MISSOURI DEPARTMENT OF TRANSPORTATION
BID GUIDELINES AND DOCUMENTATION

THIS IS NOT AN ORDER

REQUEST FOR BID

*****THIS DOCUMENT MUST BE RETURNED AS A SEALED BID*****

It is the vendor's responsibility to read and comply with all conditions, specifications, and instructions outlined in this document. This document and any subsequent attachments shall supersede all confirmation forms, receipts, or any other paperwork needed to secure materials, equipment, or services.

TODAY'S DATE: MARCH 13, 2014	**BID DUE BY (DATE AND TIME):** **MARCH 31, 2014 BY 1:00 PM CST**	F.O.B. REQUIREMENTS: DESTINATION (SEE DELIVERY LOCATIONS BELOW)
SPECIFY THE TIME YOU WILL REQUIRE TO MAKE DELIVERY AFTER THE RECEIPT OF ANY ORDERS PLACED.	**BID #: KC-B13-036** **SEALED BID** THIS BID # SHOULD BE REFERENCED ON ALL MAILING LABELS, ENVELOPES, AND ANY OTHER CORRESPONDENCE.	**BUYER NAME:** TONI TERRY SR. GENERAL SERVICES TECHNICIAN PHONE: 816-347-4112 TONI.TERRY@MODOT.MO.GOV

District Mailing Address: Missouri Department of Transportation Kansas City District General Services - Procurement 600 NE Colbern Road Lee's Summit, MO 64086	REFER TO THE ENCLOSED LIST OF FACILITIES IN THE **KANSAS CITY DISTRICT**. ORDERS MAY BE PLACED AS-NEEDED FOR DELIVERY TO ANY OF THE BUILDINGS LISTED HEREIN DURING THE CONTRACT PERIOD **(APRIL 1, 2014 THROUGH OCTOBER 31, 2015)**

REQUIRED SPECIFICATIONS

Materials for the CORRUGATED METAL CULVERT PIPE and CORRUGATED METAL FLARED ARCH PIPE must comply with MoDOT specification # MGS-91-11G and any other provisions outlined in the solicitation documents. The material to be supplied must comply with the requirements of Section 725, 1020 and 1022 of the Missouri Standard Specifications for Highway Construction, Edition of 2011, and any revisions thereto, unless modified by these specifications. Materials must be sourced from vendors on MoDOT's approved list "Qualified Fabricators of Corrugated Metallic-Coated Steel Culvert Pipe, Pipe Arches, and End Sections" (FS-1020 Table 5).

Bidders must submit pricing on all line items listed on page(s) 2, 3, and 4. All line items are listed as quantity of 1, simply so that a per foot/each price may be locked in for any future orders. The unit prices quoted for each line item will be the unit pricing used for any as-needed orders, which may be placed throughout the duration of the contract (through October 31, 2015).

The MoDOT Kansas City District understands standard pipe lengths are 10, 20, 24, and 30 foot joints. We also understand other "odd size" lengths may be ordered up to a maximum of 40 to 50 feet (please list maximum length), but longer lead times may occur when ordering non-standard size pipe lengths. If your standard lengths are different than these, please make note of your standard sizes, and available minimum and maximum lengths below.

_____

_____

_____

PRICING PAGE

Award of this solicitation will be made on an "All Or Nothing" basis using the "lowest and best" principle of award. Since pipe lengths (minimum and maximum footages) may vary slightly from vendor to vendor, we require each bidder to submit their pricing on their "per foot" or "each" rate.

ALL LINE ITEMS ARE LISTED AS QUANTITY OF 1, SIMPLY SO THAT A PER FOOT/EACH PRICE MAY BE LOCKED IN FOR ANY FUTURE ORDERS. THE UNIT PRICES QUOTED FOR EACH LINE ITEM WILL BE THE UNIT PRICING USED FOR ANY AS-NEEDED ORDERS.

Item	Qty.	U/M	DESCRIPTION (including size and/or part #'s)	UNIT PRICE	UNIT PRICE EXTENSION
001	1	LF	Pipe, Corrugated Metal, 12" Diameter	$	$
002	1	EA	Band W/Bolts & Nuts, CMP, 12" Diameter	$	$
003	1	EA	End Sect For Pipe Flared Corrugated Metal 12" Dia.	$	$
004	1	LF	Pipe, Corrugated Metal, 15" Diameter	$	$
005	1	EA	Band W/Bolts & Nuts, CMP, 15" Diameter	$	$
006	1	EA	End Sect For Pipe Flared Corrugated Metal 15" Dia.	$	$
007	1	LF	Pipe, Corrugated Metal, 18" Diameter	$	$
008	1	EA	Band W/Bolts & Nuts, CMP, 18" Diameter	$	$
009	1	EA	End Sect For Pipe Flared Corrugated Metal 18" Dia.	$	$
010	1	LF	Pipe, Corrugated Metal, 21" Diameter	$	$
011	1	EA	Band W/Bolts & Nuts, CMP, 21" Diameter	$	$
012	1	EA	End Sect For Pipe Flared Corrugated Metal 21" Dia.	$	$
013	1	LF	Pipe, Corrugated Metal, 24" Diameter	$	$
014	1	EA	Band W/Bolts & Nuts, CMP, 24" Diameter	$	$
015	1	EA	End Sect For Pipe Flared Corrugated Metal 24" Dia.	$	$
016	1	LF	Pipe, Corrugated Metal, 30" Diameter	$	$
017	1	EA	Band W/Bolts & Nuts, CMP, 30" Diameter	$	$
018	1	EA	End Sect For Pipe Flared Corrugated Metal 30" Dia.	$	$
019	1	LF	Pipe, Corrugated Metal, 36" Diameter	$	$
020	1	EA	Band W/Bolts & Nuts, CMP, 36" Diameter	$	$
021	1	EA	End Sect For Pipe Flared Corrugated Metal 36" Dia.	$	$
022	1	LF	Pipe, Corrugated Metal, 42" Diameter	$	$
023	1	EA	Band W/Bolts & Nuts, CMP, 42" Diameter	$	$

024	1	EA	End Sect For Pipe Flared Corrugated Metal 42" Dia.	$	$
025	1	LF	Pipe, Corrugated Metal, 48” Diameter	$	$
026	1	EA	Band W/Bolts & Nuts, CMP, 48" Diameter	$	$
027	1	EA	End Sect For Pipe Flared Corrugated Metal 48" Dia.	$	$
028	1	LF	Pipe, Corrugated Metal, 54” Diameter	$	$
029	1	EA	Band W/Bolts & Nuts, CMP, 54" Diameter	$	$
030	1	EA	End Sect For Pipe Flared Corrugated Metal 54" Dia.	$	$
031	1	LF	Pipe, Corrugated Metal, 60” Diameter	$	$
032	1	EA	Band W/Bolts & Nuts, CMP, 60" Diameter	$	$
033	1	EA	End Sect For Pipe Flared Corrugated Metal 60" Dia.	$	$
034	1	LF	Pipe, Corrugated Metal, 66” Diameter	$	$
035	1	EA	Band W/Bolts & Nuts, CMP, 66" Diameter	$	$
036	1	EA	End Sect For Pipe Flared Corrugated Metal 66" Dia.	$	$
037	1	LF	Pipe, Corrugated Metal, 72” Diameter	$	$
038	1	EA	Band W/Bolts & Nuts, CMP, 72" Diameter	$	$
039	1	EA	End Sect For Pipe Flared Corrugated Metal 72" Dia.	$	$
040	1	LF	Pipe, Corrugated Metal, 84” Diameter	$	$
041	1	EA	Band W/Bolts & Nuts, CMP, 84" Diameter	$	$
042	1	EA	End Sect For Pipe Flared Corrugated Metal 84" Dia.	$	$
043	1	LF	Pipe, Corrugated Metal 17in X 13in Flared Arch B-1 = 15"Dia	$	$
044	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B1=15" Dia.	$	$
045	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B1=15" Dia.	$	$
046	1	LF	Pipe, Corrugated Metal 21in X 15in Flared Arch B-2 = 18" Dia.	$	$
047	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B2=18" Dia.	$	$
048	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B2=18" Dia.	$	$
049	1	LF	Pipe, Corrugated Metal 24in X 18in Flared Arch B-3 = 21" Dia.	$	$
050	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B3 = 21" Dia.	$	$
051	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B3 = 21" Dia.	$	$
052	1	LF	Pipe, Corrugated Metal 28in X 20in Flared Arch B-4 = 24" Dia.	$	$
053	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B4 = 24" Dia.	$	$

