

**MISSOURI DEPARTMENT OF TRANSPORTATION**



CENTRAL DISTRICT  
 PO Box 718  
 1511 MISSOURI BLVD.  
 JEFFERSON CITY, MO 65102

**REQUEST FOR BID  
 BIDDING GUIDELINES  
 AND DOCUMENTATION**

**SEALED BID REQUIRED**

TODAY'S DATE: <b>JUNE 24, 2013</b>	BID DUE BY (DATE AND TIME): <b>JULY 9, 2013                  1:00 PM CDST</b>	F.O.B. REQUIREMENTS: <b>FOB DESTINATION</b>
TO BE DELIVERED/COMPLETED: <b>WITHIN 30 DAYS FROM                  NOTICE TO PROCEED</b>	BID #: <b>CD-13-049B</b>  THIS QUOTATION # SHOULD BE REFERENCED ON ALL MAILING LABELS, ENVELOPES, AND ANY OTHER CORRESPONDENCE.	BUYER: <b>SHELDON REDEL</b> PHONE NUMBER: <b>573-751-7708</b>
District Mailing Address: Missouri Department of Transportation Central District General Services 1511 Missouri Blvd Jefferson City, MO 65102		Delivery Locations:  Cole County, MO Route 179, Between Mission Dr. and Route C

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.

ITEM	UM	QTY	DESCRIPTION	UNIT PRICE	DELIVERY TIME FRAME
<p><b>The Missouri Department of Transportation, Central District, desires to establish pricing for reinforced concrete pipe rehabilitation.</b></p> <p style="text-align: center;"><i>See Enclosed Specifications, Details and Pricing Pages</i></p>					

**VENDOR NAME:**

All responses to this Request for Bid **MUST** be submitted with this form and all pages **MUST** be returned to the Buyer listed above at the District mailing address as a **SEALED BID. No faxes.**



**The Missouri Department of Transportation, Central District, desires to establish pricing for reinforced concrete pipe rehabilitation.**

**Location**

Cole County, MO: Route 179 between Mission Drive and Route C.

Pipe location is approximately 1,970 feet North of the on ramp from Route C to Route 179, at station 3 + 439.877.

GPS Coordinates:

38 33' 23.50" N

92 13' 38.58" W

**Project Scope**

Provide additional structure to existing 72" diameter reinforced concrete pipe, using an advanced geopolymer liner that will not significantly reduce the amount of flow through the pipe. Geopolymer liner shall be equivalent to GeoSpray Geopolymer Mortar.

Total length of pipe is approximately 407' feet.

All bidders are required to submit literature on the remedy quoted.

**Unique Site Conditions**

MoDOT shall be responsible for traffic control, if required.

No work shall be performed during the period from 30 minutes before sundown to sunrise, unless otherwise approved by the Project Coordinator. No work will be allowed on Holidays or weekends.

It is the sole responsibility of the contract to do preliminary inspection and final measurements of work site.

**Completion Date**

All work must be completed within 30 days from Notice to Proceed.

**Inspection**

Inspection may be completed while work is in progress.

**Payment**

Payment will be made only after the Project Coordinator completes the final inspection.

**Prevailing Wage**

The awarded contractor shall be required to comply with the prevailing wages as fixed by the Missouri Department of Labor and Industrial Relations. General Wage Order #56 for Cole County, as published by the Missouri Department of Labor and Industrial Relations is in effect. If awarded the contract, the Contractor shall be responsible for submitting notarized weekly payroll affidavit documentation included with the project request for payment. The successful vendor must provide a lien waiver from all material suppliers.



**PRICING / ENDORSEMENT PAGE**

**Pricing/Award**

Award will be made to the lowest total price to complete the project based on the listed specifications.

Proposed Bidders price to provide additional structure to existing 72” diameter reinforced concrete pipe, as specified.

