes, provide detectable tape.

2. For metallic utilities or pipes, provide detectable or nondetectable tape.

3. The tape shall read "CAUTION BURIED INSTALLATION BELOW" or shall identify the appropriate utility.

B. Place identification tape within the trench backfill at a uniform depth below finish grade.

1. Where the utility or pipe has less than 4-1/2 feet of cover, place tape 1 foot below finished grade.

2. Where the utility or pipe has 4-1/2 feet of cover or more, place tape 2-1/2 feet below finished grade.

13. TESTING OF SEWERS

A. GENERAL. After construction and backfilling are completed and before any services are connected to the sewers, the completed lines shall be tested for leaks and visually checked for straightness of line and cracked pipe. The system or culvert shall have a true grade and line. Actual elevations shall be within 1 inch of the elevations given on the drawings. If any deficiencies in line or grade are found which will be detrimental to the proper functioning of the sewer, the deficiencies shall be corrected. Any damaged or cracked pipe shall be excavated and relayed in a manner satisfactory to the Owner. Any section of sewer, which is found to be leaking, shall be repaired.

B. Cleaning and Testing

1. Visibly inspect and remove all debris and obstructions from storm pipe. Test for infiltration and exfiltration by hydrostatic testing per ASTM C969. Manholes and pipe shall conform to ASTM C969 leakage criteria.

C. Alignment Test

1. After backfill has been placed and compacted to a depth not less than one foot above top of pipe, a visual inspection shall be made by flashing a light between manholes. Any displacement or misalignment of invert shall be corrected.

14. SEWERS NEAR WATER MAINS

A. HORIZONTAL SEPARATION. Whenever possible, sanitary sewers and manholes shall be located at least 10 feet, horizontally, from any water main. When local conditions prevent a lateral separation of 10 feet, a sewer may be laid closer than 10 feet to a water main, provided that the water main is at least 18 inches above the top of the sewer. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, both the water main and sewer must be constructed of mechanical slip-on joint pipe and should be pressure-tested to assure water-tightness before backfilling.

B. VERTICAL SEPARATION. Whenever sanitary sewers or house sewers must cross water mains, the sewer shall be laid at such an elevation that the bottom of the water main is 18 inches above the top of the drain or sewer. A full length of water main pipe shall be centered over the sewer line to be crossed as that the joints will be equally distant from the sewer and as remote there from as possible. This vertical separation shall be maintained for the portion of the water main located within 10 feet, horizontally, of any sewer or drain it crosses.

C. UNUSUAL CONDITIONS. Where conditions prevent the minimum vertical separation set forth above from being maintained, or when it is necessary for the water main to pass under a sewer or drain, the water main shall be laid with mechanical joint cast-iron pipe, and the cast iron pipe shall extend on each side of the crossing to a distance from the sewer of at least 10 feet. In making such a crossing, a full length of water main pipe must be centered over or under the sewer to be crossed, so that the joints will be equal distant from the sewer and as remote there from as possible. The sewer line must also be constructed of cast-iron pipe with slip-on joints until the normal distance from the sewer line to the water main is at least 10 feet.

15. METHOD OF MEASUREMENT

A. Storm Sewer Pipe. The quantity measured shall be the lineal foot of pipe installed and accepted and shall include excavation, backfill and compaction as specified in this section. Rock Excavation shall be measured and paid for as specified under Section 2300 Earthwork.

B. Storm Sewer Structure. The quantity measured shall be the number of structures installed and accepted.

16. PAYMENT

A. These prices shall be full compensation for the execution of the pay items indicated including all material, equipment, labor and incidentals necessary to complete these items, including disposal off site.

B. The preparation and submittal and acceptance of "as built" sewer drawings shall be considered incidental to the project.

C. Sheeting and Bracing. All materials, labor and equipment necessary for this work shall be considered incidental to the cost of the project.

D. Identification Tape. All materials, labor and equipment necessary for this work shall be considered incidental to the cost of the project.

E. All testing shall be considered incidental to the work.

F. Storm Sewer Pipe. Accepted work will be paid for at the contract unit bid price for Storm Sewer. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work.

G. Storm Sewer Structures. Accepted work will be paid for at the contract unit bid price for Storm Sewer Structures and will include all appurtenances to make the unit function as it has been specified. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work.

ITEM: 3000.1a Storm Sewer (15" RCP) – Lineal Foot

ITEM: 3000.1b Storm Sewer (18" RCP) – Lineal Foot

ITEM: 3000.1c Storm Sewer (24" RCP) – Lineal Foot

ITEM: 3000.1d Storm Sewer (72" RCP) – Lineal Foot

ITEM: 3000.2a Storm Sewer (24" RCP Flared End Section) – Each

ITEM: 3000.2b Storm Sewer (72" RCP Flared End Section) – Each

ITEM: 3000.3 Storm Sewer Structure (Curb Inlet) – Each

ITEM: 3000.4 Storm Sewer Structure (Double Curb Inlet) – Each

ITEM: 3000.5 Storm Sewer Structure (Side Intake Curb Inlet) – Each

ITEM: 3000.6 Storm Sewer Structure (Manhole) – Each

ITEM: 3000.7 Storm Sewer Inlet Grate (Curved Vane) – Each

ITEM: 3000.8 Manhole Frame & Cover (With Gasket Seal) – Each

END SECTION 3000

SECTION 3100 – WATER SERVICE PIPING

1. GENERAL

   A. Relocate and reconnect water services as shown on the drawings

2. SUBMITTALS

   A. Comply with requirements of the City of New Haven. Materials specified are those typically used and preferred by the City of New Haven.

3. MATERIALS

   A. HDPE pipe, ¾" in diameter, minimum. Match size of existing service line if larger. Pipe shall be constructed using PE3408/PE3608 resin. Pipe shall be manufactured to prevent ultraviolet (UV) degradation. Pipe shall conform to ASTM D3035 and AWWA C901. 200 psi pressure rating, DR9.

      1. HDPE pressure fittings. Conforming to ASTM D2513. Fittings shall be designed for the type of pipe being connected. All fittings will require steel inserts for polyethylene pipe.

   B. Curb Stops. Ball type valve as manufactured by Ford, Minneapolis pattern, product number B44-333M, or approved equal, with inlet and outlet to match service piping material.

   C. Curb Stop Service Box. As manufactured by Ford, Minneapolis pattern, 1 ½" base with a PS type lid, product number EM2-45-46-36R, or approved equal. Provide steel shut off rod for each Curb Stop Service Box.

   D. Corporation Stops. As manufactured by Ford, product number F600-3, or approved equal, with inlet and outlet to match piping material.

   E. Quarter Bend (90 degree). As manufactured by Ford, product number L-0433-S, or approved equal.

   F. Service Tees. Tees shall be polyethylene and be electro-fused to the water main.

4. SITE PREPARATION

   A. Prepare foundation for buried water service piping as follows:

      1. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation throughout the length of the piping.

      2. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with clean sand or pea gravel to indicated level.

3. Shape bottom of trench to fit bottom of piping. Fill unevenness with tamped sand backfill. Ensure continuous bearing of the pipe barrel on the foundation.

4. Maintain a minimum of 36" of cover over pipe.

B. HDPE pipe. Install with pressure fittings in accordance with manufacturer's specifications. Install in one continuous, full length piece to minimize joints.

C. Provide anchorages for tees, plugs and caps, bends, crosses, valves, and hydrant branches.

D. Hydrostatic Tests. Test at not less than 1-1/2 times working pressure for 2 hours.

1. Increase pressure in 50 psi increments and inspect each joint between increments. Hold at test pressure for 1 hour, decrease to 0 psi. Slowly increase again to test pressure and hold for 1 more hour. Maximum allowable leakage is 2 quarts per hour per 100 joints. Remake leaking joints with new materials and repeat test until leakage is within above limits.

E. Clean and disinfect water distribution as follows:

1. Purge all new water distribution piping systems and parts of existing systems that have been altered, extended, or repaired prior to use.

2. Use the purging and disinfecting procedure proscribed by the authority having jurisdiction.

5. MEASUREMENT

A. Water Service Connections. The quantity measured shall be the number of water services installed and accepted.

6. PAYMENT

A. If there is not quantity shown in the bidding schedule, the work by this section shall be considered as a subsidiary obligation of the Contract covered under the other contract items. Only accepted work will be measured.

B. Payment shall be at the unit price or lump sum price herein indicated. This price shall be full compensation for the execution of they pay items indicated including all material, furnishing equipment, labor, tools, and incidentals necessary to complete these items.

C. Water Service Connections. Payment of water service connections shall be made per service re-connected to the system. This work shall include corporation stops, curb stops, service boxes and covers, piping, fittings, locator wire and all other appurtenances necessary to install the water service.

ITEM: 3100.1 Water Service Connections – Each

END SECTION 3100

SECTION 3150 – WATER DISTRIBUTION SYSTEM

1. GENERAL

   A. The work covered by this Section of the specifications, shall consist of furnishing all previously specified materials with all necessary equipment, machinery, tools, and labor, and performing all work required to install and/or construct the water system extensions or changes with all connections and appurtenances as required; in accordance with all directives or modifications and these specifications, all to be- complete, in place, accepted, and ready for use.

   B. Materials for use at any location in the water distribution system (extensions or existing) shall meet the requirements as set forth in the following Articles under this Section.

   C. The water distribution system shall conform to all state and local codes.

2. MATERIALS

   A. FUSIBLE PLASTIC PIPE Polyethylene (PE) OR Polyvinylchloride (PVC)

   Pipe shall meet all AWWA, ASTM and NSF standards applicable to the type of pipe being used. Pipe shall be rated for pressure applications of at least 200 p.s.i. Pipe sections shall be capable of being joined by a heat fusion process to create a leak proof system. The heat fusion butt joints shall develop at least 95% of the pipe materials base strength. Installation and the fusion process shall be performed by experienced personnel qualified to perform this type of work. Pipe shall be manufactured to prevent ultraviolet (UV) degradation. Pipe may be installed by either the open trench method or by the horizontal directional drill method unless a specific method is noted on the plans.

   B. DUCTILE IRON PIPE

   Ductile iron Pipe, Joints & Fittings: Pipe for use under this heading shall consist of durable, solid, cast iron materials with the matrix being predominately ferrite. This material shall meet the following minimum physical strength requirements of; 60,000 psi tensile, 42,000 psi yield, and ten (10) percent maximum elongation. Each piece of pipe shall have the; weight, thickness, class manufacturer's mark, the year of manufacture, and the letters DI or word "DUCTILE" clearly stamped on the pipe. The pipe materials and construction shall be in accordance with all the requirements of A.S.A. Standard A21.51 (A.W.W.A. C-151). Minimum thickness class shall be Class 52 (Class 53 for flanged pipe). The pipe may be furnished with mechanical, push on, or flange joint ends as required.

   1. Mechanical Joint Pipe & Fittings: Pipe and fittings of this joint type shall be furnished complete with all glands, gaskets, tee head bolts, hex nuts, etc., all properly sized and manufactured for the required pipe and fitting sizes. All nuts, bolts, trim, etc., shall be stainless steel. All fittings and bends shall be constructed of cast or ductile iron. Materials for this service shall consist of durable, solid, cast or ductile iron meeting the minimum physical requirements of 18,000 psi tensile strength and 40,000 psi modulus of rupture. Fittings and bend items shall be designed and tested to permit a minimum working pressure of 250 psi prior to being shipped from the factory. All mechanical joint fittings, bends, and joint accessory materials shall conform to A.S.A. Standard A 2 1.1 0 and A 2 1.1 1. All mechanical joints shall be supplied with retainer gland.

   2. Slip Joint Pipe & Fittings: Slip joint pipe shall be made of ductile iron as previously specified.

The plain end of the pipe shall be tapered to permit easy assembly. The pipe joint gasket shall meet all applicable requirements of A.S.A. Standard A 21.1 0 with joints in accordance with Section 11-2.3 of A.S.A. Standard A 21.1 1. Fittings and bends for use with slip joint piping shall be mechanical joint as previously specified.

3. Flanged Pipe & Fittings: Pipe for use with flanged ends shall be ductile iron as previously specified. Threads for the screwed-on flanges shall be designed in accordance with A.S.A. Standard B 2. 1. Flanges for use shall be faced and drilled in accordance with A.S.A. Standard B 16.1, 125 lb. All joint and joint materials shall be designed and tested for a minimum working pressure of 250 psi. Flanged branch fittings and bends shall meet or exceed the pipe and joint materials requirements. The flange joint bolt circle and drilled holes shall match those of A.S.A. Standard B 16.1, 125 lb. All pipe and fittings shall be furnished with the properly sized; bolts, nuts, and best quality, 1/8 inch thick rubber gaskets.

   The pipe and fittings shall be cement-lined and seal-coated in conformance with A.S.A. Standard A21.4 (A.W.W.A. C-104).

C. RIGID PLASTIC PIPE, JOINTS & FITTINGS

1. C900 PVC WATER MAINS. Water mains may be AWWA conforming C900 DR 18 Class 150. Pipe must bear the seal of approval of the National Sanitation Foundation. Net laying lengths must be 20 feet. Joints shall be integral bell position joints with single rubber gasket, making a pressure tight seal.

2. Slip Joint Pipe: All pipe shall be joined by means of a rubber ring slip joint. Cement weld or glued joints will not be permitted. The slip joint may be formed by either a bell joint or a double ring coupling. The bell joint where used, shall be an integral and homogenous part of the pipe formed by extrusion, with a ring groove for seating the rubber ring gasket. The rubber ring gasket shall be partially split or perforated to permit expansion and contraction with respective increased or decreased pressure in the main. The double ring coupling shall be extruded from pipe materials as previously specified. The coupling interior shall be machined for two square-bottom gaskets and a center tapered stop. The double ring coupling shall be used with plain end pipe on which all ends are tapered to permit pushing the pipe into the coupling. The rubber ring gasket to be used with this coupling shall have a squared seating edge for placement in the coupling grooves. The rubber ring gasket shall also be partially split or perforated to permit expansion and contraction with main pressure changes.

3. Markings: Pipe markings shall include the following, marked continuously down the length:
   a) Manufacturer's name.
   b) Nominal Size.
   c) Class Pressure Rating.
   d) Dimension Ratio Number.
   e) PVC 1120.
   f) NSF Logo.
   g) Identification Code.

4. Lubrication: Lubrication shall be water soluble, non-toxic, be non-objectionable in taste and odor imparted to the fluid, be non-supporting of bacteria growth and have no deteriorating effect on the PVC or rubber gaskets.

5. Pipe Fittings: Branch, bend, transition, or cap type fittings to be used with rigid plastic shall be flanged or mechanical joint cast or ductile iron as previously specified. The fitting item shall be

furnished with and include all; bolts, glands, transition gasket, etc., as required to fully make up the fitting connection joints.

D. VALVES AND VALVE BOXES

Gate Valves:

1. All gate valves shall be non-rising stem, cast-iron body and wedge, bronze trim and stem, resilient seat gate valves conforming to AWWA C509, unless otherwise indicated. The disc shall have a resilient rubber seat ring mounted securely with stainless steel screws. All internal and external parts shall be epoxy coated. The valve stem seal shall be double "O"-ring and shall contain an anti-friction washer. As manufactured by NRS, or approved equal, with MJ by MJ connections. Gate valve shall be rated for 250 psi.

2. Valve ends shall be compatible with the pipe in which they are installed. Tapping valves shall be flanged by mechanical joint and shall be compatible with the specified tapping sleeve.

3. All valves shall open left (counterclockwise) and have an operating nut capable of being turned by a standard gate valve key for buried valves and a handwheel for exposed valves.

4. Each buried valve located within a paved area shall have a cast-iron (bituminous coated) valve box rated for traffic areas.

5. Each buried valve, which is not located within pavement, shall have a valve box consisting of a length of six inch PVC pipe topped with a cast iron valve box cover with a vinyl utility stake.

E. CONCRETE FOR THRUST BLOCKING AND PIPE ENCASEMENT

Concrete to be used for thrust blocking the various bends, tees, valves, fire hydrants, etc. shall consist of ingredients designed to produce a mixture having a 3,500 psi compressive strength at 28 days curing time. The mix shall be as "dry" as possible using only sufficient water to permit mixing and placement. Excessive water will not be permitted. Cement for use shall be the "high early" type to provide initial set as soon as possible. Calcium Chloride shall not be used in the concrete mix. Concrete may be placed and covered with earth fill to prevent freezing during periods of cold weather. However, frozen ingredients will not be permitted for use. All concrete used and placed for this purpose shall be given at least three (3) days curing time before being placed under stress. Installation shall be in strict accordance with the applicable Articles under the following Section of these specifications.

Concrete for pipe encasement shall be of similar mix and design. Placement of the concrete shall be performed in such a manner so as to insure provision of a bed or cradle under the entire pipe length.

Where joints are to be encased, the piping shall be tested prior to concrete placement to maintain a pressure 50 percent greater than normal working pressure for a period of 4 hours. The Contractor shall provide all necessary equipment for conducting the pressure test as directed by the City. All necessary precautions shall be taken to prevent flotation of the piping during or following placement of the encasement materials.