054	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B4 = 24" Dia.	$	$
055	1	LF	Pipe, Corrugated Metal 35in X 24in Flared Arch B-5 = 30" Dia.	$	$
056	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B5 = 30" Dia.	$	$
057	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B5 = 30" Dia.	$	$
058	1	LF	Pipe, Corrugated Metal 42in X 29in Flared Arch B-6 = 36" Dia.	$	$
059	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B6 = 36" Dia.	$	$
060	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B6 = 36" Dia.	$	$
061	1	LF	Pipe, Corrugated Metal 49in X 33in Flared Arch B-7 = 42" Dia.	$	$
062	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B7 = 42" Dia.	$	$
063	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B7 = 42" Dia.	$	$
064	1	LF	Pipe, Corrugated Metal 57in X 38in Flared Arch B-8 = 48" Dia.	$	$
065	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B8 = 48" Dia.	$	$
066	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B8 = 48" Dia.	$	$
067	1	LF	Pipe, Corrugated Metal 64in X 43in Flared Arch B-9 = 54" Dia.	$	$
068	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B9 = 54" Dia.	$	$
069	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B9 = 54" Dia.	$	$
070	1	LF	Pipe, Corrugated Metal 71in X 47in Flared Arch B-10 = 60" Dia.	$	$
071	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B10 = 60" Dia.	$	$
072	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B10=60" Dia.	$	$
073	1	LF	Pipe, Corrugated Metal 77in X 52in Flared Arch B-11 = 66" Dia.	$	$
074	1	EA	Band W/Bolts & Nuts Flared Arch CMP, B11 = 66" Dia.	$	$
075	1	EA	End Sections, Flared Arch Corrugated Metal Pipe B11=66" Dia.	$	$
			TOTAL ORDER EXTENSION:		

Delivery Time (# of workdays / A.R.O. = After Receipt of Order):	A.R.O.
Qualified Materials Supplied By (Manufacturer):	

Company Name:	

Right of Acceptance/Rejection
MoDOT reserves the right to reject any or all bids/quotes/proposals, and to accept or reject any items thereon, and to waive technicalities. In case of error in the extension of prices in the solicitation response, unit prices will govern.

General Performance
This work is to be performed under the general supervision and direction of MoDOT and, if awarded any portion of the work, the Contractor agrees to furnish at his/her own expense all labor and equipment required to complete the work, it being expressly understood that this solicitation is for completed work based upon the price(s) specified according to the scope of work and the requirements and specifications detailed within the solicitation documents.

Invoicing and Payment
Each invoice should be itemized in accordance with items listed on the purchase order and/or contract. The statewide financial management system has been designed to capture certain receipt and payment information. Therefore, each invoice submitted must reference the purchase order number and must be itemized in accordance with items listed on the purchase order. Failure to comply with this requirement may delay processing of invoices for payment. Unless otherwise provided for in the solicitation documents, payment for all equipment, supplies, and/or services required herein shall be made in arrears. The MHTC shall not make any advance deposits. The MHTC assumes no obligation for equipment, supplies, and/or services shipped or provided in excess of the quantity ordered. Authorized quantity is subject to the MHTC's rejection and shall be returned at the Contractor's expense. The MHTC reserves the right to purchase goods and services using the state-purchasing card.

Inspection and Acceptance
No equipment, supplies, and/or services received by MoDOT pursuant to a contract shall be deemed accepted until MoDOT has had reasonable opportunity to inspect said equipment, supplies, and/or services. All equipment, supplies, and/or services which do not comply with the specifications and/or requirements or which are otherwise unacceptable or defective may be rejected. In addition, all equipment, supplies, and/or services which are discovered to be defective or which do not conform to any warranty of the Contractor upon inspection (or at any later time if the defects contained were not reasonably ascertainable upon the initial inspection) may be rejected. The MHTC reserves the right to return any such rejected shipment at the Contractor's expense for full credit or replacement and to specify a reasonable date by which replacements must be received. The MHTC's right to reject any unacceptable equipment, supplies, and/or services shall not exclude any other legal, equitable or contractual remedies the MHTC may have.

All responses to this Request For Bid MUST be submitted on this form and all pages MUST be returned to the Buyer in a sealed envelope with the Bid Number on front of the envelope to the mailing address listed above.

Notification of award will be at the time the tabulation is posted to the Internet. It is the sole responsibility for all bidders to check the website for bid results.

Bidders are encouraged to obtain minority business enterprise (MBE) and women business enterprise (WBE) participation in this work through the use of subcontractors, suppliers, joint ventures, or other arrangements that afford meaningful participation for M/WBEs. Bidders are encouraged to obtain 10% MBE and 5% WBE participation.

Vendor Notes

VENDORS MAY ATTACH OTHER PERTINENT/SUPPORTING DATA WITH THEIR RESPONSE TO THIS SOLICITATION.

DELIVERIES

All orders placed during this contract period shall be delivered to various MoDOT maintenance facilities as identified by each order issued. The following lists potential delivery points in the MoDOT Kansas City District. Price all materials as F.O.B. Destination. Delivery costs must be included in the unit prices & not listed separately.

COUNTY	FACILITY LOCATION	Org	MT DIVISION	OFFICE	MOBILE	FAX
CASS	Belton 17321 S Peculiar Drive Belton, MO 64012	7C03	Clem Anderson	816.322.3868	816.572.8681	816.318.0219
	Harrisonville 27821 S. State Route 7 Harrisonville, MO 64701	7C10	Randy Newkirk	816.380.3721	816.809.8457	816.884.3904
CLAY	Skiles 3800 N.E. Skiles Ave. Kansas City, MO 64161	7C20	W. Joe Sims	816.467.7927	816.518.2091	816.467.7928
	Northmoor 5248 Waukomis Dr Kansas City, MO 64151	7C25	David Blundell	816.741.0447	816.572.8634	816.587.0645
	Kearney 301 W 92 Hwy. Kearney, MO 64060	7C15	J. Deon Grigsby	816.628.5636	816.806.2085	816.628.5682
JACKSON	Kansas City District Office 600 NE Colbern Road Lee's Summit 64086	7C95	Joey Hinton			
	Independence 910 N 291 Hwy. Independence, MO 64058	7C71	Deloris Goetz	816.220.6625	816.872.5913	816.220.6627
	Mullberry 650 Mulberry Street Kansas City, MO 64101	7C01	Ronnie Smith	816.889.2137	816.806.1804	816.527.0089
	Stadium 9109 E 40th Terrace Kansas City, MO 64133	7C32	Corey Hansen	816.353.5901	816.719.9761	816.353.8445
	Lee's Summit East 3050 NE Independence Ave. Lee's Summit, MO 64064	7C18	Scott R. Banes	816.622.0502	816.564.6702	816.622.0518
JOHNSON	Warrensburg 8 NE 375 Warrensburg, MO 64093	7C34	TJ Williams	660.543.7936	816.225.8745	660.543.7937
	Knob Noster 143 NE 23 Hwy. Knob Noster, MO 65336	7C16	David Eppright	660.563.3066	816.813.1510	660.563.6537
LAFAYETTE	Odessa 7353 Outer Road Odessa, MO 64076	7C26	Robert Ralston	816.230.7712	816.572.8687	816.230.7725
	Concordia 601 N Main Concordia, MO 64020	7C06	Tim Koch	660.463.2522	660.815.1428	660.463.7168
PETTIS	Sedalia 2200 South Limit Sedalia, MO 65301	7C31	Daniel Newton	660.530.5580	660.281.0685	660.530.5586
PLATTE	Platte City 16105 Elm Grove Road Platte City, MO 64079	7C27	David Johnson	816.858.2731	816.813.1512	816.858.3667
	Nashua 1910 NW Cookingham Kansas City, MO 64155	7C24	Doug Patton	816.437.3510	816.810.0621	816.437.3511
RAY	Richmond 42896 Old Hwy. 10 Richmond, MO 64085	7C29	David Deitch	816.470.6306	660.292.0231	816.470.7697
SALINE	Marshall 1595 W Arrow Marshall, MO 65340	7C21	Milton Wright	660.886.3464	660.815.1465	660.886.8898