\$ \_\_\_\_\_

**SEALED BIDS TO BE MAILED TO:**

Missouri Department of Transportation  
Central District, General Services  
1511 Missouri Blvd  
Jefferson City, MO 65102

**Clearly Marked: Bid Request CD-13-049B RCP Rehabilitation**

Firm: \_\_\_\_\_

Street: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Email: \_\_\_\_\_



Below are pictures from inside the pipe.





Bid Request CD-13-049B RCP REHABILITATION  
Bid Opening July 9, 2013 1:00 pm CDST



# VENDOR INFORMATION & PREFERENCE CERTIFICATION FORM

## Vendor Information

**All bidders must furnish ALL applicable information requested below**

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

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:

<u>M/WBE Name</u>	<u>Percentage of Contract</u>	<u>M/WBE Certifying Agency</u>

*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/Proposal 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<sup>th</sup>) 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.

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

**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.

**Insurance**

The Contractor shall maintain or cause to be maintained at Contractor's own expense commercial general liability, automobile liability, worker's compensation insurance against negligent acts, errors or omissions of the Contractor, or its subcontractors and anyone directly or indirectly employed by any of them. Any insurance policy required as specified in this Section shall be written by a company that is licensed and authorized to issue such insurance in the state of Missouri and shall provide insurance coverage for not less than the following limits of liability:

- 1) General Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- 2) Automobile Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- 3) Missouri State Workmen's Compensation policy or equivalent in accordance with state law.

Upon request from the Commission, the Contractor shall provide the Commission with certificates of insurance evidencing the required coverage and that such insurance is in effect.

**Subcontracting**

- a. It is specifically understood that no portion of the material or any interest in the contract, shall be subcontracted, transferred, assigned or otherwise disposed of, except with the written consent of MHTC. Request for permission to subcontract or otherwise dispose of any part of the work shall be in writing to MHTC and accompanied by documentation showing that the organization which will perform the work is particularly experienced and equipped for such work.
- b. Consent to subcontract or otherwise dispose of any portion of the work shall not be construed to relieve the Contractor of any responsibility for the production and delivery of the contracted work and the completion of the work within the specified time.
- c. All payments for work performed by a subcontractor shall be made to the Contractor to whom the contract was awarded and the purchase order issued.

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

**Prohibition Of Employment Of Unauthorized Aliens:**

- a. **Non-employment of Unauthorized Aliens:** Pursuant to Section 285.530, RSMo., 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. As a condition for the award of any contract or grant in excess of five thousand dollars by the State or by any political subdivision of the State to a business entity, or for any business entity receiving a state-administered or subsidized tax credit, tax abatement, or loan from the state, the business entity shall:
  - 1) By sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. E-Verify is an example of a federal work authorization program. The business entity must affirm its enrollment and participation in the E-Verify federal work authorization program with respect to the employees proposed to work in connection with the services requested herein by providing acceptable enrollment and participation documentation consisting of **completed** copy of the E-Verify Memorandum of Understanding (MOU). For business entities that are not already enrolled and participating in a federal work authorization program, E-Verify is available at [http://www.dhs.gov/files/programs/gc\\_1185221678150.shtm](http://www.dhs.gov/files/programs/gc_1185221678150.shtm)
  - 2) By sworn affidavit, affirm that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. A copy of the affidavit referenced herein is provided within this document, attached.
- b. **Proof of Lawful Presence For Sole Proprietorships and Partnerships:** If the business entity is a sole proprietorship or partnership, pursuant to Section 208.009, RSMo., each sole proprietor and each general partner shall provide affirmative proof of lawful presence in the United States. Such sole proprietorship or partnership is eligible for temporary public benefits upon submission by each sole proprietor and general partner of a sworn affidavit of his/her lawful presence on the United States until such lawful presence is affirmatively determined, or as otherwise provided by Section 208.009, RSMo. A copy of the affidavit reference herein is provided within this document, attached.