F. PIPE BEDDING

Materials to be used for this purpose shall consist of a well graded, 3/4-inch or less, durable stone

with no deleterious materials. Stone used for this purpose shall consist of materials passing only the 3/4-inch sieve to dust.

G. WATER MAIN TRACER TAPE

Water main tracer tape shall be installed with all water main. The materials to be installed for this purpose shall consist of three (3) inch wide tape made of bonded layer plastic with a metallic foil core. Tape splices shall be knotted to prevent tensile pressure on the splice. The metallic tape shall be colored to contrast with the soil and shall bear an imprint identifying the line below, such as; "Caution, Water Main Buried Below".

Installation of the tracer tape shall be in accordance with applicable Articles of these specifications.

H. WATER MAIN LOCATOR WIRE

Water main locator wire shall be installed with all water main, fittings, and valve installation. The material to be installed for this purpose shall consist of standard electric service wire, a single No. 12 U. L. approved copper wire of the solid type with insulation for 600 volts. Insulated wire for this service shall be provided in standard rolls of not less than five hundred (500) foot lengths.

1. Splices: The splices shall be made inside valve boxes, when possible. Where required, due to roll termination or necessary contact location, the locator wire shall be spliced using wire connectors. The connector opening shall be sealed using a P.V.C. joint sealant material to prevent moisture entrance. After splicing and sealing the connection, the splice location shall be loosely knotted to prevent stress on the connector joint.

2. B. Wire Contact: In order to make use of the wire for water main location purposes, a splice point shall be placed adjacent to a valve box location. The wire shall be brought to the ground surface at these locations so a power source can be connected. The wire shall run outside up along side the valve box in a 2-inch diameter PVC conduit. The splice connector shall be left exposed at the top of the valve box at the wire contact locations. Wire contact points shall be provided at not more than 1,000 foot intervals.

   Water main locator wire installation shall be in accordance with applicable Articles of these specifications. Locator wire shall be tested prior to backfill to ensure proper operation.

I. CONNECTIONS TO PRESENT SYSTEM

Materials to be used for connections to the present water distribution system shall be in accordance with the preceding Articles as applicable, under this Section of these specifications. Installation, testing and sterilization of all items shall be in strict accordance with the following Section of these specifications. Under all circumstances, extreme care must be exercised when connecting to the present system. Foreign materials of whatever nature, must not be permitted to enter the system. All direct connection fittings and valves shall be thoroughly rinsed or washed with a chlorine solution just prior to installation and connection. The chlorine solution to be used shall be mixed as stated in the following Section of the specifications.

The Contractor shall notify the City when system shut-down is required so that proper notification to those affected by the shut-down can be provided. Where system segment shut-down is required, the actual shut-down is not to be done until all connection materials, equipment, and personnel are at the site, and the existing system point of connection has been exposed,

thoroughly cleaned, and prepared for immediate installation of the connection materials. All personnel shall be thoroughly instructed as to the procedure to be followed and ready for work. All connections are then to be made in an efficient manner requiring the least amount of time and maximum amount of care.

J. ROAD CROSSING MATERIALS

State highway and permanent surfaced County road crossings shall be made in strict accordance with the State and County Highway Department rules and regulations. The required excavation permit shall be provided and displayed for each location. At a minimum, materials to be used for all crossings shall meet the following requirements.

1. Water Main: Pipe used for this purpose shall be as previously specified in this Section of these specifications. Fittings for use in the right-of- ways shall be of the joint type as shown and as detailed on the plans. All fittings shall meet the requirements as previously stated in this Section of these specifications.

2. Pipe Encasement: All water main for use at the crossing locations shall be placed in or through an encasement tube consisting of over-sized steel pipe. The encasement tube inside diameter shall be eight (8) inches larger than the inside diameter of the water main to be placed through the encasement tube. Materials to be used for this purpose shall consist of new steel pipe in not less than ten (10) foot lengths. The materials used for the encasement tube construction shall have a minimum yield strength of 35,000 psi. All joint ends shall be cut at 90 degrees to the longitudinal axis of the pipe. Each end shall be beveled and joints shall be butt welded around the entire perimeter of the pipe. The encasement tube shall have a minimum wall thickness of 0.250 inches.

   The annular space between the water main and the encasement tube shall have approved encasement spacers in accordance with applicable articles of these specifications.

   All encasement tube installation shall be in accordance with applicable Articles of these specifications. Concrete for thrust blocking where required, shall be in accordance with applicable Articles of these specifications.

3. Encasement Spacers: Casing spacers shall be projection type, totally non-metallic, constructed of preformed sections of high-density polyethylene. Spacers shall be ISO 9002 certified for strength and quality, and spaced along carrier pipe as shown in the approved plans.

K. FIRE HYDRANTS

Fire and flush hydrants permitted for use on all water system mains shall be approved by the Owner. Each hydrant shall be of the traffic model type and manufactured to withstand a working pressure of 250 psi in full compliance with the A.W.W.A. standard specifications C-502 of the latest revision. Hydrants shall be three way. All hydrants shall have 5 1/4 inch valve openings for mechanical joint connection to minimum six (6) inch water main unless otherwise noted. All hydrants shall be "red" in color.

1. Auxiliary Valves: Fire hydrants are to be installed with auxiliary valves. Valves to be used for this purpose shall meet the requirements as stated in these specifications. If the auxiliary valve is not directly connected to the main tee branch and hydrant, steel rods shall be used to secure the connection. Each valve shall be furnished with a valve box and all joint

accessories as required.

2. All fire hydrants, auxiliary valves shall be furnished and installed in accordance with the plan details, the detail notations, and applicable Articles of these specifications.

3. Hydrants shall be as manufactured by Mueller, Centurion 250 model, or approved equal.

L. PRESSURE REDUCING VALVES (PRV)

Pressure Reducing Valves shall be manufactured by Golden-Anderson, or approved equal, and be located in a traffic rated concrete vault. Concrete vault, concrete lid and steel hatch shall be rated to handle an HS20-44 loading and be of adequate size to allow entry by City personnel and removal of the PRV valve and appurtenances. A pressure gauge shall be installed on both sides of the PRV valve. Vault shall be placed underneath the pavement and the hatch opening shall be configured to conform to the cross slope and grade of the roadway. Shop Drawings will be required to be submitted to the Engineer for approval prior to ordering any equipment.

3. INSTALLATION

A. SITE AND WORK PREPARATION

Prior to starting the various water main route installations, connections, and/or changes as required, the Contractor shall notify the City a minimum of twenty-four (24) hours prior to the start of construction. After so doing, the Contractor shall clear the route of all trees, shrubs, and other objects or materials, which may directly interfere with the construction. All vegetation shall be disposed of off-site or by other means as approved by the Engineer. All other utility companies or organizations shall be notified for location of their respective facilities prior to starting any work. All trees, shrubs, bushes, etc., which will not interfere with the construction shall be protected from damage. Work preparations shall include having all necessary material items, equipment, and an adequate labor force at the site in working condition, and completely instructed and prepared to perform the work to completion as required.

B. DRAINAGE

The Contractor shall control the grading in the vicinity of the pipe trenches so that the surface of the ground will be properly sloped to prevent water from running into the excavated areas. Any water or other liquid wastes which accumulate in the excavated areas shall be promptly removed.

C. TRENCH EXCAVATION

1. General: The Contractor shall perform all excavation necessary for or incidental to the proper installation and construction of the work shown and detailed on the drawings, or as directed by the City. Excavation shall include the removal of trees, shrubs, paving, and undesirable materials. Excavation shall be done along the lines as indicated on the plans and shall be continuous without improper bends or kinks. Trenches shall be of sufficient width to provide a working space on each side of the materials being installed. During excavation, materials to be used for backfill shall be stock piled, in an orderly manner, a sufficient distance from the edge of the excavation to avoid overloading which might cause slides or cave-ins, and in such manner so as not to interfere with public travel whenever possible. The Contractor shall provide all barricades, lights, temporary crossing, warning signs, etc., that may be necessary to protect the public and the work from injury or damage.

2. Depth: Trenches for water main and appurtenances shall be excavated to a sufficient depth to obtain a minimum of forty-two (42) inches of cover over the top of the pipe, except as otherwise required to make taps and connections to existing mains. All excavation shall be made so as to provide a continuous bearing for the barrel of the pipe. Holes of sufficient size shall be excavated to permit ample room for making joints. The bottom of trenches shall be free from rocks, clods, debris, and all other unsuitable materials, and shall consist of properly shaped earth, or tamped granular material as specified in the previous Section of these specifications. The Contractor shall take care not to excavate below grade except to remove undesirable material, or as directed by the City.

3. Rock Excavation: Where rock is encountered in the trenching operation, the excavation shall be carried to a depth of four (4) inches below the pipe bottom depth assuming proper cover as specified under the preceding paragraph. All rock excavation shall be covered under the requirements of SECTION 2300 – EARTHWORK. If no there is no quantity shown in the bidding schedule, this work shall be considered as a subsidiary obligation of the Contract and covered under the other contract items.

   When solid rock is encountered, the Contractor shall not refill any trench until told to do so by the City. Excess materials resulting from the rock excavations shall be spread over or adjacent to the trench area where acceptable, or shall be picked up and removed from the site for disposal at a suitable location. It may also be necessary to place a thin layer of earth over the rock backfill areas. This may be hauled in from a stockpile location. This earth layer must be of sufficient depth to support the growth of vegetation. All loose rock and debris shall be thoroughly cleaned up and disposed of. The excavated areas shall be left in a neat, clean, acceptable condition.

D. HANDLING OF MATERIALS

All pipe, fittings, valves, and other accessories, shall be unloaded, stored rehandled, and installed by methods in such a manner as to insure their final location in a sound and undamaged condition, conforming in all respects to specified requirements. Under no circumstances shall pipe, fittings, valves, or other accessories, be dropped to the ground, or otherwise subjected to possible damage from impact or shock. Such materials shall be loaded by lifting with machine or hoist, or by skidding. Pipe handled on skidways shall not be skidded or rolled against other pipe.

Under all circumstances, all materials for use shall be handled in a workman-like manner, using the necessary manpower and equipment to perform the task in accordance with the manufacturer's recommendations.

1. Protection of Materials, Coatings, and/or Linings: All materials shall be handled in such manner that neither the coatings or the linings are damaged. Hooks for insertion into the ends of the pipes, fittings, valves, and other accessories, shall have broad, well-padded contact surfaces, and shall be of such design and size that uniform support will be provided. Under most circumstances, damage to outside coatings are repairable, and the necessary repairs shall be properly made prior to installation. Damage to interior linings are not considered repairable, and therefore, the damaged item shall be replaced at the Contractor's expense.

2. Handling Materials Into Trench: Proper equipment, tools, facilities, and methods satisfactory to the City, shall be provided and used by the Contractor for the safe handling, of all materials. Fittings, valves, and other accessories shall be carefully lowered into the trench or excavation, piece by piece to protect coatings and linings. Under no circumstances shall any materials be

dropped or dumped into the trench.

E. PIPE LAYING

Laying of the pipe shall commence immediately after the excavation is started, and the Contractor shall use every possible means to keep the completed pipe installation closely behind the trenching. The City may stop the trenching if it appears that the trench is open too far in advance of the pipe laying operation. The Contractor may lay pipe in the best manner adapted to securing speed and good results.

1. Pipe Joints: The Contractor shall have the necessary equipment and tools available for making the joints for the specific materials being used. In accordance with applicable items under the previous Section of these specifications, acceptable joints for the various pipe line and fitting materials are listed as follows:

   Fusible Pipe: Heat fusion butt joints developing at least 95% of the base material strength.

   Cast or Ductile Iron Pipe: Ring or fluid-tite joint with mechanical joint for fittings, valves, and adapters.

   P.V.C. Pipe: Ring-tite joint with necessary transition gaskets for connection to mechanical joint fittings, valves, and adapters.

   For pipes of dissimilar materials, use an approved fitting designed for connecting the different materials.

2. Pipe Joint Adapters: The Contractor shall provide the necessary adapters for all connection changes from ring-tite, slip, or mechanical joint to flanged joint as and where required.

   All pipe spigot ends shall be visibly marked to fully "make-up" the joint. With exception of field cut pipe, all "make-up" marks shall be placed on the pipe at the factory. Field cut pipe shall be marked for full joint depth prior to insertion.

3. Pipe Cutting: Cutting of pipe for closure pieces with installation of valves or fittings, or for any other reason, shall be done in a neat and workman-like manner without damage to the pipe or linings. The cutting operation shall leave a smooth cut end at right angles to the longitudinal axis of the pipe. The exterior surface of the cut end shall be beveled, and the interior surface shall be reamed or filed free of all rough edges and protrusions. All pipe cutting shall be done by saw or mechanical pipe cutters of an approved type. Upon completion of the cutting and trimming operation, the pipe end or ends shall be marked for "make- up" depth. Prior to insertion, the pipe shall be thoroughly cleaned of all foreign materials, including filing and cutting debris.

4. Pipe Alignment: Pipe lines intended to be straight shall be laid straight. Deflections from a straight line shall not exceed the manufacturer's recommendations for joint deflections. Pipe shall be deflected at the joints only. Pipe barrel shall not be deflected. Should the planned or specified alignment require deflections in excess of the maximum recommended for the type of pipe being installed, when using a standard pipe length within the limits of available space, then either shorter pipe sections, or additional bends shall be installed.

5. Thrust Blocking: All mechanical or push-on (ring-tite) joint water main and connection installations, shall be thrust blocked for all bends of 11-¼ degree or more. Thrust blocking

shall be performed at areas where water main changes direction. All bends, tees, crosses, valves, tapping sleeve, and fire hydrant locations shall be thrust blocked in accordance with City requirements. Bearing areas are determined on the basis of bearing against solid undisturbed earth. Concrete to be used for this purpose shall be designed for compressive strength as described in the previous Section of these specifications. All joint and fitting bolts shall remain accessible. Forming for thrust blocks to obtain the necessary bearing area shall be provided as required. All accessible form materials shall be removed from the trench prior to backfill.

Pipe Size	Dead End Tee Or In-Line Valve	90° Elbow	45° Elbow	22-1/2° Elbow
2"	Min.	Min.	Min.	Min.
4"	Min.	Min.	Min.	Min.
6"	Min.	Min.	Min.	Min.
8"	2'3" X 2'3"	2'8" X 2'8"	Min.	Min.
10"	2'10" X 2'10"	3'6" X 3'6"	2'6" X 2'6"	Min.
MINIMUM THRUST BLOCK BEARING TO BE 2 SQ. FT.				

6. Existing Utilities: Existing utilities shall be protected during the construction period. Where necessary, the existing utility shall be removed or temporarily relocated, and replaced upon completion of that phase of the work creating this requirement. Under all circumstances, the utility involved and the parties being affected by the disrupted service shall be notified in advance of the proposed operation. All changes and work shall be subject to the approval and acceptance of the utility involved and the City.

7. Quality: Damaged or unsound pipe, fittings, and accessories of whatever nature shall be rejected and removed from the work. All joints shall be made as previously specified. Each piece of pipe and all fittings, valves, etc., shall be checked and cleared of debris prior to being put in place. All gaskets shall be checked and cleaned of oil, grease, dirt, etc., before being inserted. All bolted joints shall be rechecked for operation and bolt tightness prior to installation. All open ends of pipe, fittings, etc., shall be carefully plugged or sealed at the end of each days work to prevent entrance of animals, water, and other foreign matter. All excavation shall be made to neat line and grade.

   All personnel involved in any way with the work must be made aware of the fact that the work shall result in a first-class, professional job.

8. Water Mains Near Sewers:

   Whenever possible, a water main shall be laid at least ten feet horizontally from any sanitary sewer, storm sewer or manhole. When local conditions prevent a lateral separation of ten feet, a water main may be laid closer than ten feet or (or in the same trench as) a sanitary or storm sewer, provided that the water main is laid in a separate trench, or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. When it is impossible to obtain proper

horizontal and vertical separation as stipulated above, both the water main and sewer must be constructed of mechanical, slip-on, or lead joint cast iron pipe, or pre-stressed concrete cylinder pipe, and should be pressure-tested to assure water-tightness before backfilling.

Whenever water main must cross sanitary sewers, house sewers, or storm drains, the water main shall be laid at such an elevation that the bottom of the water main is 18 inches above the top of the drain or sewer. A full length of water main pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water main located within ten feet horizontally, of any sewer or drain it crosses.

Where conditions prevent the minimum vertical separation set forth above from being maintained, or when it is necessary for the water main to pass under a sewer or drain, the water main shall be laid with mechanical joint cast iron pipe and the cast iron pipe shall extend off each side of the crossing to a distance from the sewer of at least ten (10) feet. In making such a crossing, a full length of water main pipe must be centered over or under the sewer to be crossed, so that the joints will be equi-distant from the sewer and as remote therefrom as possible. The sewer line must also be constructed of cast iron pipe with slip-on, leaded, or mechanical joints until the normal distance from the sewer line to the water main is at least ten feet. Where a water main must cross under a sewer, a vertical separation of 18 inches between the bottom of the sewer and the top of the water main shall be maintained, with adequate support, especially for the larger sized sewer line to prevent them from settling on and breaking the water main. The sewer shall be constructed of cast iron pipe for a distance of ten feet on either side of the crossing, or other suitable protection as approved by the Division of Health shall be provided. Where these conditions cannot be met, the Division of Health shall be consulted as to the precautions to be taken to protect the public water supply.