VENDOR INFORMATION & PREFERENCE CERTIFICATION FORM

Vendor Information

All bidders must furnish ALL applicable information requested below

Vendor Name/Mailing Address:	**Vendor Contact Information (including area codes):**
Email Address:	Phone #: Cellular #: Fax #:
Printed Name of Responsible Officer or Employee:	**Signature:**
For Corporations - State in which incorporated:	**For Others -** State of domicile:

If the address listed in the Vendor Name/Mailing Address block above is not located in the State of Missouri, list the address of Missouri offices or places of business:

*If additional space is required, please attach an additional sheet and identify it as **Addresses of Missouri Offices or Places of Business.***

M/WBE INFORMATION: List all certified Minority or Women Business Enterprises (**M/WBE**) utilized in the fulfillment of this bid. Include percentages for subcontractors and identify the M/WBE certifying agency:

M/WBE Name	Percentage of Contract	M/WBE Certifying Agency

*If additional space is required, please attach an additional sheet and identify it as **M/WBE Information***

Preference Certification

All bidders must furnish ALL applicable information requested below

GOODS/PRODUCTS MANUFACTURED OR PRODUCED IN USA: If any or all of the goods or products offered in the attached bid which the bidder proposes to supply to the MHTC are **not** manufactured or produced in the "United States", or imported in accordance with a qualifying treaty, law, agreement, or regulation, list below, by item or item number, the country other than the United States where each good or product is manufactured or produced.

Item (or item number)	Location Where Item is Manufactured or Produced

*If additional space is required, please attach an additional sheet and identify it as **Location Products are Manufactured or Produced**.*

MISSOURI SERVICE-DISABLED VETERAN BUSINESS: Please complete the following if applicable. Additional information may be requested if preference is applicable. See below definitions for qualification criteria:

Service-Disabled Veteran is defined as any individual who is disabled as certified by the appropriate federal agency responsible for the administration of veterans' affairs.

Service-Disabled Veteran Business is defined as a business concern:

a. Not less than fifty-one (51) percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than fifty-one (51) percent of the stock of which is owned by one or more service-disabled veterans; and
b. The management and daily business operations of which are controlled by one or more service-disabled veterans.

Veteran Information	Business Information
Service-Disabled Veteran's Name (Please Print)	Service-Disabled Veteran Business Name
Service-Disabled Veteran's Signature	Missouri Address of Service Disabled Veteran Business

Missouri Highways and Transportation Commission
Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions

STANDARD SOLICITATION PROVISIONS

a. The solicitation for the procurement of the supplies referenced therein, to which these "Standard Bid Provisions, General Terms and Conditions and Special Terms and Conditions" are attached, is being issued under, and governed by, the provisions of Title 7 – Missouri Department of Transportation, Division 10 – Missouri Highways and Transportation Commission, Chapter 11 – Procurement of Supplies, of the Code of State Regulations. The Missouri Highways and Transportation Commission (**MHTC**), acting by and through its operating arm, the Missouri Department of Transportation (**MoDOT**), draws the Bidder's attention to said 7 CSR 10-11 for all the provisions governing solicitation and receipt of bids/quotes and the award of the contract pursuant to this solicitation.

b. All bids/quotes must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled.

GENERAL TERMS AND CONDITIONS

Definitions

Capitalized terms as well as other terms used but not defined herein shall have the meaning assigned to them in section 7 CSR 10-11.010 Definition of Terms.

Nondiscrimination

a. The Contractor shall comply with all state and federal statutes applicable to the Contractor relating to nondiscrimination, including, but not limited to, Chapter 213, RSMo; Title VI and Title VII of Civil Rights Act of 1964 as amended (42 U.S.C. Sections 2000d and 2000e, *et seq.*); and with any provision of the "Americans with Disabilities Act" (42 U.S.C. Section 12101, *et seq*).
b. Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, MHTC shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
    i. withholding of payments to the Contractor under the contract until the Contractor complies, and/or,
    ii. cancellation, termination or suspension of the contract, in whole or in part.

Contract/Purchase Order

a. By submitting a bid/quote, the Bidder agrees to furnish any and all equipment, supplies and/or services specified in the solicitation documents, at the prices quoted, pursuant to all requirements and specifications contained therein.
b. A binding contract shall consist of: (1) the solicitation documents, amendments thereto, and/or Best and Final Offer (BAFO) request(s) with any changes/additions, (2) the Contractor's bid response, and (3) the MHTC's acceptance of the bid by post-award contract or purchase order.
c. A notice of award does not constitute an authorization for shipment of equipment or supplies or a directive to proceed with services. Before providing equipment, supplies and/or services, the Contractor must receive a properly authorized notice to proceed and/or purchase order.

Applicable Laws and Regulations

a. The contract shall be construed according to the laws of the State of Missouri. The Contractor shall comply with all local, state, and federal laws and regulations related to the performance of the contract. The exclusive venue for any legal proceeding relating to or arising, out of the contract shall be in the Circuit Court of Cole County, Missouri.
b. The Contractor must be registered and maintain good standing with the Secretary of State of the State of Missouri, Missouri Department of Revenue, and other regulatory agencies, as may be required by law or regulations. Prior to the issuance of a purchase order and/or notice to proceed, the Contractor may be required to submit to MHTC a copy of their current Authority Certificate from the Secretary of State of the State of Missouri and/or a copy of their Certificate of No Tax Due from the Missouri Department of Revenue.
c. Prior to the issuance of a purchase order and/or notice to proceed, all **out-of-state** Contractors **providing services** within the state of Missouri must submit to MHTC a copy of their current Transient Employer Certificate from the Missouri Department of Revenue, in addition to a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.

Executive Order:

The Contractor shall comply with all the provisions of Executive Order 07-13, issued by the Honorable Matt Blunt, Governor of Missouri, on the sixth (6^{th}) day of March, 2007. This Executive Order, which promulgates the State of Missouri's position to not tolerate persons who contract with the state engaging in or supporting illegal activities of employing individuals who are not eligible to work in the United States, is incorporated herein by reference and made a part of this Agreement.