**Prevailing Wage**

- a. The work to be performed under this solicitation is governed by the provisions of Chapter 290 RSMo, as amended, related to prevailing wages to be paid on public works.
- b. If the bid/quote is accepted, the vendor will be required to comply with the prevailing wages as fixed by the Missouri Department of Labor and Industrial Relations, in effect as of the date of the issuance of the solicitation, for each affected craft and type of workmen in the following county(ies): **Cole**. The **General Wage Order # 56** is attached to the bid documents.
- c. Pursuant to the requirements of the Chapter 290 RSMo., not less than the prevailing hourly rate of wages, as set out in the wage order attached to and made part of the specification for work under the contract, must be paid to all workers performing work under the contract.
- d. The Contractor shall provide all information, reports and other documentation as required by MHTC to ensure compliance with Chapter 290 RSMo., as amended, relating to prevailing wages to be paid on public works.
- e. The Contractor shall forfeit a penalty to the contracting public body of \$100 per day (or portion of a day) for each worker that is paid less than the prevailing rate for any work done under the contract by the contractor or by any subcontractor.

**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 16 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 dumped in the absence of the department's aggregate materials checker.
- b. Unless otherwise specified in the proposal, deliveries will be a minimum of **500 Tons Per Day**. No work will be done during the period from **30 minutes before sundown to sunrise**. No deliveries will be made on **Saturdays, Sundays and holidays** unless specifically authorized by the engineer.
- 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**.
- e. Contractor will not be required to provide dozers, loaders, motor graders, or other equipment for shaping of stockpiles, constructing ramps or runways, or leveling of the top of a completed lift, unless otherwise noted herein.

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

**Temporary Suspension of Work**

- a. The **District Engineer** shall have authority to suspend work wholly or in part for such period or periods as may be deemed necessary when weather or other conditions are such that in the opinion of the engineer, the work may be done at a later time with advantage to MoDOT or for failure on the part of the Contractor to comply with any of the provisions of the Contract.
- b. If MoDOT suspends the work for its own advantages and not because of the Contractor's failure to comply with the Contract, the Contractor will be allowed an equal number of calendar days after the completion date for the completion of the work. MoDOT may at its discretion give the Contractor an extension of time for completing the work where the Contractor incurs delays for causes beyond his control.
- c. Normal rainfall is not considered a cause qualifying for an extension of time. Claim for extension of time for all causes must be submitted by the Contractor in writing within **30 Days** after the claimed cause for the delay has ceased to exist.