No water pipe shall pass through, or come into contact with, any part of the sewer or sewer manhole.

F. WATER MAIN TRACER TAPE INSTALLATION

The Contractor shall furnish all materials and install the water main tracer tape as specified in the previous Section of these specifications. The three (3) inch wide detectable tape shall be installed directly above the water main locations as the trench backfill progresses, to permit an earth cover of 12 to 18 inches over the tape. The tape material shall be installed in accordance with the manufacturer's recommendations. The tape is to be placed in a manner such that trench backfill settlement will not place an excessive tensile stress on the material.

G. WATER MAIN LOCATOR WIRE INSTALLATION

The Contractor shall furnish all materials and install the water main locator wire as specified under the previous Section of these specifications. The No. 12 insulated wire shall be placed on top of the water main at the bottom of the trench and secured to the water main with electrical tape at ten foot intervals. The wire shall be brought up along side of a valve box. The wire shall be spliced at these locations using a standard plastic or rubberized wire connector. This will permit placing a power source on the wire for both directions in order to use same for locating the water main. The wire shall be wired to the valve box or post to retain its location. Where intermediate splices are required, the wire connector opening shall be sealed using a P.V.C. joint sealant material to prevent moisture from entering the connection. The wire shall be loosely knotted at each splice location to prevent direct stress on the connection. The wire shall be laid slack in the trench so

same will not be subject tensile stress as the trench is being backfilled.

H. VALVE INSTALLATION

Prior to installation, all valves shall be checked for bolt tightness and operation. All foreign matter, dirt, and debris, shall be removed from inside the valve body. The valve gate and guide shall be cleaned free of grease and dirt. After thoroughly cleaning and checking the valve for operation, the valve gate shall be closed, and the valve shall be installed in place. Following placement and connection to both sides of the valve, excavation for the valve bearing thrust block shall be made. The thrust block shall then be poured of concrete, in accordance with the previous Section of these specifications. The valve holding clamps, No. 4 reinforcing bars, shall then be placed over the valve with embedment in the concrete thrust block.

Following initial set of the concrete, the valve box as specified under the previous Section of these specifications shall be placed over the valve body. The valve box shall be set plumb and earth shall be thoroughly tamped around the box to maintain the plumb position. The top of the valve box shall be adjusted for height to the level of the adjacent pavement if in a paved area, or shall be adjusted to stand four (4) inches above ground level, if located in an unpaved area. The lid or cover shall then be placed on the valve box. The valve box may require vertical adjustment from time to time as trench settling occurs. It is intended that upon final project completion, all valve boxes shall be left in a vertical plumb, usable position.

I. WORK ADJACENT TO-AND/OR CROSSING STATE OR COUNTY HIGHWAYS

1. General: All work to be performed within the right-of-way limits of the State and/or County Highways shall be performed in strict accordance with the Highway Department requirements. The Contractor shall obtain the necessary permits for all work prior to starting any construction. All permits must be displayed as required. The Contractor shall comply with all requirements such as; signals, flagmen, and watchmen; performance of work in such a manner so as not to interfere with traffic, highway entrances, highway maintenance, highway drainage, etc., and methods of placing materials, backfill compaction, and all such other requirements, which may differ from or may be in addition to those specified for work other than that within the highway right-of-way limits.

2. Highway Crossings: Highway crossings shall be constructed in accordance with all permit requirements. The Contractor will be held responsible for any and all expense incurred by the Highway Department in protecting the highway while construction is in progress, or as a result of said construction. The Contractor will also be held responsible for all damages to the highway due to operations during construction of the crossings including replacement of damaged pavement. Encasement shall extend from ditch line to ditch line, toe of slope to toe of slope.

   a) Boring or Jacking: The crossing shall be machine bored with simultaneous installation of the encasement. Boring without the concurrent installation of the encasement tube will not be permitted. All joints of the encasement tube shall be welded as specified and the encasement tube shall extend to the required dimensions.

   b) Open Trench Encasement: Water main encasement may be placed in open trench where allowed or permitted. Encasement shall be installed to grade as shown on the plan profile sections. It is recommended that the cut installations be coordinated with the road construction to rough sub- grade. The entire encasement length shall be excavated to sub-grade. The encasement pipe shall then be placed over 4 to 6 inches of 1-inch clean stone.

Following placement, the entire trench shall be backfilled with 1-inch clean stone to the road sub-grade level or to the top of the trench.

c) Backfill: Following completion of the machine bored crossing, all bore pit or other required excavation shall be suitably backfilled to grade. All debris, of whatever nature, shall be picked up and removed from the site. After clean-up, the disturbed area shall be smoothed to grade, seeded, and covered with straw. The entire work area shall be left in an orderly and acceptable condition.

J. TESTING WATER LINES

All newly laid water lines shall be tested prior to flushing and sterilization. Trenches may be backfilled as the pipe and accessories are installed, or where practicable and at the option of the Contractor. Trenches over the joint locations may be left open for visual inspection during tests. Prior to making tests, all air shall be expelled from the lines. If hydrants or blow-offs are not available, suitable taps shall be provided by the Contractor for this purpose at or near the end points of the installation.

1. Hydrostatic Tests: A two (2) hour test shall be made on each segment of the water lines between end points at a test pressure of at least 50% in excess of normal maximum operating pressure, not to exceed 200 psi. The test pressure shall be determined by the City and suitable gauges for checking same shall be supplied and connected by the Contractor. A gate valve or pressure relief valve shall be supplied and connected by the Contractor. A gate valve or pressure relief fitting shall be placed at each end of the segment being tested unless otherwise directed.

   Any leaks evident at the surface shall be uncovered, repaired, and/or replaced. All leaking joints shall be tightened, or remade, or replaced, and re-tested. All pipe, fittings, valves, or other accessories found defective under this test shall be removed and replaced at the Contractor's expense.

2. Leakage Test: In the event that the pressure test indicates leakage, a leakage test shall be conducted as follows:

   The Contractor shall furnish the gauge and measuring device for the leakage test, as well as the pump, pipe, connections and all other necessary apparatus, and shall furnish all necessary labor to conduct the test. The duration of each leakage test shall be one hour, and during the test, the piping shall be subjected to a hydrostatic pressure of 1.5 times the working pressure or rated pressure of the pipe, whichever of is greater. No pipe installation will be accepted until the leakage is less than ten (10) gallons per mile of pipe per inch diameter per 24 hours. Should any tests of pipe laid disclose leakage greater than that specified, the Contractor shall, at his own expense, locate and repair the defective joints until the leakage is within the specified allowance.

K. FLUSHING AND STERILIZING WATER LINES

After an acceptable hydrostatic test, the lines shall again be flushed. After flushing the lines, the pressure valve shall be closed, and enough water drained from the segment to permit replacement of a chlorine solution. The chlorine solution shall consist of a powdered chlorine compound such as H.T.H. (calcium hypochlorite 65% available chlorine) thoroughly mixed with water. The chlorine solution shall be poured into the upstream test connection point. The amount of the chlorine compound to be used shall be determined by the City if the Contractor so desires.

The chlorine solution shall yield 50 p.p.m. available chlorine. After pouring the required amount of solution into the water line segment, the connection shall be plugged, and the pressure valve opened. Water shall be flushed through the line until chlorine odor is detected at the opposite end of the installation. At this time, the pressure valve shall be closed and the segment shall be allowed to stand for a period of 24 hours.

Following the 24 hour period, a chlorine residual level of a minimum of 10 p.p.m. must remain in the segment. If an acceptable residual level is determined, the pressure valve shall again be opened and the segment flushed until all traces of chlorine over and above normal line levels have been eliminated.

Should a leak occur during the sterilization procedure, it will be repaired and the sterilization and flushing will be repeated.

Upon successful completion of the testing and sterilization of each water main segment, and prior to placing same in service, the Contractor shall collect and submit standard bacteriological samples for analysis, to a State of Missouri certified laboratory. The collection of the sample must be witnessed by the City. Upon receipt of satisfactory test results, the water main segment may be placed in permanent service. Should the initial treatment fail to result in the condition specified in the proceeding paragraph, the sterilization procedure shall be repeated until such results are obtained.

The following tables are provided for reference purposes. This table shows the amount of chlorine needed to maintain 500 p.p.m. chlorine.

Product	Amount of Compound	Quantity of Water to Add to Make 1% Solution
High Test Calcium Hypo-Chlorite (65-70% Chlorine, HTH Parachloron, etc.)	1 lb.	7.5 gal.
Chlorinated Lime (32-35% Chlorine)	2 lbs.	7.5 gal.
Liquid Laundry Bleach (Purex or Chlorox)	1 gal.	4.25 gal.

Pipe Size (in)	Volume of 100 ft. Length (gal)	Amount Required to Give 50 ppm Chlorine	
		100% Chlorine (lb)	1% Chlorine/Water (gal)
2	16.4	0.0034	1/12
4	65.3	0.0135	1/3
6	146.5	0.0305	3/4
8	261.0	0.054	1 1/3
10	408.0	0.085	2
12	588.7	0.123	3

L. TRENCH BACKFILL

After placing the piping in the trench, the Contractor shall backfill under and around the pipe simultaneously filling and tamping on both sides with sufficient earth to firmly hold the pipe in position. Extreme care must be exercised with the backfill operations to insure that no sizable stones or rocks come into contact with the pipe surfaces. After carefully placing and tamping the initial backfill in place to at least six (6) inches over the top of the pipe barrel, the remaining materials may be pushed into the trench. No boulders, broken pavement, or large pieces of blasted rock shall be used in the trench backfill. Any trench improperly bedded or backfilled shall be excavated, examined, and replaced at the Contractor's expense. All non-usable materials shall be picked up and removed from the site to an acceptable disposal location. Upon completion of the initial backfill, the backfill surface shall be either "jetted" with water or neatly mounded to allow for settlement. As the work progresses and settlement occurs, the trenching surface shall continue to be graded and shaped so as to secure a final condition where no further settlement shall occur.

In areas where pavement or permanent surfacing is removed and is to be replaced, the entire backfill shall be made using a well graded, compacted, 1-inch minus aggregate in accordance with the previous Section of these specifications.

Initial clean-up, in accordance with this Section of these specifications shall occur as the trench backfill operation proceeds. Before final acceptance of the work is made, the Contractor shall travel the lines with the City, and any settlement or unsightly areas shall be repaired or corrected as directed. Upon acceptance, the Contractor shall proceed with the final clean-up, grading, and seeding operation, in accordance with this Section of these specifications.

M. FIRE HYDRANT AND AUXILIARY VALVE INSTALLATION

The fire hydrants, valves, and all connection items shall be furnished and installed by the Contractor. All materials used for this purpose shall be as specified under the previous Section of these specifications. The installation shall include all; excavation as required, installation of the water main tee fitting, auxiliary valve, connection pipe, hydrant, gravel fill, thrust or kick block, backfill, and surface replacement as required. The fire hydrants shall be installed to the proper "bury" depth, to stand in an exactly "plumb" position. Hydrant extension pieces may be used to adjust to proper grade as required. Clean gravel fill as specified and detailed, shall be placed to the proper depth and dimension to provide the necessary "weep" volume for water contained in the hydrant barrel after the hydrant is shut off. Care must be exercised when pouring the hydrant thrust or kick block, to assure that cement paste does not plug or block the hydrant weep hole or the gravel fill under and around the weep hole.

The earth backfill shall be hand tamped around the hydrant base and barrel to assure the plumb position. The hydrants may be braced or wired in place until sufficient settlement has occurred to retain the plumb position. Upon completion, all bracing and debris shall be removed from the site. Each site shall then be thoroughly cleaned-up and restored equal to or better than its original condition. All installation sites shall be left in a neat, clean, acceptable condition.

N. INITIAL CLEAN UP, GRADING, AND REPLACEMENT

The Contractor shall provide the necessary labor and equipment to permit initial clean-up as the water main is being installed. Immediately following trench backfill, all areas disturbed by excavation shall be graded to conform to the adjacent ground levels. Earth shall be neatly mounded over the trench location. All debris, of whatever nature, due to the water main and

service installation, shall be picked up and disposed of. All walks, driveways, roads, streets, etc., shall be replaced to original condition.

O. FINAL CLEAN-UP, FINISH GRADING, SEEDING, AND STRAW

Following completion of the various routes and initial trench settlement, the Contractor shall go over the routes and clean-up all remaining debris. Following completion of the final clean-up, all areas in any way disturbed by the installation, shall be graded to conform to the adjacent ground areas. After final grading, the graded areas shall be sodded.

Upon completion of the final grading and sodding, the Contractor shall locate and paint the tops of all valve boxes the color "blue", and other accessories having covers, so that they are plainly visible for use.

All service boxes for valves, future connection items. etc., shall be firmly in place in a plumb position, ready and usable for the intended service. Following final completion of all items, the Contractor and City shall again go over the various routes to determine final acceptance.

4. METHOD OF MEASUREMENT

A. MEASUREMENT OF QUANTITIES. All materials and items to be paid for on the basis of measurement shall be measured and determined by the Engineer in accordance with the Drawings and Specifications, or as authorized by the Owner.

B. Work or materials involved in lump sum payments shall not be measured, but shall be paid as described in the Project Drawings and Specifications.

C. LIMITATION ON PAY QUANTITIES. Quantities of materials wasted or disposed of in a manner not called for under the Contract, including rejected loads of material not unloaded from vehicles, material rejected after it has been placed, material placed outside of pay lines and material remaining on hand after completion of the work, shall not be paid for and shall not be included in the final pay quantities. No compensation shall be allowed for disposing of rejected or excess material.

D. Water Main (8" Fusible PE, DR 9). The quantity measured shall be the lineal foot of pipe installed and accepted. Rock Excavation shall be measured as specified under Section 2300 Earthwork.

E. Water Valves (8" Gate). The quantity measured shall be the number of water valves installed and accepted and shall include all tools, fittings and connections.

F. New Fire Hydrant Assembly. The quantity measured shall be the number of new fire hydrants installed and accepted.

G. Relocate Fire Hydrant Assembly. The quantity measured shall be the number of relocated fire hydrants installed and accepted.

H. Pressure Reducing Valve and Vault. The quantity measured shall be the number of pressure reducing valve and vaults installed and accepted.

5. PAYMENT

A. If there is not quantity shown in the bidding schedule, the work by this section shall be considered as a subsidiary obligation of the Contract covered under the other contract items. Only accepted work will be measured.

B. Payment shall be at the unit price or lump sum price herein indicated. This price shall be full compensation for the execution of they pay items indicated including all material, furnishing equipment, labor, tools, and incidentals necessary to complete these items.

C. Water Main (8" Fusible PE, DR 9). Accepted work shall be paid for at the contract unit bid price for Water Main (8" Fusible PE, DR 9) and shall include excavation, all fittings and connections, backfill and compaction necessary to install the work as shown in the plans and specifications.. Rock Excavation shall be paid for as specified under Section 2300 Earthwork.

D. Water Valves (8" Gate). Accepted work shall be paid for at the contract unit bid price for Water Valves (8" Gate) and shall include all tools, fittings and connections necessary to install the work as shown in the plans and specifications.

E. New Fire Hydrant Assembly. Accepted work shall be paid for at the contract unit bid price for New Fire Hydrant Assembly and shall include all tools, fittings, connections, joints, concrete thrust blocks, permits and inspections necessary to install the new fire hydrant as shown in the detail section of the plans.

F. Relocate Fire Hydrant Assembly. Accepted work shall be paid for at the contract unit bid price for Relocate Fire Hydrant Assembly and shall include all tools, fittings, connections, joints, concrete thrust blocks, permits and inspections necessary to relocate the fire hydrant as shown in the plans.

G. Pressure Reducing Valve and Vault. Accepted work shall be paid for at the contract unit bid price for Pressure Reducing Valve and Vault and shall include all tools, fittings, connections, joints, concrete thrust blocks, permits and inspections necessary to install the pressure reducing valve and vault as shown in the detail section of the plans.

ITEM: 3150.1 Water Main (8" Fusible PE, DR 9) – Lineal Foot

ITEM: 3150.2 Water Valves (8" Gate) – Each

ITEM: 3150.3 New Fire Hydrant Assembly – Each

ITEM: 3150.4 Relocate Fire Hydrant Assembly – Each

ITEM: 3150.5 Pressure Reducing Valve and Vault – Each

END SECTION 3150

SECTION 3200 - MISCELLANEOUS METALS

1. GENERAL

   A. This section covers the miscellaneous metal products that shall be used on the project.

   B. Products shall be installed per the manufacturer's recommendations and as shown on the plans.

2. NEW SIGNS

   A. This work shall include furnishing and installing all signs as shown on the plans or as directed by the engineer. Signs shall be in accordance with the MUTCD. This work includes all labor, materials, and equipment required to perform this item.