1) "By signing this Agreement, the Contractor hereby certifies that any employee of the Contractor assigned to perform services under the contract is eligible and authorized to work in the United States in compliance with federal law."
2) In the event the Contractor fails to comply with the provisions of the Executive Order 07-13, or in the event the Commission has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States in violation of federal law, the Commission reserves the right to impose such contract sanctions as it may determine to be appropriate, including but not limited to contract cancellation, termination or suspension in whole or in part or both.
3) The Contractor shall include the provisions of this paragraph in every subcontract. The Contractor shall take such action with respect to any subcontract as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Preferences

a. In the evaluation of bids/quotes, preferences shall be applied in accordance with 7 CSR 10-11.020(7). Contractors should apply the same preferences in selecting subcontractors. The attached document entitled **"VENDOR INFORMATION AND PREFERENCE CERTIFICATION FORM"** must be completed and returned with the solicitation documents.

b. Bidders are encouraged to obtain minority business enterprise (MBE) and women business enterprise (WBE) participation in this work through the use of subcontractors, suppliers, joint ventures, or other arrangements that afford meaningful participation for M/WBEs. Bidders are encouraged to obtain 10% MBE and 5% WBE participation.

Cancellation of Contract

The MHTC may cancel the Contract at any time for a material breach of contractual obligations or for convenience by providing Contractor with written notice of cancellation. Should the MHTC exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the Contractor.

Bankruptcy or Insolvency

Upon filing for any bankruptcy or insolvency proceeding by or against the Contractor, whether voluntarily, or upon the appointment of a receiver, trustee, or assignee, for the benefit of creditors, the Commission reserves the right and sole discretion to either cancel the Agreement or affirm the Agreement and hold the Contractor responsible for damages.

Warranty

The Contractor expressly warrants that all equipment, supplies, and/or services provided shall: (1) conform to each and every specification, drawing, sample or other description which was furnished to or adopted by the MHTC, (2) be fit and sufficient for the purpose expressed in the solicitation documents, (3) be merchantable, (4) be of good materials and workmanship, and (5) be free from defect.

Status of Independent Contractor

The Contractor represents itself to be an independent Contractor offering such services to the general public and shall not represent itself or its employees to be an employee of the MHTC. Therefore, the Contractor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers' compensation, employee insurance, minimum wage requirements, overtime, etc., and agrees to indemnify, save and hold the MHTC, its officers, agents and employees harmless from and against any and all losses (including attorney fees) and damage of any kind related to such matters.

Non-Waiver

If one of the parties agrees to waive its right to enforce any term of this Contract, that party does not waive its right to enforce such term at any other time or to enforce any or all other terms of this Contract.

Indemnification

The Contractor shall defend, indemnify and hold harmless MHTC, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the Contractor's performance of its obligations under the contract awarded pursuant to this solicitation.

SPECIAL TERMS AND CONDITIONS

Tax Exempt Status:

MHTC is exempt from paying Missouri Sales Tax, Missouri Use Tax and Federal Excise Tax. However, the Contractor may themselves be responsible for the payment of taxes on materials they purchase to fulfill the contract. A Project Tax Exemption Certificate will be furnished to the successful Bidder upon request if applicable.

Permits, Licenses and Safety Issues

The contract price shall include any necessary permits and licenses required by law incidental to the work. Local ordinances requiring building permits are not applicable to state agencies.

Delivery – Additional Requirements

a. The Contractor shall furnish the Missouri Department of Transportation with a planned delivery schedule **at least 24 hours before** starting delivery.
   1) Notification should be during the normal workday preceding the day on which the Contractor desires to initiate delivery.
   2) It will be necessary for a representative of the Missouri Department of Transportation to be present when the material is delivered.
   3) No material will be accepted that has been unloaded in the absence of the department's representative.

b. Unless otherwise specified in the proposal, no deliveries will be made on **Saturdays, Sundays and holidays** unless specifically authorized by the engineer or his representative.

c. The following days shall be construed as **official holidays** under the terms of the contract:

January 1	New Year's Day
Third Monday in January	Martin Luther King, Jr.'s Birthday
February 12	Lincoln's Birthday
Third Monday in February	Washington's Birthday
May 8	Truman's Birthday
Last Monday in May	Memorial Day
July 4	Independence Day
First Monday in September	Labor Day
Second Monday in October	Columbus Day
November 11	Veteran's Day
Fourth Thursday in November	Thanksgiving Day
December 25	Christmas Day

d. When any of the above **holidays falls** on a **Sunday,** the holiday will be observed on the following **Monday**; when any of the above **holidays falls** on a **Saturday**, the **holiday** will be observed on the immediately preceding **Friday.**

Liquidated Damages

a. In the event the successful Contractor fails to deliver the material within the time specified, the Department and the public will sustain damages because of such delay in delivery, the exact extent of which would be difficult to ascertain, and in order to liquidate such damage in advance it is agreed that the **sum of $150.00 per day, per item,** for each assessable calendar day on which the delivery has not been completed, is reasonable and the best estimate which the parties can arrive at as liquidated damages, and it is therefore agreed that said amount will be withheld from payments due the Contractor or otherwise collected from the Contractor as liquidated damages.

b. **Saturdays, Sundays, holidays and days whereas the Department has suspended work** shall not be assessable days.

CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARCHES AND END SECTIONS MGS-91-11G

1.0 DESCRIPTION. These specifications cover the purchase of metallic-coated corrugated metal culvert pipe and appurtenances for maintenance purposes.

2.0 MATERIALS.

2.1 PIPE.

2.1.1 The pipe and connecting bands shall comply with applicable sections of Specification Sec 725, 1020 and 1022, except as noted herein.

2.1.2 Unless otherwise noted in the bid request, the metallic coating may be either zinc or aluminum, as covered by the applicable specifications listed herein.

2.1.3 All pipe shall have either 2 2/3 by 1/2 inch or 3 by 1 inch corrugations.

2.1.4 The specified thickness of the coated sheet shall be any of those listed for the allowable overfill heights shown in Standard Plan 725.00A Table 1, for the pipe diameter specified and the corrugation used.

2.1.5 All pipe ends shall have 2 2/3 by 1/2 inch annular corrugations extending at least 4 corrugations from the pipe end. This will require re-rolling of ends for certain pipe.

2.1.6 Metal arch pipe B1 through B4 shall comply with the dimensional requirements of AASHTO M 36.

2.2 BANDS.

2.2.1 Unless otherwise noted in the order, bands shall be annular corrugated over the entire width of the band with 2 2/3 by 1/2 inch corrugations.

2.2.2 Unless otherwise noted in the order, all bands shall be a minimum of 24 inches in width.

3.0 ORDERING INFORMATION.

3.1 Specific diameter and quantity information for pipe and bands, and lengths for pipe, are to be shown in the order. Acceptable diameters are shown in Specification Sec 725. Pipe lengths are to be in 2 foot increments.

3.2 Specific band information for type and width is to be shown in the order only if different from that specified herein. Alternate band types are dimple or formed, when allowed by the order.

3.3 If a specific metallic coating is desired, it is to be specified in the order for the applicable pipe and any applicable bands as "Zinc Coated" or "Aluminum Coated".

4.0 ACCEPTANCE. Material will be accepted in accordance with Specification Sec 1020.

SECTION 725

METAL PIPE AND PIPE ARCH CULVERTS

725.1 Description. This work shall consist of providing corrugated metal pipe or pipe arch of the diameter or shape designated, laid upon a firm bed and backfilled as specified. Where pipe is referred to, this specification will also apply to pipe-arch, where appropriate. Pipe shall be in accordance with Sec 724.