**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 \$250.00 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.

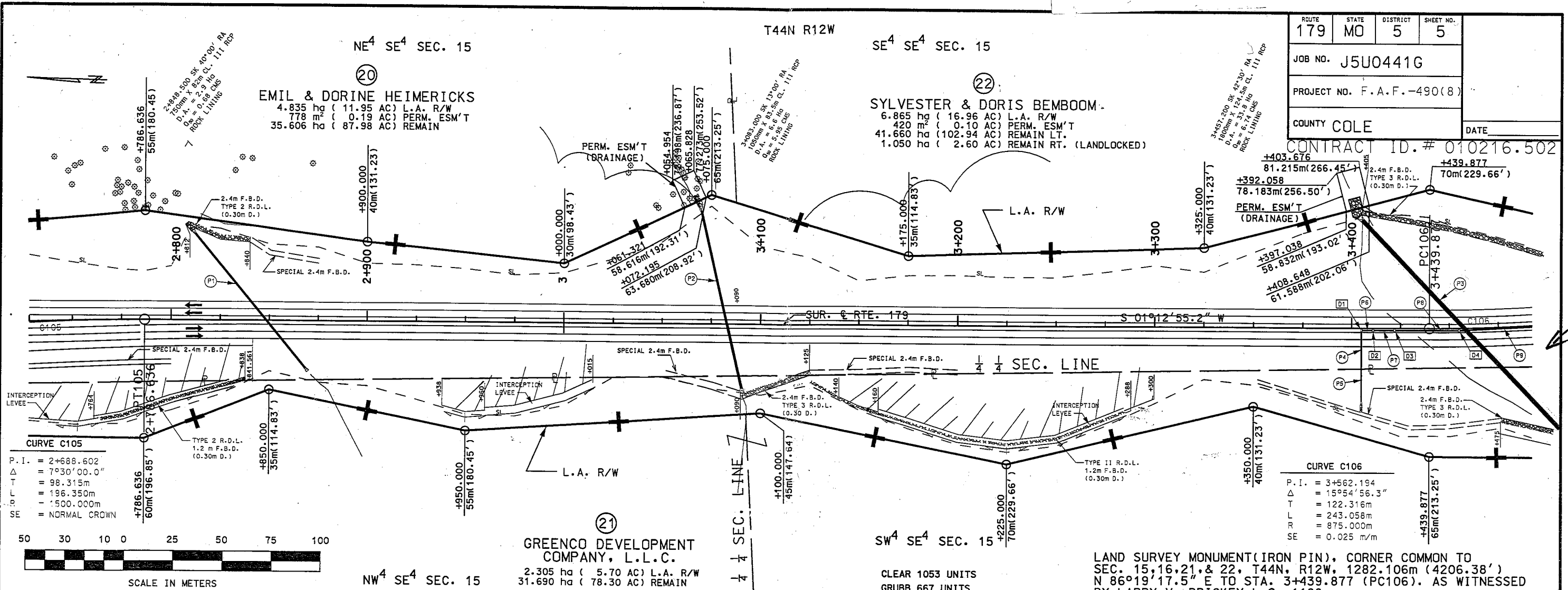




407' - total length

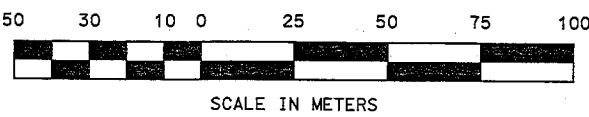
ROUTE	STATE	DISTRICT	SHEET NO.
179	MO	5	5
JOB NO. J5U0441G			
PROJECT NO. F.A.F.-490(8)			
COUNTY COLE			
			DATE

CONTRACT ID. # 010216.502



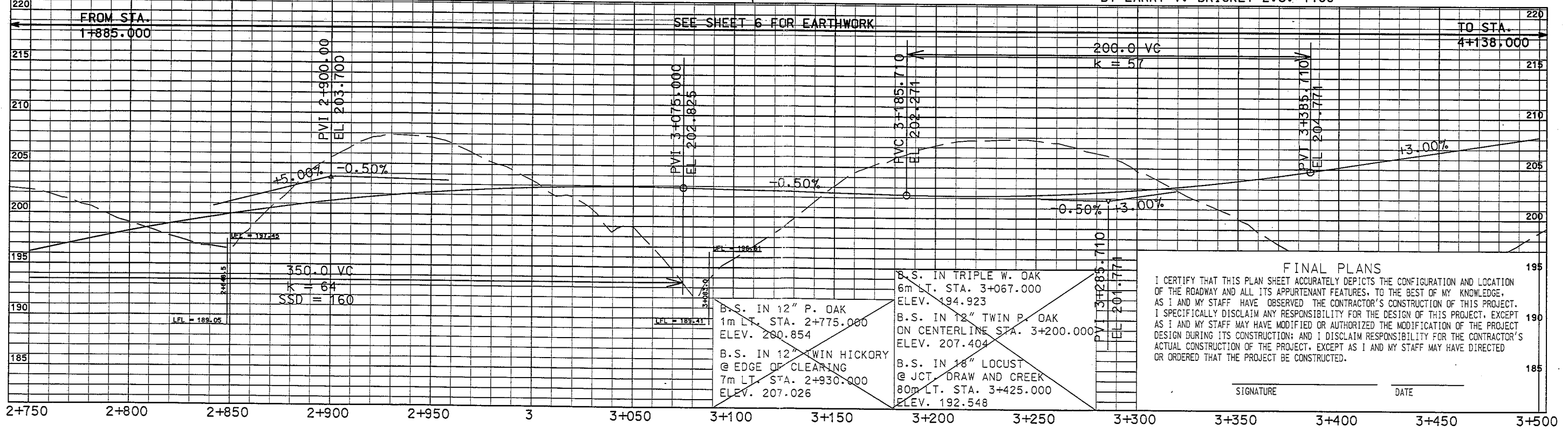
**CURVE C105**  
 P.I. = 2+688.602  
 $\Delta$  = 7°30'00.0"  
 T = 98.315m  
 L = 196.350m  
 R = 1500.000m  
 SE = NORMAL CROWN