3. RELOCATING SIGNS

   A. Any signs designated to be relocated shall be removed in such a manner as to protect the existing sign and post to the extent that it can be reused in the new location. Any damage caused during the removal process shall be the responsibility of the Contractor and shall be replaced with similar materials at no cost to the Owner.

   B. The Contractor shall store the signs in a safe location until they are ready to reinstall the sign.

   C. If not shown on the plans, the new location of the relocated sign shall be as directed by the Owner's Representative.

4. PEDESTRIAN FENCE

   A. PERFORMANCE REQUIREMENTS

      1. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

         a. Handrails and Top Rails of Guards:

            i. Uniform load of 50 lbs/ ft. applied in any direction.
            ii. Concentrated load of 200 lbs applied in any direction.
            iii. Uniform and concentrated loads need not be assumed to act concurrently.

         b. Infill of Guards:

            i. Concentrated load of 50 lbs applied horizontally on an area of 1 sq. ft.
            ii. Infill load and other loads need not be assumed to act concurrently.

      2. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

   B. SUBMITTALS

1. Product Data: Provide data for railings assembled from standard components, grout, anchoring cement and paint products.

2. Shop Drawings: Include plans, elevations, sections, details and attachments to other work.

3. Samples: For each exposed finish required.

C. PRODUCTS

1. MANUFACTURERS

   a. Subject to compliance with requirements, provide products by Ameristar or preapproved equal.

2. METALS

   a. Brackets, Flanges and Anchors: Same metal and finish as supported rails, unless otherwise indicated.

   b. Steel Handrail:

      i. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).
      ii. Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.
      iii. Plates, Shapes and Bars: ASTM A 36/A 36M.

   c. Fasteners: Provide concealed fasteners unless otherwise indicated.

      i. Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.

   d. Anchors: Provide cast-in-place anchors as shown on the drawings, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488.

   e. Shop Primer for Galvanized steel: Zinc-dust, zinc-oxide primer compatible with finish paint systems.

   f. Grout and Anchoring Cement: Factory-packaged, non-shrink, non-metallic grout complying with ASTM C 1107 or water-resistant, non-shrink, anchoring cement, recommended by manufacturer for exterior use.

3. FABRICATION

   a. General: Fabricate railings to comply with design, dimensions, and details indicated, but not less than that required to support structural loads.

   b. Cut, drill and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove

sharp or rough areas on exposed surfaces.

c. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

i. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
ii. Obtain fusion without undercut or overlap.
iii. Remove flux immediately.
iv. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

d. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings.

e. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

4. FINISHES

a. Galvanized Railings:

i. Hot-dip galvanize steel railings, including hardware, after fabrication.
ii. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
iii. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.

b. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.

c. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with manufactures requirements for shop painting.

i. Color: Black

D. EXECUTION

1. INSTALLATION

a. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

i. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
ii. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
iii. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

b. Corrosion Protection: Coat concealed surfaces that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

c. Anchor posts in concrete as described in the plans and grout annular space.

2. ADJUSTING AND CLEANING

a. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting.

b. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

5. METHOD OF MEASUREMENT

A. Signs. The quantity measured shall be the number of signs installed and accepted.

B. Pedestrian Fence. The quantity measured shall be the lineal feet of pedestrian fence installed and accepted.

6. PAYMENT

A. These prices shall be full compensation for the execution of the pay items indicated including all material, equipment, labor and incidentals necessary to complete these items, including disposal off site.

B. Signs. Accepted work will be paid for at the contract unit bid price for all Signs and shall include all material (signs, fasteners and posts, etc.), equipment, excavation, labor and incidentals necessary for the installation. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work.

C. Pedestrian Fence. Accepted work will be paid for at the contract unit bid price for Pedestrian Fence. If no unit price is included in the contract, the work required to complete the contract, or as directed by the Engineer, will be considered incidental to the work.

ITEM: 3200.1 "Bike" Sign (W11-1) – Each

ITEM: 3200.2 "Share The Road" Sign (W16-1) – Each

ITEM: 3200.3 "Crosswalk" Sign (W11-2) – Each

ITEM: 3200.4 "Ahead" Sign (W16-9p) – Each

ITEM: 3200.5 Pedestrian Fence – Lineal Foot

END SECTION 3200

SECTION 3300 – GAS DISTRIBUTION SYSTEM

1. GENERAL

   A. The work covered by this Section of the specifications, shall consist of furnishing all previously specified materials with all necessary equipment, machinery, tools, and labor, and performing all work required to install and/or construct the gas system extensions or changes with all connections and appurtenances as required; in accordance with all directives or modifications and these specifications, all to be complete, in place, accepted, and ready for use.

   B. All aspects of the gas distribution system shall conform to the federal regulations as outlined in 49 CFR Part 192 and the state regulations as outlined in 4 CSR 240-40. Installation of the gas system shall be by experienced personnel qualified to perform this type of work. The gas distribution system shall conform to all state and local codes.

   C. Anyone working on project must have Operator Qualifications under subpart 49 CFR Part 192.800.

2. SUBMITTALS

   A. Comply with requirements of the Gas Department of the City of New Haven.

   B. Operator Qualifications, Welder Qualifications per API-1104 and drug testing records shall be submitted to the Gas Department along with drug testing records prior to the beginning of work.

3. MATERIALS

   A. PE pipe. Polyethylene Gas Main shall be 2" diameter. Polyethylene Gas Services shall be ¾" diameter. Match size of existing service line, if larger. Pipe shall be constructed using PE2406 resin. Pipe shall be SDR 11. Pipe sections shall be capable of being joined by a heat fusion process to create a leak proof system. The heat fusion butt joints shall develop at least 95% of the pipe materials base strength. Workers performing Plastic Pipe Joining must be in accordance with 49 CFR Part 192.285.

      Pipe shall be manufactured to prevent ultraviolet (UV) degradation. Pipe may be installed by either the open trench method or by the horizontal directional drill method unless a specific method is noted on the plans.

   B. Steel Pipe. Steel Gas Main shall be 4" diameter fusion bonded epoxy coated steel with welded connections. Welders on steel pipe must be qualified in accordance with Section 6 – API 1104, 49 CFR – 192.7.

   C. Excess Flow Valves (EFV). Excess Flow Valves shall be manufactured from HDPE and provide shutoff to the gas system in conditions of excess flow. Excess Flow Valves shall self actuating at a predetermined flow rate and automatically reset when line pressure is equalized. The valves shall be maintenance free and located one foot behind the back of curb. Excess Flow Valves shall be supplied by the Perfection Corporation.

   D. Shut-Off Valves. Shut-Off Valves shall be of polyethylene construction and maintenance

free. Shut-Off Valves shall be supplied by the Perfection Corporation. Shut-Off Valves for the steel pipe shall be welded ball valves.

E. Valve Boxes. Valve Boxes must be designed for "in-street" use and the steel lid must state "GAS".

F. Anodeless Risers. Risers shall be pre-bent and made of coated steel. Inlet and outlet to be compatible with the type of pipe being joined. Risers shall be double sealed. Anodeless Risers shall be supplied by the Perfection Corporation.

G. Service Taps. Mechanical Tapping Tees or Electrofusion Tapping Tees may be used for service line connections to the main. Tapping tees shall be manufactured by the Perfection Corporation. A welded steel tapping tee shall be used when connecting to an epoxy coated steel gas main.

H. Stopple Valves. Stopple valves shall be used to shut down a live gas main to allow for the construction of the new gas system. Stopple Valves and all equipment, materials and labor shall be furnished by the Contractor to complete the job.

I. Fittings and Transitions. When connecting to the existing gas main, a butt fusion process shall be used when connecting polyethylene pipes and a welded connection shall be used when connecting steel pipes. All transitions between dissimilar materials shall use fittings and connections designed for the different materials. Use fittings, connections and transitions as manufactured by the Perfection Corporation.

4. SITE PREPARATION

A. Prepare foundation for buried gas service piping as follows:

1. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation throughout the length of the piping.

2. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with clean sand or screenings to indicated level.

3. Shape bottom of trench to fit bottom of piping. Fill unevenness with tamped sand backfill. Ensure continuous bearing of the pipe barrel on the foundation.

B. HDPE pipe. Install with pressure fittings in accordance with the manufacturer's and City of New Haven's Gas Department standards. Install in one continuous, full length piece to minimize joints.

C. Installation. String pipe, weld joints, jeep, wrap holidays, and pressure/leak test system. Stop, cap and tap existing pipe. Purge and cap pipe to be abandoned. Tie new pipe into existing pipe, tap, soap test and coat welds. Jeep new pipe prior to backfilling and recoat where necessary. Prevent damage to pipe from rocky backfill. Backfill according to the plans and specifications.

D. Provide anchorages for tees, plugs and caps, bends, crosses, and valves.

E. Tests. Pressure testing pipes and services shall be in accordance with 49 CFR Part

192.509 and 49 CFR 192.513 at 500 psi for one hour with either inert gas or air. A recently calibrated Pressure Chart Recorder shall be utilized.

1. Leakage is not allowed. Remake leaking joints with new materials and repeat test until leakage is eliminated.

F. Clean the gas distribution lines as follows:

1. Purge and clean all new gas distribution piping systems and parts of existing systems that have been altered, extended, or repaired prior to use.

2. Use the purging, cleaning and testing procedures proscribed by the authority having jurisdiction.

5. MEASUREMENT

A. Gas Service Connections. The quantity measured shall be the number of gas services installed and accepted. Tie into any existing polyethylene services after the EFV valve. Replace steel services to the locking valve at meter. Run new polyethylene service lines to homes that have no meter, end run with locking valve.

B. Gas Main (2" PE 2406, SDR 11). The quantity measured shall be the lineal foot of 2" gas main installed and accepted.

C. Gas Main (4" Epoxy Coated Steel). The quantity measured shall be the lineal foot of 4" gas main installed and accepted

D. Gas Valves (2" Shutoff). The quantity measured shall be the number of 2" shutoff gas valves installed and accepted.

E. Gas Valves (4" Shutoff). The quantity measured shall be the number of 4" shutoff gas valves installed and accepted.

F. Gas Valves (2" Stopple). The quantity measured shall be the number of 2" stopple gas valves installed and accepted.

G. Gas Valves (4" Stopple). The quantity measured shall be the number of 4" stopple gas valves installed and accepted.

6. PAYMENT

A. If there is not quantity shown in the bidding schedule, the work by this section shall be considered as a subsidiary obligation of the Contract covered under the other contract items. Only accepted work will be measured.

B. Payment shall be at the unit price or lump sum price herein indicated. This price shall be full compensation for the execution of they pay items indicated including all material, furnishing equipment, labor, tools, and incidentals necessary to complete these items.

C. Gas Service Connections. Payment of gas service connections shall be made per service connected to the system. Gas Service Connections shall include piping,

mechanical tapping tees, excess flow valves, anodeless risers, locking valves and all necessary fittings, transitions and connections necessary to replace the service line from the main to the meter.

D. Gas Main (2" PE 2406, SDR 11). Accepted work shall be paid for at the contract unit bid price for Gas Main (2" PE 2406, SDR 11) and shall include excavation, all fittings and connections, backfill and compaction necessary to install the work as shown in the plans and specifications. Rock Excavation shall be paid for as specified under Section 2300 Earthwork.

E. Gas Main (4" Epoxy Coated Steel). Accepted work shall be paid for at the contract unit bid price for Gas Main (Gas Main (4" Epoxy Coated Steel) and shall include excavation, all fittings and connections, backfill and compaction necessary to install the work as shown in the plans and specifications. Rock Excavation shall be paid for as specified under Section 2300 Earthwork.

F. Gas Valves (2" Shutoff). Accepted work shall be paid for at the contract unit bid price for Gas Valves (2" Shutoff) and shall include all tools, fittings and connections necessary to install the work as shown in the plans and specifications.

G. Gas Valves (4" Shutoff). Accepted work shall be paid for at the contract unit bid price for Gas Valves (4" Shutoff) and shall include all tools, fittings and connections necessary to install the work as shown in the plans and specifications.

H. Gas Valves (2" Stopple). Accepted work shall be paid for at the contract unit bid price for Gas Valves (2" Stopple) and shall include all tools, fittings and connections necessary to install the work as shown in the plans and specifications.

I. Gas Valves (4" Stopple). Accepted work shall be paid for at the contract unit bid price for Gas Valves (4" Stopple) and shall include all tools, fittings and connections necessary to install the work as shown in the plans and specifications.

ITEM: 3300.1 Gas Service Connections – Each

ITEM: 3300.2 Gas Main (2" PE 2406, SDR 11) – Lineal Foot

ITEM: 3300.3 Gas Main (4" Epoxy Coated Steel) – Lineal Foot

ITEM: 3300.4 Gas Valves (2" Shutoff) – Each

ITEM: 3300.5 Gas Valves (4" Shutoff) – Each

ITEM: 3300.6 Gas Valves (2" Stopple) – Each

ITEM: 3300.7 Gas Valves (4" Stopple) – Each

END SECTION 3300

SECTION 3900 – UTILITY ADJUSTMENT

1. GENERAL

   A. Utility Adjustment. This work shall consist of minor adjustment to manhole covers, meter covers, hand holes, inlets/sills and similar items as necessary to bring the utility to the grade of the improvements as shown on the plans.

2. EXECUTION

   A. UTILITY ADJUSTMENT

      1. It shall be the Contractors responsibility to perform, or coordinate, the necessary adjustments to all utilities affected by the work, regardless of the Owner. This work must be performed in a timely manner and delays to the work caused by entities other than the Engineer or Owner will not be cause for additional time to complete the Contract.

      2. Existing frames and covers shall be salvaged and reused if possible. New manhole steps shall be provided as necessary. New adjusting rings (adapters) shall be provided if necessary.

      3. The Owner of the Utility must be made aware of the work and necessary adjustments prior to commencement of the work. The Contractor will contact the Owner to discuss any adjustments to be performed.

      4. Any adjustment performed by the Contractor must meet any standards, specifications or permitting requirements as required by the Owner or Governing Entity involved.

3. MEASUREMENT

   A. Utility Adjustment. This work shall not be measured for payment as it is considered incidental to the contract.

4. PAYMENT

   A. Utility Adjustment. Payment for this work will be considered as incidental to the contract. This work includes furnishing and placing all materials, and shall include, but are not limited to, water meters, water service valves, gas service valves, gas meters, traffic signals, pull boxes, manhole covers, inlets and sewer vents.

END SECTION 3900

SECTION 4000 – ASPHALT PAVEMENT

1. GENERAL

   A. This Section includes: Construction of an asphaltic concrete pavement leveling course and surface overlay. The leveling and surface course shall be asphaltic concrete as specified in the latest version of the "Missouri Standard Specifications for Highway Construction."

2. DESCRIPTION OF WORK

   A. Extent of asphalt paving work is shown on drawings.

3. SUBMITTALS

   A. Material Certificates: Provide copies of materials certificates signed by material producer and Contractor certifying that each material item complies with, or exceed, specified requirements.

4. SITE CONDITIONS

   A. Weather Limitations: Apply tack coat when pavement and ambient temperature is above 45°F (7°C), and when temperature has not been below 35°F (1 C) for 12 hours immediately prior to application. Do not apply when pavement surface is wet or contains an excess of moisture.

   B. Construct asphalt pavement when atmospheric temperature is above 45°F (7°C), and when base is dry.

   C. Grade Control: Establish and maintain required lines and elevations.

5. MATERIALS

   A. General: Use materials as specified in the Plans.

   B. Coarse Aggregate: Sound, durable rock meeting the requirements of the Missouri Standard Specifications for Highway Construction.

   C. Fine Aggregate: Fine, granular material meeting the requirements of the Missouri Standard Specifications for Highway Construction.

   D. Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with the requirements of the Missouri Standard Specifications for Highway Construction.

   E. Asphalt Binder shall be homogenous and free from water, and shall not, on heating, foam below the specified minimum flash point. It shall be prepared by refining crude petroleum by suitable methods. It shall conform to the requirements of the Missouri Standard Specifications for Highway Construction.

   F. Tack Coat: Emulsified asphalt, AASHTO M 140 (ASTM D 997) or M 208 (D 2397); SS-1, SS-1H, CSS-1 or CSS-1H, diluted with one part water to one part emulsified asphalt.

   G. Prime Coat: Cutback asphalt type, AASHTO M-82 (ASTM D2027) MC-30, MC-70 or MC-250.

H. Blotter Aggregate: Washed concrete sand.

I. Pavement Fabric. Pavement Fabric shall be a polypropylene or polyester geotextile, needle punched, nonwoven and heat treated on one side. Fabric shall meet AASHTO M 288-00 and shall conform to the following physical and mechanical properties:

PROPERTY	UNITS	TEST METHOD	MINIMUM AVERAGE ROLL VALUE
Mass Per Unit Area	oz/yd^2	ASTM D 5199-01	4.1
Grab Tensile Strength	lb	ASTM D 4632-91	102
Grab Elongation at Break	%	ASTM D 4632-91	50
Mullen Burst Strength	lb	ASTM D 3786-87	200
Asphalt Retention	gal/yd^2	ASTM D 6140-00	0.21

J. Fabric Tack Coat: Shall be a PG65-22 asphalt or approved equal.

6. ASPHALT AGGREGATE MIXTURE

A. Provide plant-mixed, hot-laid asphalt aggregate mixture complying with the Missouri Standard Specifications for Highway Construction.