725.1.1 If the contract specifies corrugated metallic-coated steel pipe culverts of 60-inch diameter or larger, the contractor may substitute structural plate pipe of like sizes, lengths and thicknesses of steel, constructed in accordance with Sec 727, at the contractor's expense.

725.1.2 If the contract specifies corrugated metallic-coated steel pipe or corrugated aluminum alloy pipe, or if the contract specifies pipe culverts by group and the contractor elects to furnish corrugated metallic-coated steel pipe or corrugated aluminum alloy pipe, the thickness of metal and size of corrugation for the respective pipe size shall be as shown on the plans unless otherwise specified. The overfill height shown on the plans or in the contract shall be used to determine the proper sheet thickness and size of corrugation for the individual pipe culvert. The minimum cover shall be measured as shown on the plans.

725.1.3 When Group A pipe is specified and the contractor elects to furnish polymer coated corrugated metal culvert pipe or corrugated aluminum-coated steel culvert pipe, the following shall apply:

725.1.3.1 The thickness of the coated sheet shall be a minimum thickness as follows:

Pipe Dia. Inches	**Minimum Gauge of Steel Pipe**	
	2 2/3" x ½" or ¾" x ¾" x 7 ½" spiral rib Corr.	**3"x1" or 5" x 1" Corr.**
< 42"	14	14
42" < 60"	12	12
60" < 78"	10	12
78" < 90"	8	12
90" < 108"	N/A	12
108" and above	N/A	10

725.1.3.2 The predominate soil type in the area of any metal pipe installation shall meet the following: pH shall be in the range of 5 to 9 (4 to 9 for polymer coated pipe) using AASHTO T-289 test method and soil resistivity shall be > 1500 ohm-cm (> 750 ohm-cm for polymer coated pipe) using AASHTO T-288 test method. The contractor shall conduct these tests and report to the engineer verifying that the tests were performed in accordance with this specification and the predominant soil type in the area of the pipe meets these parameters at least 30 days prior to the installation.

725.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Corrugated Metallic-Coated Steel Culvert Pipe, Pipe-Arches and End Sections	1020
Bituminous Coated Corrugated Metal Culvert Pipe, Pipe Arch	1021
Corrugated Aluminum Alloy Culvert Pipe and Corrugated Aluminum Alloy Structural Plate	1024
Polymer Coated Corrugated Metal Culvert Pipe and Pipe Arches	1027

725.3 Construction Requirements.

725.3.1 Handling. All pipe shall be handled to avoid damage. Pipe having damaged coating, any localized bends in excess of five percent of the specified pipe diameter, or any dent in excess of 1/2 inch will be unacceptable, regardless of previous approvals. Rejected damaged pipe may be used if repaired to the satisfaction of the engineer.

725.3.2 Laying Pipe.

725.3.2.1 The pipe shall be carefully laid true to lines and grades shown on the plans. Riveted pipe shall be installed with the outside laps of circumferential joints pointing upstream and with no longitudinal lap placed on the bottom 120 degrees of the pipe on the sides. Any pipe that is not in true alignment or that shows any undue settlement after laying shall be taken up and re-laid at the contractor's expense. If shown on the plans or directed by the engineer, camber shall be built into the pipe structure to compensate for settlement from fill loads.

725.3.2.2 Transverse field joints shall be of such design that the successive connection of pipe sections will form a continuous line free from appreciable irregularities in the flow line. Each successive length of pipe in a field joint shall be adjusted longitudinally or circumferentially when necessary such that coupling bands will properly engage the corrugations in both lengths of pipe.

725.4 Installation, Bedding And Backfill Material. Metal pipe, bedding, backfill and installation shall be in accordance with AASHTO LRFD Bridge Construction Specifications Section 26 and as shown on the plans and specifications. When conflicts occur between AASHTO Section 26 and the plans and specifications the plans and specifications shall apply.

725.4.1 Bedding and Backfill Material. Bedding and backfill material shall meet the requirements of AASHTO M 145, A-1, A-2-4, A-2-5 or A-3. Backfill shall be free of organic material, stones larger than 1.5 in or frozen lumps. Moisture content shall be in the range of optimum content to permit thorough compaction. For pipes with corrugated exterior backfill gradations shall have a maximum particle size less than ½ the corrugation depth. Flowable backfill, such as low strength mortar may also be used providing flotation resistance and adequate void fill coverage.

725.4.2 Foundation and Bedding Construction. A stable and uniform bedding shall be provided for the pipe and protruding features of the drainage structure. The middle of the bedding equal to one-third the pipe outside diameter should be loosely placed, while the remainder shall be compacted to a minimum 90 percent of maximum density based upon standard Procter test. A minimum bedding depth of twice the corrugation depth shall be provided prior to placement of the pipe unless otherwise specified. When rock or unyielding material is present in the trench, a minimum bottom bedding of 6.0 in shall be provided. If soft or unstable material is encountered the material shall be removed to a minimum depth of

10 inches below the bottom of the pipe and replaced with suitable granular material. Payment for any unsuitable material will be made per Sec. 206.

725.4.3 Backfill Construction. Structural backfill shall be placed and compacted in layers not exceeding an loose lift thickness of 8 in. and brought up evenly. The side to side differential shall not exceed 24.0 in or one-third of the rise of the structure. Backfill shall continue to not less than 1.0 ft. above the top of the pipe. Structural backfill shall be worked into the haunch area and compacted by hand. All backfill shall be compacted to a minimum 90 percent standard density based upon standard Procter test. Special compaction means may be necessary in the haunch area. Ponding or jetting structural backfill to achieve compaction shall not be permitted without the permission of the Engineer.

725.5 Shop Elongation. Round corrugated steel pipe 48 inches or greater in diameter may be furnished round or shop elongated. The contractor shall maintain elongation during backfilling and embankment construction such that the vertical height of the opening after the embankment has been completed shall be no less than the diameter of the pipe or greater than the pre-elongated height.

725.6 Corrugated Metal Drop Inlets. The contractor shall install corrugated metal drop inlets of the proper size and length at the locations shown on the plans. The drop inlet shall be constructed of the same base metal and thickness of corrugated metal used in the culvert pipe and shall be in accordance with Sec 1020 or Sec 1024.

725.7 Corrugated Metal Curtain Walls. The contractor shall install metal curtain walls of the proper size and shape at locations shown on the plans. Metal curtain walls shall be constructed of the same base metal used in the culvert pipe and shall be of the thickness of metal shown on the plans and in accordance with Sec 1020 or Sec 1024.

SECTION 1020

CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARCHES AND END SECTIONS

1020.1 Scope. This specification covers corrugated steel pipe, pipe-arches and flared end sections intended for use in the construction of culverts and similar uses. The steel used in fabrication shall have a protective metallic coating of zinc (galvanizing) or aluminum.

1020.2 Basis of Acceptance. Unless otherwise specified, the basis of acceptance will be in accordance with AASHTO M 36. Pipe shall be from an approved qualified plant and will be accepted based on certification, manufacturer quality control documentation and tests on samples as required by the engineer. Pipe may be fabricated using English units of measurement. Pipe fabricated using English measurements shall be in accordance with the dimensions and tolerances shown on the plans.

1020.3 Material.

1020.3.1 Steel Sheet. Steel sheet shall be certifiable in accordance with AASHTO M 218 or AASHTO M 274. Finished steel sheet shall be free from injurious defects such as blisters, flux and uncoated spots.