**CURVE C106**  
 P.I. = 3+562.194  
 $\Delta$  = 15°54'56.3"  
 T = 122.316m  
 L = 243.058m  
 R = 875.000m  
 SE = 0.025 m/m



**GREENCO DEVELOPMENT COMPANY, L.L.C.**  
 2.305 ha ( 5.70 AC) L.A. R/W  
 31.690 ha ( 78.30 AC) REMAIN

LAND SURVEY MONUMENT (IRON PIN), CORNER COMMON TO SEC. 15, 16, 21, & 22, T44N, R12W, 1282.106m (4206.38') N 86°19'17.5" E TO STA. 3+439.877 (PC106). AS WITNESSED BY LARRY V. BRICKEY L.S. 1188



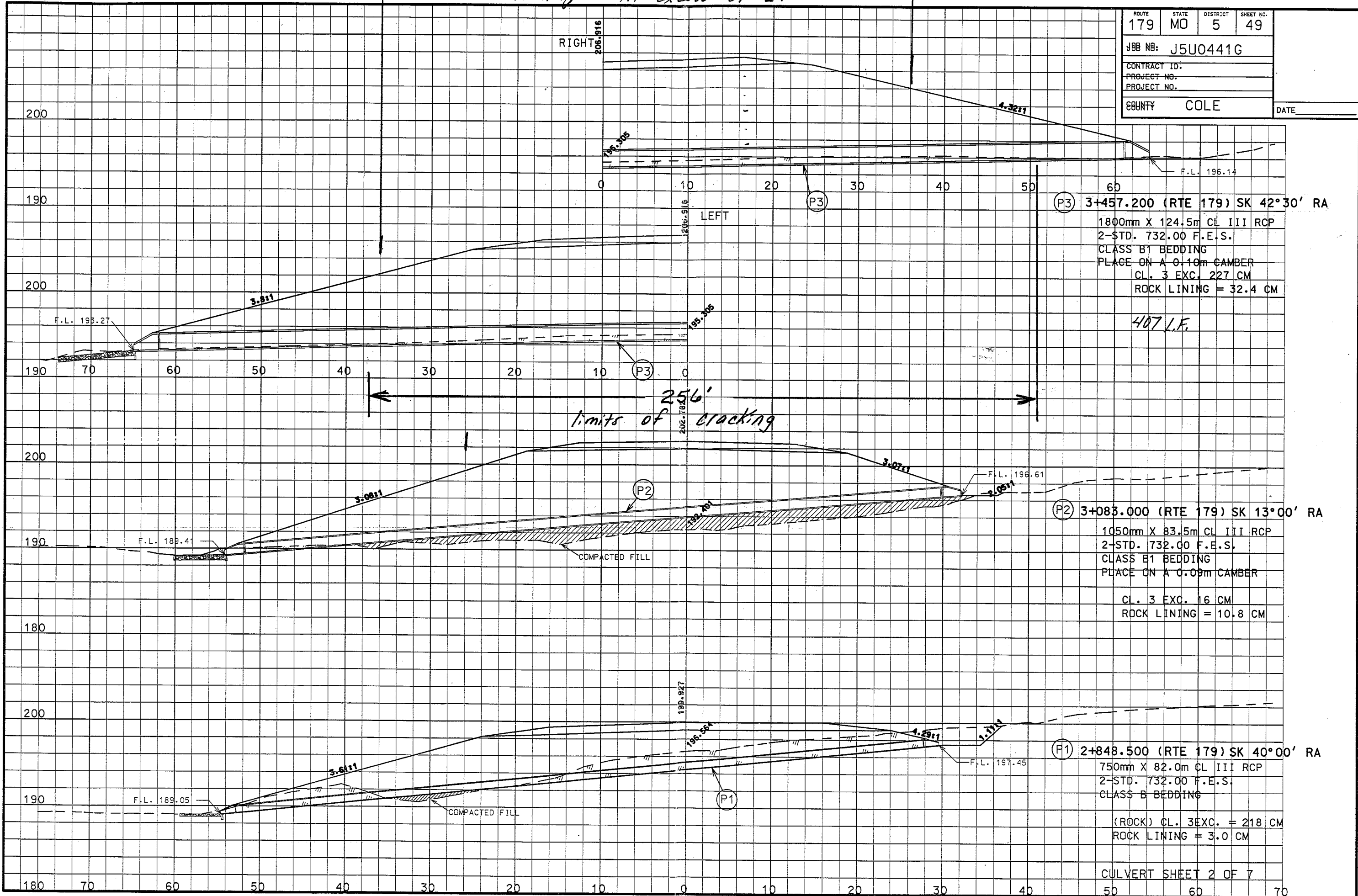
- B.S. IN TRIPLE W. OAK  
6m LT. STA. 3+067.000  
ELEV. 194.923
- B.S. IN 12" P. OAK  
1m LT. STA. 2+775.000  
ELEV. 200.854
- B.S. IN 12" TWIN P. OAK  
ON CENTERLINE STA. 3+200.000  
ELEV. 207.404
- B.S. IN 12" TWIN HICKORY  
@ EDGE OF CLEARING  
7m LT. STA. 2+930.000  
ELEV. 207.026
- B.S. IN 18" LOCUST  
@ JCT. DRAW AND CREEK  
80m LT. STA. 3+425.000  
ELEV. 192.548