7. SURFACE PREPARATION

A. Tack Coat: Apply to contact surfaces of previously constructed or prepared asphalt surfaces abutting or projecting into asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.

1. Allow to dry until at proper condition to receive asphalt pavement.

2. Exercise care in applying asphalt materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

B. Spalled concrete surfaces shall be patched and compacted with asphalt pavement (Type BP-1) prior to applying tack coat.

C. Prime Coat: Apply to contact surfaces of prepared aggregate base. Distribute at rate of 0.20 to 0.50 gal. per sq. yd. of surface.

1. Allow to dry until at proper condition to receive asphalt pavement.

2. Exercise care in applying asphalt materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

D. Fabric Tack Coat: The pressure distributor shall be capable of spraying the fabric tack coat uniformly and at the prescribed application rate. No drilling or skipping shall be permitted. The pressure Distributor shall have a working, calibrated meter that is clearly visible and easily accessible.

The application of the fabric tack coat and pavement fabric shall not begin until the subsurface preparation has been completed and approved by the Engineer.

Placement area to be covered with fabric shall be sprayed uniformly with fabric tack coat at a rate of 0.25 to 0.30 gallons per square yard as directed by the Engineer. Fabric tack coat application shall be accomplished with a pressure distributor for all surfaces except, where the distributor does not have room to operate, hand spraying will be allowed. The width of the spray application shall be no more than six inches wider than the fabric and no less than the fabric width plus two inches unless otherwise approved by the Engineer. The fabric tack coat shall not be applied at a temperature less than 290 degrees F or greater than 325 degrees F.

E. Pavement Fabric: The fabric laying equipment shall be approved by the Engineer. Fabric placement should begin immediately after spraying the fabric tack coat and before it cools or loses its tackiness. Fabric shall be laid with the non heat treated (fuzzy) side down. Every effort must be made to lay the fabric as smoothly as possible to avoid wrinkles. In no case shall wrinkles large enough to cause laps of the fabric be permitted. Such wrinkles shall be cut and laid out flat. The fabric shall be broomed or squeegeed to remove air bubbles and make complete contract with the road surface. If needed, small quantities of blotter aggregate shall be used to blot excess asphalt to facilitate movement of construction equipment over the fabric during the overlay operations. Blotter aggregate shall not be applied until the fabric has been laid. All joints, both longitudinal and transverse, shall be lapped a minimum of one inch and a maximum of three inches. If excessive bleeding through the fabric tack coat occurs, in the opinion of the Engineer, remove fabric and tack coat and reapply.

1. Pavement fabric shall be installed just prior to and on the same day as paving operations. In no case shall installed pavement fabric be left exposed overnight. Any installed pavement fabric left exposed overnight shall be replaced by the Contractor at the Contractor's expense.

8. PLACING MIX

A. General: Place asphalt pavement mixture on dry, prepared surface, spread and strike-off. Spread mixture at minimum temperature of 225°F (107°C). Place only when both air temperature and surface temperature are above 45°F. Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

B. The mixture shall be spread only upon a clean and dry surface, and only when weather conditions are suitable.

C. Paver Placing: Place in strips not less than 9' wide, unless otherwise acceptable to Resident Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. This procedure shall be followed until the full width of the street is complete. The Contractor will not be allowed to place asphalt on other streets until an entire street is complete. The intent is to avoid cold longitudinal joints on the surface course. If Contractor does not pave adjacent to the previous strip, the Contractor will be required to sawcut the longitudinal joint to create a vertical edge. Prior to the adjacent asphalt mat the Contractor shall clean the vertical edge and apply tack coat. This work shall be considered incidental to the contract.

D. Hot Joints: prior to the first pavement strip's temperature dropping below 200 degrees Fahrenheit, the second strip will be required to be laid alongside the first pavement strip. This will create a hot joint, the density on both sides of the joint will be compacted together to form a solid bond. The intent is to avoid cold longitudinal joints; this includes longitudinal and transverse butt joints.

E. Butt Joints: Saw cutting cold transverse butt joints will be required. All saw cuts will be incidental to the contract.

9. ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with hot hand tampers or vibrating plate compactors approved by the Engineer in areas inaccessible to rollers.

C. Breakdown Rolling: Accomplish breakdown or initial rolling using an eight ton to twelve ton three wheel roller or two wheel tandem roller or self propelled pneumatic roller immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot with a pneumatic tire oscillating-type roller developing at least 80 pounds per square inch contact pressure for all wheels. Continue second rolling until mixture has been thoroughly compacted.

E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks with not less than a ten ton, two or three wheel tandem-type roller. Continue rolling until roller marks are eliminated and pavement has attained maximum density.

F. The Contractor shall complete all Rolling activities prior to the asphalt mixture cooling below 185 degrees Fahrenheit.

G. Patching: Remove and replace pavement areas mixed with foreign materials and defective areas. Cut-out such areas and fill with fresh, hot asphalt pavement mixture. Compact by rolling to maximum surface density and smoothness.

H. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

I. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

10. FIELD QUALITY CONTROL

A. General: Test in-place asphalt pavement courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable pavement as directed by Engineer.

B. Compaction testing for in place asphalt density shall be preformed using the Nuclear Density method ASTM D-2950.

11. THICKNESS

A. In-place compacted thickness will not be acceptable if exceeding the following allowable variation from required thickness:

1. Surface Course: 2" nominal thickness, or as otherwise indicated on the plans, with a variance of no more than 1/4", plus or minus, 1-3/4" to 2-1/4".

2. Spot Wedge: thickness as needed, or as otherwise indicated on the plans.

3. Base Course: 3" nominal thickness per pass, or as otherwise indicated on the plans.

12. SURFACE SMOOTHNESS

A. The surface of each layer shall be substantially free from waves or irregularities. The final surface shall not vary from a 10-foot straightedge, applied parallel to the centerline, by more than 1/8 inch. At transverse construction joints, the surface shall not vary from the 10-foot straightedge by more than 1/8 inch. The Profile Index (PRI) shall be no greater than 15 inches per mile, in accordance with the Missouri Standard Specifications for Highway Construction.

B. Check surface areas at intervals as directed by Engineer.

13. MEASUREMENT

A. Tack, Prime, and Fabric Tack Coat. No direct measurement of the tack, prime, or fabric tack coat will be performed.

B. Asphalt Pavement. The quantity measured shall be the number of tons of asphalt in place, compacted and approved by the Engineer.

C. Pavement Fabric. The quantity measured shall be the number of square yards of fabric placed, completed and approved by the Engineer excluding laps and fabric removed as a result of rejection.

14. PAYMENT

A. Payment shall be at the unit prices as herein indicated. These prices shall be full compensation for the execution of pay items indicated including all material, furnishing equipment, labor, tools and incidentals necessary to complete these items.

B. If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered as a subsidiary obligation of the Contractor covered under the other contract items. Only accepted work will be measured.

C. Tack, Prime, and Fabric Tack Coat. No direct payment for these items will be made and will be considered incidental and a subsidiary obligation of the Contractor covered under Asphalt Pavement.

D. Asphalt Pavement (BP-1) (2" Surface Course, Echelon Paving). Payment shall be at the unit

price per ton of asphalt placed which shall be full compensation for furnishing and placing all materials.

E. Asphalt Pavement (Bituminous Base) (Base Course) (3" Lifts) Payment shall be at the unit price per ton of asphalt placed which shall be full compensation for furnishing and placing all materials.

F. Pavement Fabric. Payment shall be at the unit price per square yard of fabric placed which shall be full compensation for furnishing and placing all materials.

ITEM: 4000.1 Asphalt Pavement (BP-1)
(Surface Course) (2") (Echelon Paving) – Ton

ITEM: 4000.2 Asphalt Pavement (Bituminous Base)
(Base Course) (3" Lifts) – Ton

ITEM: 4000.3 Asphalt Driveway, 5" (BP-1) – Square Foot

END SECTION 4000

SECTION 5000 - PORTLAND CEMENT CONCRETE

1. GENERAL

   A. This Section includes the installation of concrete roadways, sidewalks (including curb ramps), driveways and curb and gutter sections and all associated reinforcing steel and welded wire fabric. The Work shall be accomplished in accordance with these Specifications and the applicable drawings.

2. SUMMARY

   A. The extent of Portland Cement Concrete paving is shown on drawings.

   B. Concrete and related materials are specified herein.

3. SUBMITTALS

   A. Provide samples, manufacturer's product data, test reports, and materials' certifications as required in referenced sections for concrete and joint fillers and sealers.

   B. For reinforcing steel provide:

      1. Bending lists.

      2. Placing drawings.

      3. Certified Mill Test Reports

4. UTILITIES COVERS

   A. All new curb inlets & manholes in the new sidewalk need to follow the below requirements:

      1. Utility covers, such as manholes and water meters, have a slip resistant top, as much as possible, and meet changes in level criteria.; Lift holes for manhole/utility covers do not have an opening greater than ½". Plugging of holes greater than ½" with a material approved by the engineer is acceptable as long as it is flush with the cover surface;

      2. Surface Level Criteria - There are no height differentials with a lip greater than ¼" in height.

      3. Exceptions, a height differential between ¼" and 1/2'" is acceptable if it is beveled at a 2:1 slope, or a height differential greater than ½" is acceptable if it is ramped with a slope of 8.33% or less.

5. FORMS

   A. Forms. Steel, 2 inch dimensional wood or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.

1. Use flexible spring steel forms or laminated boards to form radius bends as required.

2. Form material for the face of the curb shall not have any horizontal joints closer than 7 inches from the top of the curb.

3. Provide stakes and bracing materials as required to hold forms securely in place.

4. Tops of forms shall not depart from grade line more than 1/8 inch when checked with a 10-foot straightedge. Alignment of straight sections shall not vary more than 1/8 inch in 10 feet.

B. Coat forms with a nonstaining form release agent that will not discolor or deface surface of concrete.

6. CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I.

1. Use one brand of cement throughout project, unless otherwise acceptable to Engineer.

B. Aggregate. All aggregate for concrete shall be in accordance with Section 1005 of the Missouri Standard Specifications for Highway Construction – 2004 Edition.

C. Water: Potable.

D. Pozzolanic Admixtures: Pozzolanic admixtures or fly ash may not be used or substituted for other elements in the concrete mix.

E. Air-Entraining Admixtures: Air-entraining admixtures shall meet the requirements of ASTM C 260 and shall be added to the mixer in the amount necessary to produce the specified air content. The air-entrainment agent and the water reducer admixture shall be compatible.

F. Water-Reducing Admixtures: Only if approved by the Engineer; water-reducing, set-controlling admixtures shall meet the requirements of ASTM C 494, Type A, water-reducing or Type D, water-reducing and retarding admixtures, and shall be added at the mixer separately from air-entraining admixtures in accordance with the manufacturer's printed instructions.

G. Grout: The grout mixture can be any commercially made product for highway patching made of an epoxy base. The grout shall be compatible with concrete and steel and capable of binding the dowel with the concrete. The matrix may be extended with hard durable aggregate following the manufacturer's recommendations. The grout shall be discarded after 45 minutes and shall not be retempered. The minimum strength shall be equal to the strength of the concrete pavement. Samples of the grout shall be submitted to the Engineer before grouting begins. Grout shall have a minimum strength of 4,000 psi in 28 days.

H. Liquid-Membrane Forming and Sealing Curing Compound: Comply with ASTM C 309,

Type I, Class A unless otherwise specified by the Engineer. Moisture loss no more than 0.055 gr. /sq. cm. when applied at 150 sq. ft. /gal. Only white-pigmented compound may be used.

I. Joint Sealing: See section 5200 Joint Sealing of these specifications for all joint sealing material.

7. CONCRETE PAVEMENT

A. CONCRETE MIX, DESIGN, AND TESTING

1. Design mix to produce normal-weight concrete consisting of Portland cement, aggregate, water-reducing or set retarding admixture, air-entraining admixture, and water to produce the following properties:

a) Compressive Strength: 3,500 psi, minimum at 7 days, unless otherwise indicated and a minimum of 4,000 psi at 28 days.

b) Air Content: 5-1/2 percent ± 1-1/2 percent.

B. SURFACE PREPARATION

1. Remove loose material from compacted subbase surface immediately before placing concrete.

2. Proof-roll prepared subbase surface to check for unstable areas and need for additional compaction. In areas too small or confined to proof-roll, method shall be approved by the Engineer. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

3. Aggregate Base

a) The material to be used in the aggregate base shall be Type 5 Aggregate, unless otherwise approved by the Owner.

b) Aggregate shall be placed on the subgrade in a layer of uniform thickness 4 inches in compacted depth. The aggregate for each course shall be handled and spread in a manner that will prevent segregation of sizes. A greater layer thickness may be considered if it can be clearly demonstrated that the desired compaction can be obtained for the entire layer thickness.

c) Each layer shall be cleaned of loose and foreign matter before the subsequent layer is placed. Water content of the material shall be maintained during placement. Moisture content shall be maintained at + 2 percent of optimum.

d) The aggregate shall be compacted to not less than 100 percent of the maximum laboratory density as determined by the Standard Proctor Test AASHTO T-99 (ASTM D-698).

e) Top surface of the compacted aggregate base course shall be finished by blading or with automated equipment specially designed for the purpose and rolled with a steel-wheeled roller. Addition of thin layers of fine materials to the top of the base

course to meet the grade will not be acceptable.

f) Surfaces of the completed aggregate base shall not deviate more than ½ inch when tested with a 10 foot straightedge. The completed compacted thickness of any course shall be within plus ¾ inch and minus ½ inch of indicated thickness, and the average thickness shall not be less than the design thickness indicated.

C. FORM CONSTRUCTION

1. Set forms to required grades and lines, braced and secured.

2. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

D. CONCRETE PLACEMENT

1. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase if required to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

2. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with vibrator. Keep vibrator away from joint assemblies, or side forms. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices. Use only square-faced shovels for hand spreading and consolidation.

3. Mixing and concreting operations shall be discontinued when a descending ambient temperature away from artificial heat reaches 40 degrees Fahrenheit and not resumed until an ascending ambient temperature away from artificial heat reaches 35 degrees Fahrenheit. Concrete shall not be placed on subgrade with a temperature less than 35 degrees Fahrenheit. Concrete temperature shall not drop below 65 degrees Fahrenheit for a period of no less than 6 days after placement. Concrete exposed to melting snow during daytime and freezing during nighttime shall be protected from freezing until strength of at least 3500-psi has been attained.

4. If approval has been granted for the Contractor to place the concrete while the ambient temperature is at or lower than 40 degrees Fahrenheit, the Contractor shall take precautionary measures to prevent damage by freezing, such as heating mixing water, heating aggregates, or applying heat directly to the contents of the mixer. Aggregates shall not be heated higher than 150 degrees Fahrenheit, and the temperature of the aggregates and mixing water combined shall be not higher than 100 degrees Fahrenheit, when the cement is added. Unless otherwise authorized, the temperature of the mixed concrete when heating is employed shall not be less than 50 degrees Fahrenheit and not more than 80 degrees Fahrenheit at the time of placement. Cement or fine aggregate containing lumps or crusts of hardened material or frost shall not be used. Concrete shall not be placed upon a frozen subgrade.

5. Use bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

6. Deposit and spread concrete in a continuous operation between transverse joints as far as possible. If interrupted for more than ½ hour, place a construction joint.

7. When adjacent pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained sufficient strength to carry loads without injury.

E. JOINTS

1. All joints shall conform to these specifications and the drawings.

   a) At locations where adjacent longitudinal concrete pavement is designated for replacement, a "Type G" longitudinal construction joint per MoDOT Standard Plans shall be installed. The dowel shall be centered exactly over the joint.

   b) Transverse contraction joints in pavement shall conform to "TYPE G" transverse construction joints per MoDOT Standard Plans. The dowel shall be centered exactly over the joint.

   c) All joints shall be placed at right angles to or radial to the centerline of the pavement unless directed otherwise.

2. Sawed Joints

   a) Premolded strips shall not be used in place of saw cutting joints. All joints shall be sawed according to the following:

   b) Transverse contraction joints in the pavement shall be sawed at fifteen foot (15') intervals, or as directed by the Engineer, with the joint groove cut to the dimensions shown on the drawings. When the groove for poured type transverse joints is cut prior to removal of the forms, the groove shall be cut as close as is practical to the pavement edge; and the resulting crescent-shaped plug in the groove immediately adjacent to the form will be acceptable. Sawing of joints shall commence as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints shall be sawed before shrinkage cracking takes place. In general, all joints shall be sawed in sequence.