1020.3.2 Zinc Coating. Zinc for coating or galvanizing shall be prime western grade or better. Zinc-coated steel shall have a weight of zinc coating no less than 2.00 ounces psf of double exposed surface. If the average weight of zinc coating, as determined from the required samples, is less than 2.00 ounces psf, or if any one specimen has less than 1.80 ounces of zinc psf of double exposed surface, the lot sampled will be rejected or resampled, as determined by the engineer. If a retest is conducted, the weight of zinc coating of all of the original samples and the samples for retest shall average at least 2.00 ounces psf of double exposed surface, and no specimen shall have less than 1.80 ounces psf, or the entire lot sampled will be rejected. Adherence of coating shall be such that no peeling occurs while the material is being corrugated or formed into pipe.

1020.3.3 Aluminum Coating. Aluminum for coating shall be commercially pure aluminum. The bath analysis shall be in accordance with the *Aluminum Bath Analysis* table shown on the plans. Aluminum-coated steel shall have a weight of aluminum coating no less than 1.00 ounce psf of double exposed surface. If the average weight of aluminum coating, as determined from the required samples, is less than 1.00 ounce psf or if any one specimen has less than 0.90 ounce of aluminum psf of double exposed surface, the lot sampled will be rejected or resampled, as determined by the engineer. If a retest is conducted, the weight of aluminum coating of all of the original samples and the samples for retest shall average at least 1.00 ounce psf of double exposed surface and no specimen shall have less than 0.90 ounce psf or the entire lot sampled will be rejected.

1020.3.4 Documentation.

1020.3.4.1 Sheet Manufacturer's Certified Analysis. The manufacturer of each brand shall file with Construction and Materials a certificate setting forth the name or brand of metal to be furnished, the specified chemical composition and a typical or average analysis showing the

percent of carbon, phosphorus, manganese, sulfur and silicon. The certificate shall be sworn to, for the manufacturer, by a person having legal authority to bind the company.

1020.3.4.2 Sheet Manufacturer's Guarantee. The manufacturer of the steel sheet shall submit with the certified analysis a guarantee providing that all metal furnished is in accordance with the specification requirements, shall bear a suitable identification brand or mark and shall be replaced without cost to the Commission when not in accordance with the specified analysis, sheet thickness or coating. The guarantee shall be so worded as to remain in effect as long as the manufacturer continues to furnish material. The manufacturer shall conduct such tests and measurements as necessary to ensure the material produced is in accordance with all specification requirements. These tests and measurements shall be identified by the identification symbols or code used on the sheet in a manner that will permit the manufacturer to produce specific reports showing test results representative of specific lots of steel sheet. Copies of reports of these tests shall be kept on file and shall be submitted to the engineer upon request. The brand shall be removed or obliterated by the manufacturer on all material where control tests, as outlined herein, do not show conformance to this specification.

1020.4 Fabrication.

1020.4.1 Riveted Seams. A longitudinal seam will not be permitted on the corner radius or invert of pipe-arch.

1020.4.2 Resistance Spot Welded Seams. A longitudinal seam will not be permitted on the corner radius or invert of pipe arch.

1020.4.3 Shop Elongation. If round pipe is required to be shop elongated, the vertical axis shall be five percent greater than the nominal diameter. A tolerance of one percentage point in elongation will be permitted. Approximately 2 feet at each end of an installation may be left round to accommodate connecting end treatments or extensions. A paint mark to indicate the top of the pipe shall be placed on each piece of shop elongated pipe, and round ends on an elongated pipe shall be clearly marked "Outside End-Round".

1020.4.4 Beveled Ends. Corrugated metal pipe requiring beveled ends to conform to the adjacent roadway slope shall be cut in such a manner as to leave smooth edges without damage to the coating away from the cut edge. Cut edges shall be completely covered with two coats of single component inorganic zinc or organic zinc-rich paint meeting the approval of the engineer. No other end finish will be required for pipe with beveled ends.

1020.4.5 End Sections. Metal end sections shall be in accordance with the requirements for base metal, coating, fabrication, sampling, accepted brands of metal, sheet manufacturer's certified analysis, sheet manufacturer's guarantee, sheet thickness, workmanship and repair of coating. The sections shall conform to the shape, dimensions and sheet thicknesses shown on the plans, and shall be manufactured as integral units or so the sections may be readily assembled in place.

1020.4.6 Bands. Formed bands may be used on pipe with annular corrugations and helically corrugated pipe with reformed ends. Bands shall be formed with a minimum of two corrugations matching the profile of the pipes being joined together. The corrugations shall be spaced to provide seating in the second corrugation of each pipe and without creating more than 1/2-inch annular space between the pipe ends when joined together.

1020.4.6.1 Circumferentially corrugated bands, bands with projections and helically corrugated bands shall be so constructed as to lap on an equal portion of each of the culvert sections and shall be connected at the ends by galvanized angles having minimum dimensions

of 2 x 2 x 3/16 inch, fastened with galvanized bolts of 1/2-inch minimum diameter. Formed bands shall be fastened together by two 1/2-inch bolts through a bar, and strap welded to the band. Angles shall be secured to the coupling bands by riveting, welding, resistance spot welding or a method approved by the engineer at each corrugation. Rivets shall be placed such that the head of the rivet will be on the inside of the band. Welds, except for resistance spot welds, shall be painted with one coat of zinc dust-zinc oxide or zinc-rich paint meeting the approval of the engineer. The 7-inch and 10 1/2-inch bands shall have at least two fastening bolts, the 12-inch and 14-inch bands shall have at least three fastening bolts and the 16 1/4-inch or greater bands shall have at least four fastening bolts. Alternate methods of fastening the ends of coupling bands may be used if approved by the engineer. Coupling bands for pipe-arch and shop elongated pipe shall be shaped to fit the structure.

1020.4.6.2 As an alternate to coupling bands, a bell and spigot joint system may be used as approved by Construction and Materials.

1020.4.7 Special Fittings. Special fittings, angles and tees shown on the plans shall be fabricated by welding in such a manner as to avoid excessive damage to the coating away from the welded area. The welded area and adjacent damaged coating shall be repaired in accordance with Sec 1020.6.

1020.5 Sampling, Testing and Acceptance Procedures. All fabrication plants furnishing pipe for MoDOT projects shall be qualified as herein described. A pipe distributor, who does not fabricate pipe, may attain qualification as set forth for a pipe manufacturer or may furnish pipe for MoDOT projects that is marked and certified from an approved plant. All pipe will be subject to inspection by the engineer at the source of manufacture, at an intermediate shipping terminal or at destination. The engineer shall be allowed unlimited access to all facilities and records, as required, to conduct inspection and sampling in accordance with Sec 106.

1020.5.1 Application for Placement on the Qualified List. For a plant to become qualified, a written request shall be sent by the manufacturer to Construction and Materials with the following information:

(a) A QC Plan, in accordance with Sec 1020.5.2, for each plant from which pipe is to be fabricated for use on MoDOT projects.

(b) A certification statement from the manufacturer that the quality control procedures at the plant, at a minimum, meet the requirements set forth in the manufacturer's QC Plan.

(c) Sources for each material to be used in the fabrication of pipe shall be provided.

(d) A guarantee that all material to be used in the fabrication of pipe will be in accordance with MoDOT specifications and that pre-approval for any source of material will be received prior to use.

(e) Units of measurement, English or metric, used to fabricate the pipe.

1020.5.2 Manufacturer's QC Plans. The QC Plan for each plant shall include the following:

(a) A list of personnel with corresponding authority and responsibility.

(b) Qualifications and training of QC personnel, current and proposed.

(c) A description of how the manufacturer proposes to control production in order to assure all material and workmanship incorporated into the fabrication of pipe meets the applicable specification requirements.