**FINAL PLANS**  
 I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

fill heights in excess of 21'

ROUTE	STATE	DISTRICT	SHEET NO.
179	MO	5	49
JOB NO: J5U0441G			
CONTRACT ID:			
PROJECT NO.:			
PROJECT NO.:			
COUNTY	COLE		
DATE			



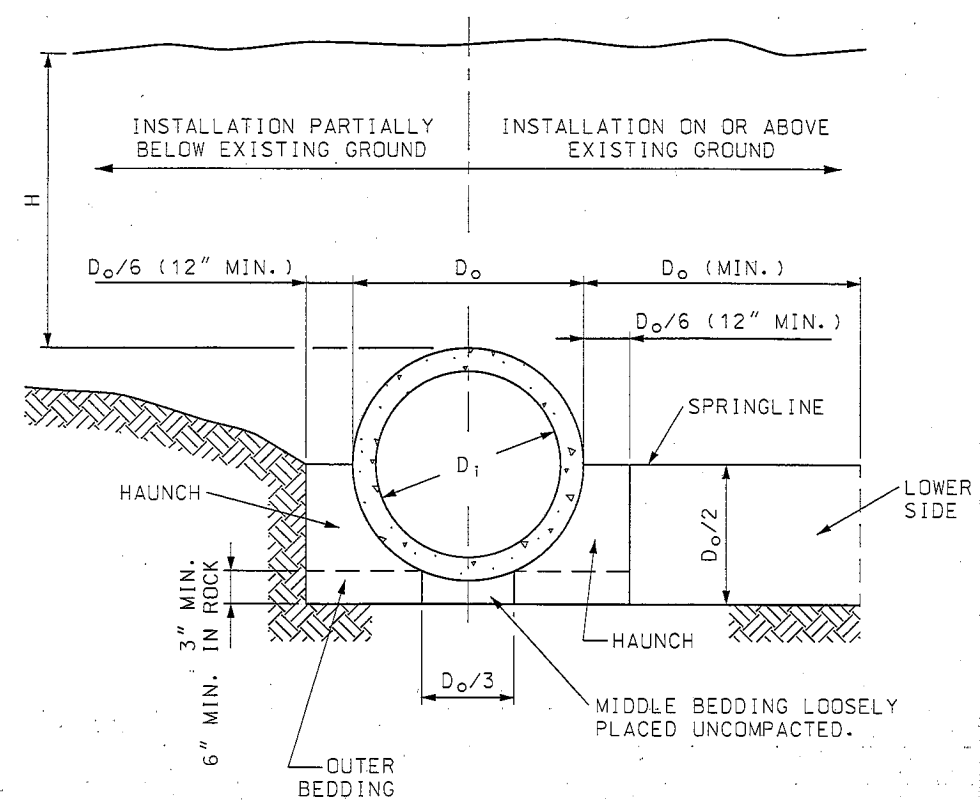
(P3) 3+457.200 (RTE 179) SK 42°30' RA  
 1800mm X 124.5m CL III RCP  
 2-STD. 732.00 F.E.S.  
 CLASS B1 BEDDING  
 PLACE ON A 0.10m CAMBER  
 CL. 3 EXC. 227 CM  
 ROCK LINING = 32.4 CM