3. Structures

   a) Manhole castings within pavement limits shall be boxed as directed by the Engineer in the field and surrounded by ½" white closed cell poly foam.

   b) All catch basins shall be separated from the pavement by ¾ inch premolded expansion joint material extending completely through the curb and pavement slab. Catch basin sills shall be separated from the pavement by ¾ inch premolded expansion joint material extending completely through the pavement.

   c) When a transverse joint falls within five feet of or contacts a drainage or utility structure, the joint shall be moved to either side to permit the joint to fall in the center of round structures or at the corner of rectangular structures and the joint spacing adjusted accordingly, or shall be placed as directed by the Engineer in

the field.

d) Expansion Joints

e) Expansion joints shall be installed between the new pavement and any existing driveways.

f) Expansion joints shall be placed between any building or structure when new pavement is placed adjacent to that building or structure unless directed otherwise.

g) All expansion joint material shall be 8" tall and designed such that the top portion of the material can be removed after the concrete has set to leave a ½" channel that is ready to be sealed. It is the responsibility of the Contractor to remove and properly dispose of the excess material produced due to the formation of this ½" channel. The expansion joint material shall be approved by the Engineer prior to construction beginning.

F. CONCRETE FINISHING

1. After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture. See plans for description of finished surfaces unless otherwise specified.

2. After floating, test surface for trueness with a 10-foot straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

3. Work gutters and back top edge of curb with an edging tool, and round to 1/2-inch radius, unless otherwise indicated. Eliminate tool marks on concrete surface.

4. After completion of floating and when excess moisture or surface sheen has disappeared, complete troweling and finish surface as follows:

   a) Broom finish by drawing a fine-hair broom across concrete surface perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to Engineer.

   b) After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Engineer.

5. Profile Index (PRI) shall be no greater than 30 inches/mile (PRI less than 30) in accordance with the American Concrete Pavement Association Technical Bulletin TB-006. O-C "Construction Smooth Concrete Pavements."

Acceptable Profile Index for Different Facilities

A (1)	Interstate and Rural Primary (tangents and curves > 1500 ft. radius)	---	10
A (2)	Interstate and Rural Primary (curves > 850 ft. < 1500 ft. radius)	---	12
B	Urban Freeways	---	12
C	Ramps/Loops	30	30
D	Secondary Roads and Municipal Streets	30	12

G. CURING

1. Protect and cure finished concrete paving using white pigmented membrane-forming curing and sealing compound applied at a minimum of one gallon per 150 square feet or approved moist-curing methods. Apply per manufacturer's recommendations.

2. Protect pavement from rain by an approved means during the curing process.

H. REPAIRS AND PROTECTIONS

1. Repair or replace broken or defective concrete, as directed by the Engineer.

2. Drill test cores where directed by the Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.

3. Protect concrete from damage until acceptance of work.

4. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just before final inspection.

8. CONCRETE SIDEWALK

A. CONCRETE MIX, DESIGN, AND TESTING

1. Design mix to produce normal-weight concrete consisting of Portland cement, aggregate, water-reducing or set retarding admixture, air-entraining admixture, and water to produce the following properties:

a) Compressive Strength: 4,000 psi, minimum at 28 days, unless otherwise indicated.

b) Air Content: 5-1/2 percent ± 1-1/2 percent.

B. SURFACE PREPARATION

1. Bring the areas on which sidewalks are to be constructed to required grade and compact by sprinkling and rolling or mechanical tamping. As depressions occur, refill with suitable material and recompact until the surface is at the proper grade. The top 6 inches of the subgrade shall be compacted to 90 percent of relative compaction. Remove loose material from compacted subbase surface immediately before placing aggregate base.

2. Aggregate Base

a) The material to be used in the aggregate base shall be Type 5 Aggregate, unless otherwise approved by the Owner.

b) Aggregate shall be placed on the subgrade in a layer of uniform thickness 2 inches in compacted depth. The aggregate shall be handled and spread in a manner that will prevent segregation of sizes.

c) The aggregate base shall be cleaned of loose and foreign matter.

d) The aggregate shall be compacted to not less than 100 percent of the maximum laboratory density as determined by the Standard Proctor Test AASHTO T-99 (ASTM D-698).

e) Top surface of the compacted aggregate base course shall be finished by blading or with automated equipment specially designed for the purpose and compacted using vibratory compaction plates.

f) Surfaces of the completed aggregate base shall not deviate more than ¼ inch when tested with a 4 foot straightedge. The completed compacted thickness of any course shall be within plus or minus ½ inch of indicated thickness, and the average thickness shall not be less than the design thickness indicated.

g) Do not order concrete until the Engineer has approved the compacted subbase and inspected all forms.

C. FORM CONSTRUCTION

1. Sidewalks shall be installed at the width specified in the drawings and shall be four (4") inches thick, with expansion joints at fifteen (15') foot intervals for the full width and depth with control joints at five (5') foot intervals or as directed by the Engineer.

2. Extend expansion joint fillers the full width and depth of the joint, not less than 1/2 inch nor more than 1 inch below finished surface where joint sealer is indicated.

3. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

4. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

D. CONCRETE PLACEMENT

1. Do not place concrete until subbase and forms have been checked by the Engineer for line and grade. Moisten subbase, if required, to provide a uniform dampened condition at time concrete is placed.

2. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with vibrator. Use only square-faced shovels for hand spreading and consolidation.

3. If applicable, match existing texture and finish of pavement being replaced.

4. Mixing and concreting operations shall be discontinued when a descending ambient temperature away from artificial heat reaches 40 degrees Fahrenheit and not resumed until an ascending ambient temperature away from artificial heat reaches 35 degrees Fahrenheit. Concrete shall not be placed on subgrade with a temperature less than 35 degrees Fahrenheit. Concrete temperature shall not drop below 65 degrees Fahrenheit for a period of no less than 6 days after placement. Concrete exposed to melting snow during daytime and freezing during nighttime shall be protected from freezing until strength of at least 3500-psi has been attained.

5. If approval has been granted for the Contractor to place the concrete while the ambient temperature is at or lower than 40 degrees Fahrenheit, the Contractor shall take precautionary measures to prevent damage by freezing, such as heating mixing water, heating aggregates, or applying heat directly to the contents of the mixer. Aggregates shall not be heated higher than 150 degrees Fahrenheit, and the temperature of the aggregates and mixing water combined shall be not higher than 100 degrees Fahrenheit, when the cement is added. Unless otherwise authorized, the temperature of the mixed concrete when heating is employed shall not be less than 50 degrees Fahrenheit and not more than 80 degrees Fahrenheit at the time of placement. Cement or fine aggregate containing lumps or crusts of hardened material or frost shall not be used. Concrete shall not be placed upon a frozen subgrade.

E. CONCRETE FINISHING

All edges and joints shall be finished with an edging tool having a radius of 1/4 inch.

1. Expansion Joints

a) Transverse expansion joints, 1/2-inch thick, shall be installed at a maximum 15-foot interval along sidewalks and where ends of sidewalks abutting buildings, walls, steps, other rigid structures, poles, other protrusions through the sidewalk, or other sidewalks.

b) Transverse expansion joints in sidewalks running parallel and adjacent to concrete curb and gutters shall be installed to match the expansion joint in the curb.

c) Install 1/2-inch thick expansion joints between sidewalks running parallel and adjacent to buildings, walks, other rigid structures, or the back of curb and gutter.

2. Contraction Joints

a) Transverse contraction joints shall be 1/4 inches wide by 1-inch deep weakened plane joints. They shall be straight and at right angles to the surface of the sidewalks.

b) Transverse contraction joints in sidewalks running parallel and adjacent to concrete curb and gutters shall be installed to match the contraction joints location in the curb.

3. Broom the surface with a fine-hair broom at right angles to the length of the sidewalk and tool at all edges, joints, and markings as shown on the drawings. Mark the sidewalks transversely as shown on the drawings with a jointing tool. All sidewalks shall have a magnesium float finish prior to brooming. The Contractor shall prepare a sample of the broom finish for approval by the Engineer prior to the placement of any sidewalks.

4. Contractor shall erect barricades to protect the new concrete sidewalk from traffic. Any markings in the sidewalk of any sort shall be removed or the defective sidewalk removed and replaced by the Contractor at his cost as directed by the Engineer.

5. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by the Engineer.

F. CURING

1. Protect and cure finished concrete paving using white pigmented membrane-forming curing and sealing compound applied at a minimum of one gallon per 150 square feet or approved moist-curing methods. Apply per manufacturer's recommendations.

2. Protect pavement from rain by an approved means during the curing process.

9. CONCRETE APPROACH AND CONCRETE DRIVEWAY

All specifications for the construction of concrete approaches and concrete driveways shall be the same as specified in the CONCRETE SIDEWALKS section of these specifications with the following exceptions:

A. CONCRETE MIX, DESIGN, AND TESTING

1. Design mix to produce normal-weight concrete consisting of Portland cement, aggregate, water-reducing or set retarding admixture, air-entraining admixture, and water to produce the following properties:

2. Compressive Strength: 3,500 psi, minimum at 2 days, unless otherwise indicated

and at least 4,000 psi at 28 days.

B. AGGREGATE BASE

1. Type 5 aggregate base shall be placed on the subgrade in a layer of uniform thickness 3 inches in compacted depth.

C. FORM CONSTRUCTION

1. Approaches and Driveways shall be installed at the width specified in the plans and drawings and shall be seven (7") inches thick, or as shown on the drawings, with expansion joints as directed by the Engineer.

10. CONCRETE CURB AND GUTTER AND CONCRETE RETAINING WALLS

A. CONCRETE MIX, DESIGN, AND TESTING

1. Design mix to produce normal-weight concrete consisting of Portland cement, aggregate, water-reducing or set retarding admixture, air-entraining admixture, and water to produce the following properties:

a) Compressive Strength: 4,000 psi, minimum at 28 days, unless otherwise indicated.

b) Air Content: 5-1/2 percent ± 1-1/2 percent.

B. SURFACE PREPARATION

1. Bring the areas on which curb and gutter or retaining wall is to be constructed to required grade and compact by sprinkling and rolling or mechanical tamping. The top 6 inches of the subgrade shall be compacted to 90 percent of relative compaction. Remove loose material from compacted subbase surface immediately before placing aggregate base.

2. Aggregate Base

a) The material to be used in the aggregate base shall be Type 5 Aggregate, unless otherwise approved by the Owner.

b) Aggregate shall be placed on the subgrade in a layer of uniform thickness 2 inches in compacted depth. The aggregate shall be handled and spread in a manner that will prevent segregation of sizes.

c) The aggregate base shall be cleaned of loose and foreign matter.

d) The aggregate shall be compacted to not less than 100 percent of the maximum laboratory density as determined by the Standard Proctor Test AASHTO T-99 (ASTM D-698).

e) Do not order concrete until the Engineer has approved the compacted subbase and inspected all forms.

C. FORM CONSTRUCTION

1. Construct curb and gutter and retaining walls to line and grade shown or established by the Engineer. Curb and gutter and retaining walls, with or without form liners, shall conform to the details shown on the drawings.

2. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

3. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

D. CONCRETE PLACEMENT

1. Do not place concrete until subbase and forms have been checked by the Engineer for line and grade. Moisten subbase, if required, to provide a uniform dampened condition at time concrete is placed.

2. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with vibrator. Use only square-faced shovels for hand spreading and consolidation.

3. Mixing and concreting operations shall be discontinued when a descending ambient temperature away from artificial heat reaches 40 degrees Fahrenheit and not resumed until an ascending ambient temperature away from artificial heat reaches 35 degrees Fahrenheit. Concrete shall not be placed on subgrade with a temperature less than 35 degrees Fahrenheit. Concrete temperature shall not drop below 65 degrees Fahrenheit for a period of no less than 6 days after placement. Concrete exposed to melting snow during daytime and freezing during nighttime shall be protected from freezing until strength of at least 3500-psi has been attained.

4. If approval has been granted for the Contractor to place the concrete while the ambient temperature is at or lower than 40 degrees Fahrenheit, the Contractor shall take precautionary measures to prevent damage by freezing, such as heating mixing water, heating aggregates, or applying heat directly to the contents of the mixer. Aggregates shall not be heated higher than 150 degrees Fahrenheit, and the temperature of the aggregates and mixing water combined shall be not higher than 100 degrees Fahrenheit, when the cement is added. Unless otherwise authorized, the temperature of the mixed concrete when heating is employed shall not be less than 50 degrees Fahrenheit and not more than 80 degrees Fahrenheit at the time of placement. Cement or fine aggregate containing lumps or crusts of hardened material or frost shall not be used. Concrete shall not be placed upon a frozen subgrade.

E. CONCRETE FINISHING

CONCRETE CURB AND GUTTER

1. Place 1/2-inch thick preformed asphalt-impregnated expansion joints at intervals not exceeding 45 feet and at the beginning and end of curved portions of the

curb, also at connections to existing curbs.

2. All edges and joints shall be finished with an edging tool having a radius of ¼ inch.

3. Place contraction joints in the curb at intervals not exceeding 15 feet. Contraction joints shall be of the open joint type and shall be provided by inserting a thin, oiled steel sheet vertically in the fresh concrete to force coarse aggregate away from the joint. This steel sheet shall be inserted the full depth of the curb and gutter.

4. After initial set has occurred in the concrete and prior to removing the front curb form, the steel sheet shall be removed with a sawing motion. Finish top of curb with a steel trowel and finish edges with a steel edging tool.

5. As soon as the concrete has set sufficiently to support its own weight, remove the front curb form and finish all exposed surfaces. Finish formed face by rubbing with a burlap sack or similar device that will produce a uniformly textured surface, free of form marks, honeycomb, and other defects.

6. All defective concrete shall be removed and replaced at the Contractor's sole expense. Upon completion of the finishing, apply an approved curing compound to exposed surfaces of the curb. If an approved moist curing method is approved, curing shall continue for a minimum of 5 days.

7. Upon completion of the curing period, but not before 7 days has elapsed since pouring the concrete, backfill the curb with earth, free from rocks 2 inches and larger and other foreign material. Tamp backfill firmly in place.

8. Finished curb shall present a uniform appearance for both grade and alignment. Remove any section of curb showing abrupt changes in alignment or grade, or that is more than 1/4 inches away from its location as staked, and construct new curb in its place at the Contractor's sole expense.

CONCRETE RETAINING WALL

1. Retaining walls and form liners shall be constructed as specified in the plans and drawings.

2. Place 1/2" thick preformed fiber expansion joints at intervals not to exceed 75 feet and at steps in the footings. Seal back of joint with joint sealer. Joints shall not extend into the footing.

3. Place keyed contraction joints in the retaining wall at intervals not to exceed 25 feet and at changes in direction of the retaining wall. Joints shall not extend into the footing.

4. 4" plastic waterstops shall be installed across all expansion and contraction joints in the retaining wall.

5. All exposed edges shall be finished with a 3/4" bevel or a 3/8" radius.

6. Form liners, if specified, shall be cut and installed so the pattern is level.

7. If the footings are not stepped and the wall is on a grade greater than 5%, install integral concrete shear lugs, 12" by 12" by the footing width, underneath the footing and transverse to the wall. Shear lugs to be poured monolithically with the footing. Shear lugs shall be placed every 25 feet.

8. If the shear keys, if specified, running the length of the wall, cannot extend the length below the footing shown in the plans due to the presence of rock, drill and grout #5 dowel bars into the rock at 2 feet on center. The dowels shall extend at least 6" into the rock and at least 8" into the footing. Stagger row of dowels within the middle third of the footing.

F. CURING

1. Protect and cure finished concrete using white pigmented membrane-forming curing and sealing compound applied at a minimum of one gallon per 150 square feet or approved moist-curing methods. Apply per manufacturer's recommendations.

2. Protect concrete from rain by an approved means during the curing process.

11. PAVEMENT WIDENING

A. CONCRETE MIX, DESIGN, AND TESTING

1. Design mix to produce normal-weight concrete consisting of Portland cement, aggregate, water-reducing or set retarding admixture, air-entraining admixture, and water to produce the following properties:

a) Compressive Strength: 4,000 psi, minimum at 28 days, unless otherwise indicated.

b) Air Content: 5-1/2 percent ± 1-1/2 percent.

B. SURFACE PREPARATION

1. After completing the clearing, grubbing and stripping process, compact the existing subgrade by rolling or mechanical tamping. Bring the areas on which the pavement widening is to be constructed to the required grade by placing a well graded, 1" clean aggregate in 8" layers and compacting by rolling or mechanical tamping.

2. Concrete Base

a) The material to be used in the concrete base shall be the same type of concrete as specified for concrete pavement, unless otherwise approved by the Engineer. The minimum thickness of the concrete base shall be 8".

b) The top elevation of the concrete base shall be held 2" below final grade to allow for the 2" asphalt overlay.

c) The aggregate base for the widening shall be cleaned of loose and foreign matter.

d) The aggregate base for the widening shall be compacted to not less than 100 percent of the maximum laboratory density as determined by the Standard Proctor Test AASHTO T-99 (ASTM D-698).

d) Do not order concrete until the Engineer has approved the compacted aggregate base and inspected all forms.

C. FORM CONSTRUCTION

1. Construct pavement widening to the line and grade shown or established by the Engineer. Pavement widening shall conform to the details shown on the drawings.

2. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

3. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

D. CONCRETE PLACEMENT:

1. Do not place concrete until subbase and forms have been checked by the Engineer for line and grade. Moisten subbase, if required, to provide a uniform dampened condition at time concrete is placed.

2. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with a vibrator. Use only square-faced shovels for hand spreading and consolidation.

3. Mixing and concreting operations shall be discontinued when a descending ambient temperature away from artificial heat reaches 40 degrees Fahrenheit and not resumed until an ascending ambient temperature away from artificial heat reaches 35 degrees Fahrenheit. Concrete shall not be placed on subgrade with a temperature less than 35 degrees Fahrenheit. Concrete temperature shall not drop below 65 degrees Fahrenheit for a period of no less than 6 days after placement. Concrete exposed to melting snow during daytime and freezing during nighttime shall be protected from freezing until strength of at least 3500-psi has been attained.

4. If approval has been granted for the Contractor to place the concrete while the ambient temperature is at or lower than 40 degrees Fahrenheit, the contractor shall take precautionary measures to prevent damage by freezing, such as heating mixing water, heating aggregates, or applying heat directly to the contents of the mixer. Aggregates shall not be heated higher than 150 degrees Fahrenheit, and the temperature of the aggregates and mixing water combined shall be not higher than 100 degrees Fahrenheit, when the cement is added. Unless otherwise authorized, the temperature of the mixed concrete when heating is employed shall not be less than 50 degrees Fahrenheit and not more than 80 degrees Fahrenheit at the time of placement. Cement or fine aggregate containing lumps or crusts of hardened material or frost shall not be used. Concrete shall not be placed upon a frozen subgrade.

E. CONCRETE FINISHING:

Concrete shall be struck off to the desired elevation with a wooden straight-edge. Surface of the concrete base shall be left in a roughened state to facilitate bonding with the asphalt overlay.

F. CURING

Protect and cure finished concrete base using white pigmented membrane-forming curing and sealing compound applied at a minimum of one gallon per 150 square feet or approved moist-curing methods. Apply per manufacturer's recommendations. Protect concrete base from rain by an approved means during the curing process.

11. REINFORCING STEEL

A. DEFORMED REINFORCING BARS

Deformed billet-steel bars conforming to ASTM A 615, Grade 60, including Supplemental Requirements S1 where welding is not required, or deformed bars conforming to ASTM A 706, Grade 60, including Supplemental Requirements for all reinforcing to be welded. All welding shall be prequalified in accordance with AWS D1.4, Structural Welding Code. Welding not prequalified shall not be used.

B. SPLICES AND MECHANICAL CONNECTIONS

1. Splices shall be lap type or sleeve type with ferrous filler material. No other splice type shall be permitted unless approved in writing by the Engineer.

C. WELDED WIRE FABRIC FOR SINGLE-LAYER REINFORCED SLAB ON GRADE APPLICATIONS

1. Wide spaces standard, flat sheets, structural welded wire fabric with the same steel areas as bars shown; minimum yield strength 75 ksi may be used in lieu of ASTM A 615 reinforcing bars, 60 ksi provided that the panels conform in all respects to ASTM A 185 or A 497 and ACI 318, latest revisions, and provided details approved by the Engineer on reviewed shop drawings. Use flat sheets only.

D. ACCESSORIES

1. Tie wire shall be 16-gauge, black, soft-annealed wire. Bar supports shall be of proper type for intended use. Bar supports in slabs shall be small rectangular concrete blocks made up of the same color and same strength concrete being placed around them. Wire bar supports shall be coated with dielectric material for a minimum distance of 2 inches from the point of contact with the reinforcing bars. Proprietary combination bar clips and spreaders used in walls with reinforcing bars shall be made of corrosion-resistant material. Use concrete supports for reinforcing in concrete placed on grade. Conform to requirements of "Placing Reinforcing Bars" published by CRSI.

E. EXECUTION

1. Conform to "Placing Reinforcing Bars," Recommended Practices, Joint Effort of CRSI-WCRSI, prepared under the direction of the CRSI Committee on Engineering Practice. All bars shall be bent cold.

2. Notify the Engineer when reinforcing is ready for inspection and allow sufficient time for this inspection prior to casting concrete.

3. Sidewalks. Reinforcing steel is only required in areas to bridge over tree trenches and tree trench/electrical conduit trench combinations.

F. DELIVERY AND STORAGE

1. Deliver steel with suitable hauling and handling equipment. Tag steel for easy identification. Store to prevent contact with the ground. The unloading, storing, and handling of bars on the job shall conform to CRSI publication "Placing Reinforcing Bars."

G. PLACING REINFORCING STEEL

1. Cleaning. Clean material reinforcement of any loose mill scale, oil, earth and other contaminants.

2. Straightening and Rebending. Do no straighten or rebend metal reinforcement. Where construction access through reinforcing is a problem, bundling or spacing of bars instead of bending shall be used. Submit details and obtain Engineer's review prior to placing.

3. Protection, Spacing and Positioning. Conform to the current edition of the ACI Standard Building Code Requirements for Reinforced Concrete (ACI 318), reviewed placing drawings, and design drawings.

4. Location Tolerances. Conform to the current edition of "Placing Reinforcing Bars" published by Concrete Reinforcing Steel Institute and to the details and notes on the drawings.

5. Splicing. Conform to drawings and current edition of ACI Code 318. Splices in adjacent bars shall be staggered.

6. Tying Deformed Reinforcing Bars. Conform to the current edition of "Placing Reinforcing Bars" published by Concrete Reinforcing Steel Institute and to the details and notes on the drawings. Mats made up of #3 - #4 - #5 - #6 shall have every other intersection tied in such a manner to hold bars at required spacing.

7. Reinforcement around Openings. Place an equivalent area of steel around the pipe or opening and extend on each side sufficiently to develop bond in each bar. See the details on drawings for bar extension length each side of opening. Where welded wire fabric is used, provide extra reinforcing using fabric or deformed bars.

H. PLACING WELDED WIRE FABRIC

1. Extend fabric to within 2 inches of the edges of the slab, and lap splices at least 1-1/2 courses at the fabric and a minimum of 8 inches. Tie laps and splices securely at ends and at least every 24 inches with 16-gauge black annealed steel wire. Ensure that the welded wire fabric is placed on concrete blocks at the proper distance above the bottom of the slab and supported rigidly equal to that furnished for typical deformed bar reinforced steel. Conform also to current ACI 318 and to the current Manual of Standard Practice, Welded Wire Fabric, by the Wire Reinforcement Institute regarding placement, bends, laps, and other requirements. Fabric that has been rolled shall not be used; use flat sheets only.

I. FIELD BENDING

1. Field bending of reinforcing steel bars is not permitted when rebending will later be required to straighten bars. Rebending of bars at the same place where strain hardening has taken place due to the original bend will damage the bar. Consult with the Engineer prior to any pour if the Contractor foresees a need to work out a solution to prevent field bending.

12. DETECTABLE WARNING DEVICE

A. DESCRIPTION OF WORK

The work shall consist of all labor, tools, equipment and services necessary to satisfactorily complete the installation of detectable/tactile warning surfaces, to comply with ADA guidelines.

B. MATERIALS

Detectable warning devices shall be constructed of dyed precast concrete. Samples shall be provided to the Owner to determine the color to be used. See the plans for further details on location and size of detectable warning devices.

C. INSTALLATION

1. Cast in Place Installation

a) Thickness of concrete under detectable warning devices shall be increased 1". Prepare a well drained and property compacted sub-grade. Leave no puddling, standing water, ice, frost, or mud. Consult contract documents for information on sub-grade and compaction details.

b) Position forms for proper grade, slopes and uniform slab thickness. Consult contract documents for details on reinforcement and joint placement to control cracking.

c) Concrete shall be poured and finished to the proper grade and slope prior to detectable warning devices placement.

d) Consult contract documents for details on areas to receive detectable warning devices. Place detectable warning devices, or approved equal, at bottom of curb

ramps and other blended transitions. Detectable warning devices must have visual contrast with adjacent walking surfaces. Install across full width of ramp a minimum 24" in depth and set back 6 to 8" from face of curb. Provide adequate drainage to prevent the accumulation of water and debris on or at the bottom of ramp.

e) Recess areas to receive detectable warning devices so the device is a finish grade before initial concrete set and level base with wood float to leave an open surface.

f) Pre-dampen back of detectable warning devices, or approved equal, with potable water.

g) Install detectable warning devices immediately in fresh concrete and lightly tap detectable warning devices to grade using a rubber mallet to insure bond and 100% surface contact with square edges of panels butted tightly together. Base of truncated dome should be flush with adjacent surfaces to permit proper drainage and eliminate tripping hazard between surfaces. Tolerance between detectable warning devices and surrounding surfaces is 1/16" maximum. Immediately after placement re-check slope and elevation for proper grade.

h) Place contraction joints at all corners of the detectable warning device to edge of sidewalk.

i) In environments subject to freeze thaw conditions, leave a 3/16" caulk joint between panels and seal with single component polyurethane sealant.

j) Finish surrounding concrete flush with detectable warning devices. Edge around detectable warning devices with 1/8" radius edger and finish in accordance with project specifications.

k) Clean concrete residue off detectable warning devices with a damp hydra sponge to ensure a clean appearance.

l) Fresh concrete surrounding detectable warning devices should be cured in accordance with ACI 308. Use curing compound meeting ASTM C 309. Completely protect detectable warning devices while spraying curing compound.

m) **All** cutting of detectable warning devices required shall be considered incidental.

D. CLEANING

1. Remove all unused material, tools, and equipment. Dispose of properly.

2. If the detectable/tactile surface requires, clean the panels in accordance with manufacturer's cleaning and maintenance guide.

E. PROTECTION

Protect the detectable warning device surface from traffic until desired strength is achieved or until acceptance of the work.

13. MEASUREMENT

A. Concrete Sidewalk (4" Thick). The quantity measured shall be the number of square feet of concrete sidewalk in place, completed and accepted.

B. Concrete Approach (7" Thick). The quantity measured shall be the number of square feet of concrete approach in place, completed and accepted.

C. Concrete Pavement (8"). The quantity measured shall be the number of square yards of 8" thick concrete pavement in place, completed and accepted.

D. Concrete Curb and Gutter. The quantity measured shall be the number of lineal feet of 6" concrete curb and gutter in place, completed and accepted.

E. Concrete Vertical Curb. The quantity measured shall be the number of lineal feet of 6" concrete vertical curb in place, completed and accepted.

F. Detectable Warning Devices. The quantity measured shall be the square foot of detectable warning devices in place, completed and accepted.

G. Measurement of aggregate base, reinforcing steel, saw cutting and joint sealing will not be directly made and shall be considered as part of the concrete work.

14. PAYMENT

A. These prices shall be full compensation for the execution of the pay items indicated including all material, equipment, labor and incidentals necessary to complete these items.

B. Concrete Sidewalk (4" Thick). Payment shall be at the unit price per square foot of concrete placed, completed and accepted by the Engineer and shall be full compensation for furnishing and placing all materials, including joint material for new joints, saw cutting, finishing and curing. In areas where a specific texture or finish or replacement of brick or stone is required to match the existing private sidewalk the Contractor shall match those finishes at no additional cost.

C. Concrete Approach (7" Thick). Payment shall be at the unit price per square foot of concrete placed which shall be full compensation for furnishing and placing all materials, including all dowels, joint material for new joints, saw cutting, finishing and curing.

D. Concrete Pavement (8" Thick). Payment shall be at the unit price per square foot of 8" concrete placed which shall be full compensation for furnishing and placing all materials, including all dowels, joint material for new joints, saw cutting, finishing and curing.

E. Concrete Curb and Gutter. Payment shall be at the unit price per lineal foot of concrete curb and gutter placed, including sealing of joints, and accepted by the Engineer and shall be full compensation for furnishing and placing all materials, including all dowels, joint material for new joints, saw cutting, finishing and curing.

F. Concrete Vertical Curb. Payment shall be at the unit price per lineal foot of concrete

curb placed, including sealing of joints, and accepted by the Engineer and shall be full compensation for furnishing and placing all materials, including all dowels, joint material for new joints, saw cutting, finishing and curing.

G. Detectable Warning Devices. Payment shall be at the unit price per square foot of detectable warning device placed regardless of the number of panels installed for each ramp and shall be full compensation for furnishing and placing all materials, including any protection necessary.

H. All aggregate base required shall be considered incidental to the price of the construction and should be included in the unit price of that item.

I. All joint sealing shall be considered incidental to the price of the construction and should be included in the unit price of that item.

J. All saw cutting shall be considered incidental to the construction.

K. All reinforcing steel work, including the drilling and grouting of dowels, shall be considered incidental to the construction.

L. Drilling and testing of cores to determine if concrete is defective will be considered incidental to the contract with no additional compensation made. Filling of the core hole as stated in Repairs and Protections of this Section will also be considered incidental to the contract.

M. Final cleanup of the surfaces will be considered incidental to the contract.

ITEM: 5000.1 Concrete Sidewalk (4" Thick) – Square Foot

ITEM: 5000.2 Concrete Approach (7" Thick) – Square Foot

ITEM: 5000.3 Concrete Curb And Gutter – Lineal Foot

ITEM: 5000.4 Concrete Vertical Curb – Lineal Foot

ITEM: 5000.5 Concrete Pavement (8" Thick) – Square Foot

ITEM: 5000.6 Detectable Warning Devices – Square Foot

END OF SECTION 5000

SECTION 5200 - JOINT SEALING

1. GENERAL

   A. This section covers the preparation and sealing of joints in the concrete pavement, concrete sidewalk, concrete curb and gutter, and asphalt pavement.

2. MATERIALS

   A. All materials for Joints and Joint Sealing shall be in accordance with Section 1057 of the Missouri Standard Specifications for Highway Construction – 2004 Edition.

   B. Emulsified Asphalt and Aggregate: Per ASTM D6690. The aggregate shall consist of limestone, volcanic ash, sand or other material that will cure to form a hard substance. The combined gradation shall be as follows:

Sieve Size	Percent Passing
No. 4	100
No. 8	90 - 100
No. 16	65 - 90
No. 30	40 - 60
No. 50	25 - 42
No. 100	15 - 30
No. 200	10 - 20

   Up to 3% cement can be added to accelerate the set time. The mixture shall not contain more than 20% natural sand without approval in writing from the Engineer.

   C. The proportions of asphalt emulsion and aggregate shall be determined in the field and may be varied to facilitate construction requirements. Normally, these proportions will be approximately one part asphalt emulsion to five parts aggregate by volume.

3. EQUIPMENT

   A. Joint Cleaning Equipment: The following equipment may be used for cleaning the joints and shall consist of, but not be limited to, the following items:

      1. Concrete Saw: The concrete saw shall be a self-propelled power saw with diamond or abrasive blades designed for sawing hardened concrete, to re-face, widen or deepen existing joints without damaging the sides, bottoms or top edges. Blades may be single for gage blades with one or more blades mounted in tandem for fast cutting. All blades shall be of the proper hardness for the concrete being sawed. If at any time it is demonstrated that abrasive type blades will not cut a smooth and even vertical face of specified width and depth, the Contractor shall then furnish and use diamond blades at no extra cost to the Owner. The saw shall be adequately powered and capable of cutting to the specified width and depth with not more than two passes of the saw through the joints.

2. Sandblasting: Sandblasting equipment shall be standard commercial type capable of effectively "scaling-off" any foreign material which may prevent proper bond of the new sealer. The compressor used for sandblasting shall provide air at a pressure of not less than 90 psig and a minimum volume of 150 cubic feet of air per minute at the nozzle.

3. Air Compressor: The air compressor will be portable and capable of blowing out sand and other objectionable materials from the joints. This equipment will meet the same capacity requirements as specified above for the compressor for the sandblasting equipment. The compressor will be equipped with sufficient hose and adequate capacity and nozzles of proper size and shape for the type and size joint to be cleaned.

4. Vacuum Sweeper: The vacuum pickup sweeper shall be self-propelled and shall be capable of completely removing all loose material, concrete slurry from the joints after sawing, and debris from the pavement surface. A sweeper of adequate capacity or a sufficient number of sweepers shall be provided to maintain the work area.

4. APPLICATION EQUIPMENT FOR HOT POURED SEALER

A. Applicators used for heating and installing the sealing materials shall be of the mobile type and shall be equipped with a double-wall agitator-type kettle (double boiler units) with suitable oil toe extruding device with nozzle or nozzles shaped for insertion in the joints and cracks to be filled, positive temperature devices for controlling the temperature of oil bath and sealer, and a recording thermometer for recording the temperature of the sealer. The applicator unit shall be designed so that the sealer may circulate in the inner kettle when not in use and shall be capable of completely filling the joint with the sealer without formation of voids or entrapped air. The applicator wand shall be insulated all the way to the nozzle and shall be maintained in a satisfactory working condition.

All joints and cracks within the existing pavement limits specified to remain shall be cleaned and sealed upon completion of the milling process. Joints and cracks determined by the Engineer to be in satisfactory condition shall not be milled or sealed.