(d) Lot sizes, the specific tests to be performed during or after production, frequency of these tests, the point where samples or inspections will be obtained or performed, and the format for recording test data.

(e) A drawing, photograph or copy of the manufacturer's identification marking.

(f) A plan for resolving conflicts.

(g) Designate how the pipe will be identified as pipe for MoDOT projects if the pipe is stockpiled and not marked in accordance with Sec 1020.7.

1020.5.3 Maintaining Qualification. To maintain qualification, the manufacturer and plant shall perform and maintain quality control in accordance with the manufacturer's QC Plan approved by Construction and Materials. The manufacturer or plant shall conduct tests and inspections to verify that adequate quality control is maintained and that the pipe furnished is in accordance with Sec 1020. The manufacturer or plant shall maintain for three years a record of all test results and inspections for review by the engineer. The records shall show that each shipment of pipe has been inspected by the plant's QC personnel. The record shall indicate the purchase order number or the project number, route, county, date of inspection, size of corrugation, type of fabrication, quantity in lineal feet, number of bands and end sections, pipe diameter, sheet thickness, brand and heat number of the base metal, and the coating lot number. The manufacturer or plant shall notify the engineer responsible for inspection of that plant at least 24 hours prior to each shipment. Additional pipe may be considered part of the original shipment when the ordered quantity was underestimated or material was lost or damaged. A bill of lading in accordance with Sec 1020.10 shall be provided for each shipment of pipe. Each plant shall maintain a current list of QC personnel with corresponding authority and responsibility. All training provided to QC personnel shall be documented with a brief description of the training and shall be kept on file at the plant.

1020.5.4 Disqualification of a Manufacturer or Plant. A manufacturer or plant may be disqualified to provide pipe for use on MoDOT projects based on the discretion of Construction and Materials, for reasons including, but not limited to, noncompliance with the manufacturer's QC Plan, failure of pipe to consistently meet specifications, falsification of documentation, unsatisfactory performance in the field or for other reasons indicating lack of consistent material or workmanship quality.

1020.5.4.1 A manufacturer or plant will not be considered for reinstatement until after one year from the date of removal for falsification of documents.

1020.5.4.2 Three notices of failure to meet the specification requirements within a 12-month period will be cause for disqualification of a plant for one year, effective from the date of the third notice.

1020.5.4.3 A manufacturer having two or more plants disqualified will constitute disqualification of the manufacturer for one year.

1020.5.4.4 A manufacturer or plant disqualified within one year of the end of a disqualification may be subject to permanent removal, with no application to be reinstated for a period of three years.

1020.5.5 Reinstatement of a Manufacturer or Plant. Consideration of reinstatement of a manufacturer or a plant once disqualified will be no sooner than specified in Sec 1020.5.4, will require a written document from the manufacturer or plant stating the reasons for disqualification and the action taken to correct those deficiencies, written concurrence from Construction and Materials that the problem has been suitably addressed, and followed by an application in accordance with Sec 1020.5.1.

1020.5.6 Sampling of Material. Random sampling of the pipe or material used in the production of pipe will be conducted by the engineer to verify if the pipe and material are in accordance with the applicable specifications. Sampling size and frequency will be at the discretion of the engineer. In the event pipe materials certified by the manufacturer are not in accordance with Sec 1020 as determined by random sampling, testing and inspection, all pipe incorporating that material will be rejected.

1020.5.7 Mill and Factory Inspection. The engineer may have the material inspected and sampled in the rolling mill or in the shop where fabricated. The engineer may require from the mill the chemical analysis of any heat number. The inspection, either in the mill or in the shop, shall be under the direction of the engineer. The engineer shall have unlimited access to the mill or shop for inspection, and every facility shall be extended for the purpose of inspection. Any material or pipe that has been previously rejected at the mill or shop and included in a later lot will be considered sufficient cause for rejection of the entire lot.

1020.5.8 Inspection. Inspection by the engineer will include an examination of the pipe for deficiency in specified diameter, net length of finished pipe and any evidence of poor workmanship. The inspection may include taking samples for chemical analysis, mechanical properties and determination of weight of coating. The pipe making up the shipment shall meet all requirements of these specifications. If 10 percent of the pipe in any lot fails to meet these requirements, the entire lot may be rejected.

1020.5.9 Sampling of Coated Steel. Samples of coated steel sheet may be obtained from coils, flat or corrugated cut lengths or fabricated culverts. Samples shall be taken at a frequency determined by the manufacturer's QC Plan or as required by the engineer.

1020.5.9.1 For testing weight of coating of flat or corrugated cut lengths before fabrication, three specimens, each no less than 2 1/4 inches square or of an equivalent area, shall be taken from each test sheet selected to represent the lot. The specimens shall be taken such that no part includes metal closer than 2 inches from an edge or 4 inches from an end of the cut length. These specimens shall be obtained in any one of the following patterns:

(a) One specimen shall be obtained from the center of the cut length and the other two in a straight line diagonally at the opposite corners.

(b) Specimens shall be taken in a straight line from one end of the cut length, one from the middle portion and one from near each edge.

1020.5.9.2 For testing weight of coating of coils before fabrication, three specimens, each no less than 2 1/4 inches square or of an equivalent area, shall be taken, one from the middle of the width and one from each side. No specimen shall be taken closer than 2 inches from an edge or 4 inches from an end of the coil.

1020.5.9.3 For testing weight of coating of fabricated pipe or pipe-arch, at least one specimen 2 1/4 inches square or of equivalent area, shall be selected for each 20 pieces of pipe within a given lot selected to be tested, provided that no less than three specimens, each from a different piece, shall represent any one lot. The three specimens shall constitute one sample and shall be in accordance with Sec 1020.3.

1020.5.9.4 For chemical analysis of the base metal of flat or corrugated cut lengths before fabrication, a specimen, no less than 2 1/4 inches square or of an equivalent area, shall be taken from each of three different cut lengths for lots weighing 5 tons or less, from four cut lengths for lots weighing more than 5 tons and less than 10 tons and from five cut lengths for lots weighing 10 tons or more. Drillings or chips from the specimens shall be thoroughly mixed for analysis.

1020.5.9.5 For chemical analysis of the base metal of coils, three specimens, each no less than 2 1/4 inches square or of an equivalent area, shall be taken from across the width of the coil, or if more than one mill lift or coil is involved, three specimens shall be selected from each of at least two different coils. Drillings or chips from the specimens shall be thoroughly mixed for analysis.

1020.5.9.6 When chemical analysis of base metal of fabricated pipe or pipe-arch is required, the analysis shall be performed on the same specimens taken for determination of weight of coating.

1020.5.9.7 For testing mechanical properties of the base metal, two specimens, each 4 x 14 inches, shall be taken from one end of a cut length or coil. The 14-inch dimension shall be in the longitudinal direction of the steel sheet. No specimen shall be taken closer than 2 inches from an edge or 4 inches from an end of a sheet.

1020.5.9.8 Samples for retest of weight of coating on cut lengths shall be taken in accordance with pattern (a) of Sec 1020.5.9.1. Samples for retest of mechanical properties or chemical composition of any base metal or retest of weight of coating on coils or fabricated pipe or pipe-arch shall be taken in the same manner as for the original test.

1020.5.10 Testing of Metallic-Coated Steel. Tests for weight of coating, chemical composition and mechanical properties of metallic-coated steel sheets shall be as herein specified.

1020.5.10.1 Test specimen size and method of test for determining weight of coating shall be in accordance with AASHTO T 65 for zinc coatings, and AASHTO T 213 for aluminum coatings. At the option of the engineer, material may be accepted on the basis of magnetic gauge determinations made in accordance with ASTM E 376.