407 L.F.

(P2) 3+083.000 (RTE 179) SK 13°00' RA  
 1050mm X 83.5m CL III RCP  
 2-STD. 732.00 F.E.S.  
 CLASS B1 BEDDING  
 PLACE ON A 0.09m CAMBER  
 CL. 3 EXC. 16 CM  
 ROCK LINING = 10.8 CM

(P1) 2+848.500 (RTE 179) SK 40°00' RA  
 750mm X 82.0m CL III RCP  
 2-STD. 732.00 F.E.S.  
 CLASS B BEDDING  
 (ROCK) CL. 3 EXC. = 218 CM  
 ROCK LINING = 3.0 CM

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

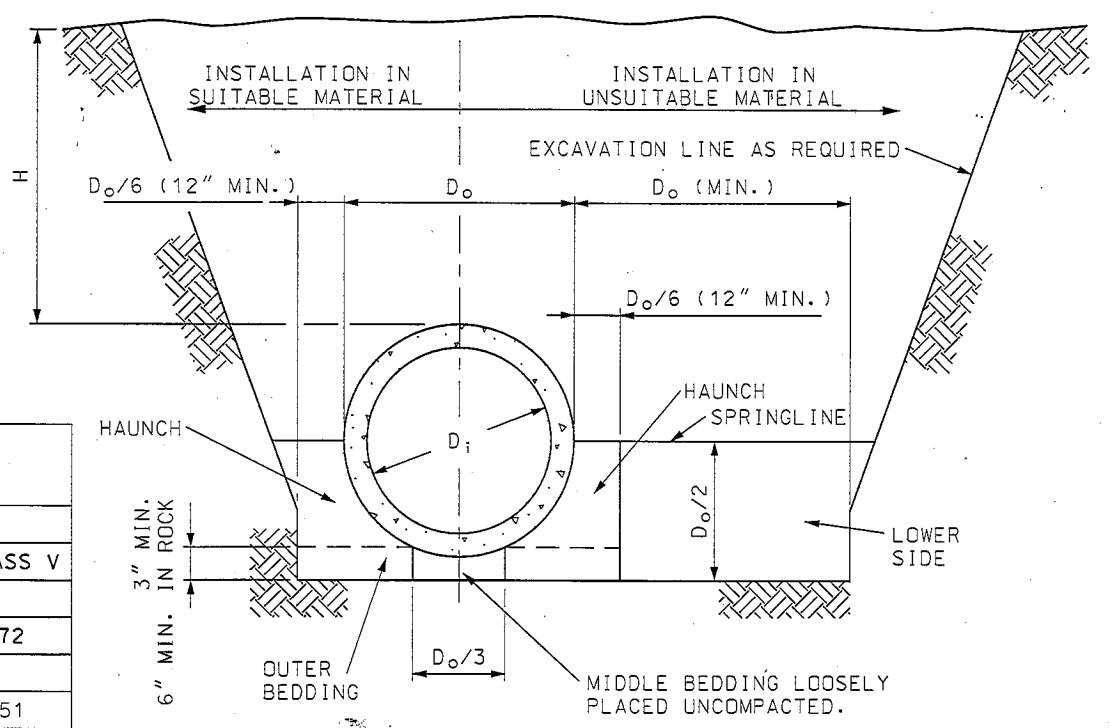


**EMBANKMENT INSTALLATIONS**

- CONSTRUCTION SEQUENCE**
1. PLACE BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
  2. INSTALL PIPE TO GRADE.
  3. COMPACT BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
  4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE SPRINGLINE.
  5. COMPLETE BACKFILL ACCORDING TO SPECIFICATIONS.

INSTALLATION TYPE	CLASS OF PIPE				
	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
	MAXIMUM DIAMETER (INCHES)				
	108	108	108	84	72
	MAXIMUM FILL HEIGHT IN (FEET)				
TYPE 1	12	15	21	33	51
TYPE 2	9	12	17	26	39
TYPE 3	7	9	13	20	30
TYPE 4	4	6	9	13	20

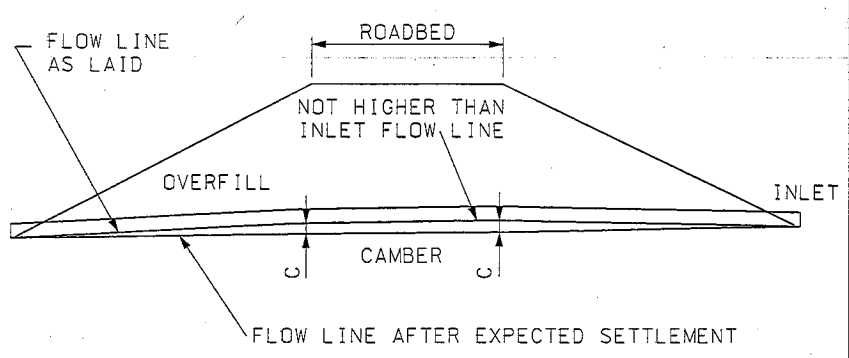