5. JOINT PREPARATION

A. All joints and cracks will be thoroughly cleaned of all foreign material by sandblasting and other equipment specified but not limited thereto. Cleaning procedures that cause excessive spalling along joints, as determined by the Engineer, will be rejected. Changes in method of cleaning or equipment utilized will be made by the Contractor as required to eliminate spalling. Sandblasting will proceed until the joint surfaces and edges are clean and have etched surfaces. Sandblasting of curb and gutter section shall be for the full width of gutter and continuous length. The joint shall be completely free of dust, dirt, joint sealer, and any other material that might prevent bonding of the new sealer. New curb and curb and gutter shall be routed or sawed to contain sealer. Cracks and joints in pavement to be overlaid shall be cleaned by sandblasting/wire wheel. Cracks and joints over 1-1/2 inch deep may be filled to within 1-1/2 inch of the surface with a suitable non-gassing backer rod material subject to approval of the Engineer.

B. After the sandblasting operation and immediately before the sealer is placed, the joints will be thoroughly blown out by means of an air jet supplied by an air compressor meeting the requirements previously specified. Debris pick-up and disposal will be a continuous process during cleaning operations, and the pavement surface will be thoroughly cleaned immediately prior to sealing operations. This will be accomplished with a vacuum sweeper supplemented with hand brooms and tools, as required. All debris will be disposed of by the Contractor at his expense.

6. JOINT SEALING

A. Sealer shall be placed in dry joints and cracks only. Sealer shall be applied in a continuous steady flow and shall be filled to a depth of no greater than 1/8 inch from the surface. Special care shall be expressed to ensure sealer is placed into the joint or crack reservoir and not over-poured. Areas over-poured will be removed and re-poured at no additional expense to the Owner.

7. PAYMENT

A. Joint Sealing: No direct measurement shall be made for sealing of joints and cracks. This work shall be considered incidental and a subsidiary obligation of the Contractor.

END SECTION 5200

SECTION 6000 - PAVEMENT MARKINGS

1. GENERAL

   A. Description of Work: Provide and install temporary raised pavement markers and final painted markings on the pavement at locations as indicated on the drawings and in accordance with the existing striping conditions.

   B. Standards: All pavement markings shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices and the latest edition of the Missouri Standard Specifications for Highway Construction.

   C. All pavement markings shall be uniform in appearance with crisp, well-defined edges and shall be uniform in width and thickness. Surface distribution of the beads shall be uniform.

   D. Longitudinal pavement marking shall not be placed on longitudinal joints, coordinate with pavement joints and lane widths.

   E. The Contractor will be responsible for the protection of all liquid pavement marking until the pavement marking has reached a no-track state as determined by the Engineer.

   F. Damage to pavement marking as a result of the Contractor's operations, including resurfacing of shoulders, shall be repaired or replaced at the Contractor's expense.

   G. All pavement marking shall be installed in accordance with this specification and all manufacturer's recommendations. Manufacturer's written application or installation instructions shall be provided by the Contractor to the Engineer.

   H. The Engineer will check application rates occasionally during the course of the work.

   I. When surface preparation is required, the area prepared shall be 1 inch wider than the final pavement marking. The method of surface preparation shall not cause structural damage to the pavement and shall meet the approval of the Engineer.

2. PRODUCTS

   A. Paint: The paint shall be a fast drying, epoxy pavement marking material suitable for traffic-bearing surface and shall meet all appropriate sections of the Missouri Standard Specifications for Highway Construction and shall be mixed in accordance with manufacturer's instructions before application. Color shall be white or yellow.

   B. Glass Spheres:

      1. REFRACTIVE INDEX: The reflective glass spheres used for surface application shall have refractive index of not less than 1.50 when tested by the liquid emersion method at twenty-five (25) degrees C.

2. ROUNDNESS: When tested according to ASTM Method D-155, the reflective glass spheres used for surface application shall be true spheres.

3. GRADATION: The glass spheres used for surface applications, shall meet the gradation requirements of AASHTO M-247, Type 1, as follows:

AASHTO M-247 GRADATION

sieve size	percent passing
20	100%
30	75 to 95%
50	15 to 35%
100	0 to 5%

4. DROP-ON BEAD COATING: Moisture Resistance: The glass sphere for surface application shall be resistant to clumping caused by moisture.

3. TEMPORARY PAVEMENT MARKING

The Contractor shall place and maintain preformed short term marking tape or temporary raised pavement markers on pavement undergoing milling, grinding or resurfacing operations. At the completion of each day's operation, the Contractor shall install and maintain temporary pavement marking until permanent pavement marking material has been placed as specified in the contract, at the Contractor's expense. At no time shall more than one mile of roadway behind the operation be unmarked. The Contractor shall ensure all pavement marking, temporary or permanent, has been placed prior to leaving the work zone unattended. Pavement marking shall be replaced in the same configuration as the previously existing pavement marking unless otherwise shown on the plans or directed by the Engineer.

A. Preformed Removable Pavement Marking Tape.

1. Preformed removable pavement marking tape shall be capable of being removed and shall leave no objectionable or misleading image or damage to the pavement after removal.

2 Tape shall have a pre-coated pressure sensitive adhesive requiring no activation procedures. The adhesive shall be resistant to normal roadway chemicals or materials.

3. The tape shall be weather-resistant and show no appreciable fading, lifting or shrinkage during the tape's useful life.

4. Submit a sample of the preformed tape for approval prior to use.

B. Raised Removable Pavement Markers

1. Chip Seal Markers are intended for use as temporary delineation during the paving operation where there is existing painted lane striping. Do not use Chip Seal Markers where there are no existing painted lane markings unless directed

by the Engineer. The markers shall consist of impact-resistant polyurethane plastic with one (1) or two (2) mounted micro-prism retro-reflective elements designed to reflect incident light from one (1) or both directions.

2. Detailed Specifications

a) Dimensional Details

(1) Overall dimensions, base and vertical wall: the base shall be a minimum of 3.5 inches in length and 1.125 inches in width. The vertical wall shall be a minimum of 3.5 inches long with a minimum height of 2.0 inches.

(2) To the bottom of the base shall be affixed a butyl rubber pad with an easily removed protective covering. The adhesive pad shall be approximately 1/8 inch thick, a minimum of 3/4 inch wide, and a minimum of 3.5 inches long.

(3) To the upper portion of the vertical wall shall be affixed a metallized polycarbonate retro-reflective material capable of displaying a minimum of 1,200 candle power per foot candle per square foot at .1° observation angle and a -.4° entrance angle. The retro-reflective element shall be a minimum of 1/4 inch wide and a minimum of 3.5 inches long. The reflective material shall be protected with an easily-removed wall cover of heat-resistant material capable of withstanding and protecting the reflective element from the application of 400° F. asphalt. Stapling or other fastening device used to retain the protective cover shall not perforate the reflective material.

b) Materials

(1) Markers shall be formed of a high-impact-resistant polyurethane plastic capable of presenting a strong white or yellow standard traffic daytime color.

(2) The retro-reflective material shall display either white or yellow as specified. The retro-reflective element shall consist of a micro-prism reflective sheeting made of a U. V. stabilized polycarbonate resin. The yellow markers shall have retro-reflective material on both sides. White markers shall have the retro-reflective material on one (1) side. The markers shall be installed along the center line and each lane line at 40' intervals. The Contractor will be responsible for replacing missing lane markers that he installs in conjunction with his work.

c) Locations

(1) Contractor will be responsible, prior to paving operations, to identify and measure center lines and outside lane lines that will needed to be marked and have sufficient material available.

3. PERMANENT PAVEMENT MARKING

A. Permanent pavement marking shall be in accordance with the contract drawings. The Engineer will only be responsible to spot check the layout before final pavement marking operations.

B. Surface Preparation and Application:

1. MOISTURE: All surfaces shall be inspected for moisture content prior to application of paint. Approximately two (2) square feet of a clear plastic or tar paper shall be laid on the road surface and held in place for fifteen (15) to twenty (20) minutes. The underside of the plastic or tar paper shall then be inspected for a buildup of condensed moisture from the road surface. If the amount of condensed moisture is of a sufficient amount to result in water dripping from the plastic or tar paper when held in a vertical position, paint shall not be applied. This moisture test shall be repeated until the moisture in the road surface has been allowed to evaporate to a level whereby there is not excessive build up of condensed moisture on the underside of the plastic or tar paper.

2. CLEANING: All surfaces shall be clean and dry before paint can be applied. Loose dirt and debris shall be removed by blowing compressed air over the area to be striped.

3. Apply one (1) coat of paint at manufacturer's recommended rate without the addition of thinner, with a maximum of one hundred (100) square feet per gallon. Apply with mechanical equipment to produce uniform lines.

4. MEASUREMENT

A. Temporary Pavement Markings: No direct measurement shall be made for temporary pavement markings. This work shall be considered incidental and a subsidiary obligation of the Contractor. The work will include the removal of all items, regardless of whether the items are shown on the plans or encountered during construction.

B. The quantity measured of pavement marking shall be the lineal feet of paint in place, complete and accepted.

C. The quantity measured of arrows and logos shall be the number of arrows or logos in place, complete and accepted.

5. PAYMENT

A. Payment shall be at the unit or lump sum prices as herein indicated. These prices shall be full compensation for the execution of pay items indicated including all material, furnishing equipment, labor, tools, layout, glass beads, removal of temporary markings and incidentals necessary to complete these items.

B. If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered incidental and a subsidiary obligation of the Contractor.

ITEM: 6000.1 Pavement Marking
4" – White & Yellow – Lineal Foot

ITEM: 6000.2 Pavement Marking
12" – White – Lineal Foot

ITEM: 6000.3 Pavement Marking
24" – White – Lineal Foot

ITEM: 6000.4 Pavement Marking
36" x 120", For Midblock Crosswalk – White – Each

SECTION 9000 - SODDING

1. GENERAL

   A. This section covers the work necessary for the finish grading and lawn establishment, complete, including furnishing and delivery of material, sod, and maintenance of lawns.

   B. All areas disturbed by the Contractor's operations shall be restored by sodding.

2. TOPSOIL

   A. Selected topsoil stripped at the site, properly stored and protected, free from roots, sticks, hard clay, and stones, which will not pass through a 1-inch square opening. Remove existing grass before topsoil is excavated. Provide imported topsoil if required to accomplish the work.

3. IMPORTED TOPSOIL

   A. Imported topsoil shall be a natural, friable soil, representative of productive soils in the vicinity. It shall be obtained from well-drained areas, free from admixture of subsoil and foreign matter, and objects larger than 2 inches in diameter, toxic substances, and any other deleterious material which may be harmful to plant growth and be a hindrance to grading, planting, and maintenance operations.

   B. Topsoil shall meet, or shall be improved to meet, the following mechanical requirements by adding sand and/or peat or manure and incorporating into the topsoil:

Sand	65 percent
Silt	50 percent
Clay	25 percent

   C. Topsoil shall be pulverized prior to being brought to the jobsite. It shall be pulverized to a size of 3/8 inches in diameter as the largest cross section.

4. PH CONTROL

   A. The following amendments shall be included in soils where required by the soils analysis tests:

      1. Soil sulfur
      2. Commercially packaged gypsum
      3. Ground dolomitic limestone

5. LIME

   A. Ground dolomitic limestone not less than 85 percent total carbonates and magnesium, ground so that 50 percent passes 100-mesh sieve and 90 percent 20-mesh sieve. Coarser material will be acceptable provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

6. FERTILIZER

A. Commercial Fertilizer: A complete plant food containing 6 percent nitrogen, 24 percent available phosphoric acid, and 24 percent potash, at a rate of 50 lbs./5,000 sq. ft., conforming to applicable state fertilizer laws, availability of plant nutrients conforming to standards of the Association of Official Agricultural Chemists (AOAC), uniform in composition, dry, free-flowing, and delivered in original, unopened containers bearing manufacturer's guaranteed analysis.

B. Superphosphate: Ammonium phosphate (16-20-0) containing 1.4 percent sulphur; granular, dry, free-flowing delivered in original bags.

7. TEXTURAL SOIL AMENDMENTS

A. Peat: A natural residue formed by decomposition of reeds, sedges, or mosses from freshwater site, free from lumps, roots, and stones, absorbing at least four times its dry weight of water, organic matter not less than 90 percent on a dry weight basis. The maximum moisture content at time of delivery shall be 65 percent by weight.

B. Manure: Well rotted, unleached stable or cattle manure, reasonably free from weed seed and refuse, containing no chemicals or materials harmful to plant life; not less than 4 months nor more than 2 years old. Sawdust or shavings shall not exceed 50 percent content.

C. Sand: As specified in Section 2300, EARTHWORK.

8. SOD

A. Sod shall match existing grass species or shall be a species recommended by an experienced local A.N.A. - certified nursery. Sod to be strongly rooted, weed-disease and pest free and uniform in thickness.

B. All slopes greater than 3:1 shall be pegged to hold sod in place.

9. CHEMICAL SOILS TESTS

A. Have chemical analysis of topsoil performed by the County of State Soil Testing Service to determine lime and fertilizer requirements. Testing frequency shall be one test per 200 cubic yards of used topsoil.

B. Submit one copy of the fertilizer and liming recommendation report to the Engineer within 5 calendar days of commencement of spreading topsoil.

10. MECHANICAL SOILS TEST

A. Have gradation test, as specified in Section 2300, EARTHWORK, performed on the topsoil by a qualified, commercial soils testing laboratory to determine conformance to specified physical properties.

B. Submit one copy of the test results to the Engineer within 5 calendar days of commencement of spreading topsoil.

11. PROJECT SCHEDULE

A. Within 20 calendar days of the date specified for commencement of work, submit to the Engineer a proposed time schedule indicating dates for beginning and completion of the following operations:

1. Delivery and source of materials.
2. Preparation of sod/seed bed.
3. Placing sod/seed.
4. Maintenance.

12. CONSTRUCTION METHODS

A. Preparation of Subgrade. After rough grading is completed and before topsoil is spread, thoroughly scarify ground to a minimum depth of 8 inches with a toothed ripping machine by running in two directions at right angles over the entire surface to be sodded.

B. Spreading of Topsoil. Spread topsoil and textural soil amendments, if required based on the results of the gradation test, over the prepared rough grade using a rubber-tired tractor with grader blade or equivalent not weighing more than 3-1/2 tons. Spread materials to make a finished thickness of a minimum of 4 inches.

C. Liming and Fertilizing

1. Apply lime uniformly with a mechanical spreader to the entire area for grass at the rate determined from soil test.

2. Apply commercial fertilizer uniformly with a mechanical spreader at a rate of 50 pounds per 5,000 square feet, or at rate determined from soil test.

D. Finish Grading

1. Thoroughly mix the applied materials to a depth of 4 inches by running a rototiller over the entire area in two directions at right angles.

2. Rake the top soiled area to a uniform grade so that all areas drain, as indicated on the site plan.

3. Lightly compact with a cultipacker before placing sod.

4. Remove all trash and stones exceeding 1 inch in diameter from area to a depth of 2 inches prior to preparation and placing sod.

E. Sodding

1. Sod shall be cut and laid on site the same day. Only healthy vigorous growing sod is to be laid.

2. Always lay sod across slope and tightly together so as to make a solid area.

3. Roll or firmly but lightly tamp with suitable wooden or metal tamper all new sod sufficiently to set or press sod into underlaying soil.

4. After sodding has been completed, clean up and thoroughly moisten by sprinkler newly sodded areas.

F. Protection

1. Protect newly sodded areas from pedestrian traffic by erecting a fence on 2-inch by 2-inch posts 4 feet high spaced 10 feet on center and strung with a single strand of No. 12-gauge wire marked with cloth strips at 3-foot intervals between posts.

13. INSPECTION FOR ACCEPTANCE

A. Eight weeks after the start of maintenance on the last section of completed lawn, and on written notice from the Contractor, the Engineer will, within 15 days of such written notice, make an inspection to determine if a satisfactory stand has been produced. If a satisfactory stand has not been established, another inspection will be made after written notice from the Contractor that the lawn grass is ready for inspection following the next growing season.

B. If, at the end of the 8-week lawn maintenance period, a satisfactory stand of lawn has not been produced, the Contractor shall renovate and re-sod the lawn according to the original treatment or unsatisfactory portions thereof immediately. If it is not accepted, a complete restoration will be required during the planting season.

C. A satisfactory stand is defined as a lawn grass or section of lawn of 2,000 square feet or larger that has:

1. No bare spots larger than 3 square feet.

2. Not more than 10 percent of total area with bare spots larger than 1 square foot.

3. Not more than 15 percent of total area with bare spots larger than 6 inches square.

14. MEASUREMENT

A. Final measurement of Sodding will be based on the established plan quantity except for authorized changes during construction. The revision or correction will be computed and added to or deducted from the contract quantity. Measurement of the Sodding placed will be made to the nearest square yard.

15. PAYMENT

A. Payment shall be at the unit prices as herein indicated. These prices shall be full compensation for the execution of pay items indicated including all material, furnishing equipment, labor, tools and incidentals necessary to complete these items.

B. Sodding. Payment shall be at the unit price per square yard of sod placed. This price shall be full compensation for all backfilling and finish grading to assure positive drainage and placement of sod.

ITEM: 9000.1 Sodding – Square Yard

END SECTION 9000