1020.5.10.2 The method of test for chemical analysis shall be in accordance with ASTM E 30-68, exclusive of any later revisions or additions.

1020.5.10.3 Test specimen size and method of test for determining tensile strength, yield strength and elongation shall be in accordance with ASTM A 370 for sheet steel.

1020.5.11 Acceptance of Metallic-Coated Steel Sheet. Acceptance of metallic-coated steel sheet will be based on a satisfactory sheet manufacturer's certified analysis and guarantee and sheet identification markings, upon tests on samples of the material, or upon both. The frequency of sampling will be determined by the engineer. The fabricator shall provide the equipment and personnel required to obtain the samples as directed by the engineer.

1020.5.12 Accepted Brands of Metal. No metal will be accepted under these specifications until the sheet manufacturer's certified analysis and manufacturer's guarantee have been approved by the engineer. Misbranding or other misrepresentation and non-uniformity of product, will each be considered sufficient reason to discontinue the acceptance of any brand under these specifications, and notice sent to the sheet manufacturer of the discontinuance of

acceptance of any brand will be considered to be notice to all culvert companies that handle that particular brand.

1020.5.13 Sampling and Testing of Continuous Lock Seam. Sampling and testing for continuous lock seam quality control shall be in accordance with AASHTO T 249.

1020.5.13.1 The pipe manufacturer or plant shall cut, log and retain quality control samples, which shall be retained for two years. Visual examination samples for quality control shall be cut during production. The manufacturer or plant shall sample a minimum of one lock per coil when the same diameter of pipe is being produced. The samples shall be taken from the beginning of the coil. If diameters are changed within a coil, at least one lock per diameter shall be taken. Quality control tension test specimens shall be taken from pipe representing each sheet thickness and diameter the first time that sheet thickness and diameter is produced. In addition, each sheet thickness thereafter shall be sampled on a monthly basis during production for tension testing of the seam. The manufacturer or plant shall record all tension test results and retain those records for two years.

1020.5.13.2 Inspection by the engineer will include random visual examination samples and tension test samples taken in the presence of the engineer. If visual examination samples indicate nonconformance, that length of the pipe will be rejected, and a resample will be taken from a different length of pipe of the same sheet thickness of the same diameter. If the resample fails, each shipment of that sheet thickness thereafter shall be sampled for visual examination and tension testing until the engineer determines that satisfactory quality control is established. Pipe from which tension test specimens have been taken may be cut and the undamaged portion accepted for use.

1020.6 Repair of Damaged Coating. Damaged coating on pipe shall be repaired in accordance with AASHTO M 36, except as follows. Coating damaged in the field shall be repaired by recoating by the hot-dip process or by the metallizing process, except that in instances of minor damage to areas in the upper two-thirds of the perimeter as installed, the engineer may permit repair in the same manner as specified for repair during fabrication. The fabricated unit shall be thoroughly cleaned prior to recoating. The hot-dip process shall be in accordance with Sec 1020.3.

1020.7 Marking. Each section of pipe to be used on MoDOT projects shall be marked with an approved manufacturer's identification marking prior to shipment. The marking shall be permanent and located within 12 inches of the downstream end of the pipe.

1020.8 Handling. All pipe shall be handled with care to avoid damage. Pipe having damaged coating, localized bends in excess of 5 percent of the specified pipe diameter or any dent in excess of 1/2 inch will be rejected at the site of the work regardless of previous approvals. Rejected damaged pipe may be used if repaired to the satisfaction of the engineer.

1020.9 MoDOT Identification Number. When the manufacturer contacts the engineer in accordance with Sec 1020.5.3, the engineer will assign a specific MoDOT identification number for each size of pipe in the shipment.

1020.10 Bill of Lading. A bill of lading or delivery receipt for each shipment of pipe shall be furnished to the engineer at the shipping and destination points. The bill of lading shall contain an itemized statement of the sizes and lengths of pipe with the corresponding designated MoDOT identification number provided to the manufacturer for each size of pipe for that shipment. The bill of lading shall contain a certified statement. The certified statement shall be signed by an authorized representative of the manufacturer and shall state the following:

"This certifies that the pipe, bands and end sections in this shipment are in accordance with MoDOT specifications, were fabricated at an approved plant and were fabricated from the following brand names:"

SECTION 1022

CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN

1022.1 Scope. This specification covers corrugated metallic-coated steel pipe underdrain.

1022.2 Basis of Acceptance. Basis of acceptance will be in accordance with Secs 1020.2, and 1020.5, as specified herein.

1022.3 Material. Corrugated metallic-coated steel underdrain shall be in accordance with Sec 1020 and AASHTO M 36, Type III pipe for zinc-coated or aluminum-coated, with the following modifications.

1022.3.1 Pipe 6 inches in diameter shall be fabricated of steel no less than 0.052 inch, 18 gage, specified thickness. Pipe with diameters 8 to 21 inches , inclusive, shall be fabricated of steel no less than 0.064 inch, 16 gage , of the specified thickness.

1022.3.2 Coupling bands shall be of the same base metal as the pipe.

1022.3.3 Mechanical requirements of the base metal shall not apply.

1022.3.4 Samples for determination of coating thickness may be taken from fabricated pipe.

1022.4 Perforations. Unless otherwise specified, all pipe shall be perforated in accordance with the requirements for Class 1 perforations AASHTO M 36.

CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS
FIELD SECTION 1020 TABLE 5
QUALIFIED FABRICATORS OF CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS

Plant	Fabrication Units	Manufacturer's Ident Mark
Contech Construction Products, Inc. 1509 West Mount Vernon Metamora, IL 61548 (10/04)	English	
Contech Construction Products, Inc. 200 John Williams Ave. Mitchell, IN 47446 (10/04)	English	
Contech Construction Products, Inc. 2707 NE Seward Topeka, KS 66616 (09/04)	English	
Contech Construction Products, Inc. 2474 Aspen Street Wahoo, NE 68066 (11/04)	English	
Contech Construction Products, Inc. 783 South Miller Drive Walnut Ridge, AR 72476 (10/04)	English	
Metal Culverts, Inc. 2107 Rear Missouri Blvd. P.O. Box 330 Jefferson City, MO 65102 (11/04)	English	
Metal Culverts, Inc. 109 Dakota Street Columbia, MO 65205 (12/04)	English	

CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS
FIELD SECTION 1020 TABLE 5 Continued
QUALIFIED FABRICATORS OF CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS

Plant	Fabrication Units	Manufacturer's Ident Mark
Metal Culverts, Inc. 504 North Industrial Drive P.O. Box 9 Maryville, MO 64468 (12/04)	English	
Contech Construction Products, Inc. P.O. Box 1006 Sikeston, MO 63801 (8/04)	English	
Contech Construction Products, Inc. 4151 East Kearney Springfield, MO 65803 (03/05)	English	
Contech Construction Products, Inc. 110 Ford Lane Hazelwood, MO 63042 (05/05)	English	
Illowa Culvert & Supply Co. P.O. Box 43 2554 380th Avenue Low Moor, IA 52757	English Metric	
Kahn Culvert, Inc. P.O. Box 349 702 North Pearl Paola, KS 66071		

CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS
FIELD SECTION 1020 TABLE 5 Continued
QUALIFIED FABRICATORS OF CORRUGATED METALLIC-COATED STEEL CULVERT PIPE, PIPE-ARHCES, AND END SECTIONS

Plant	Fabrication Units	Manufacturer's Ident Mark
J & J Metal Products Co. PO Box 829 Hutchinson, KS 67504-0829