IF FILL HEIGHT EXCEEDS 51 FEET AND PIPE DIAMETER IS 36 INCHES OR LESS A SPECIAL PIPE DESIGN AND INSTALLATION PROCEDURE SHALL BE REQUIRED. IF FILL HEIGHT EXCEEDS 51 FEET AND PIPE DIAMETER IS GREATER THAN 36 INCHES A SPECIAL DESIGN PIPE IS NOT ALLOWED.



**TRENCH INSTALLATION**

- LEGEND -

- D<sub>1</sub> = NORMAL INSIDE DIAMETER OF PIPE.
- D<sub>0</sub> = OUTSIDE DIAMETER OF PIPE.
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- = UNDISTURBED SOIL



**NOTE:**  
ON YIELDING SOIL, PIPE CULVERTS SHALL BE PLACED ON A CAMBERED FLOW LINE. THE AMOUNT OF CAMBER WILL VARY WITH SOIL CONDITION AND SHALL BE SPECIFIED ON THE DESIGN PLANS.

**TYPICAL CAMBERED FLOW LINE**

INSTALLATION TYPE	BEDDING THICKNESS	COMPACTION REQUIREMENTS (MIN. STANDARD PROCTOR %)					
		HAUNCH AND OUTER BEDDING			LOWER SIDE BEDDING		
		CATEGORY 1 SOIL (A)	CATEGORY 2 SOIL (B)	CATEGORY 3 SOIL (C)	CATEGORY 1 SOIL (A)	CATEGORY 2 SOIL (B)	CATEGORY 3 SOIL (C)
1	D <sub>0</sub> /24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE D <sub>0</sub> /12 MINIMUM, NOT LESS THAN 6".	95	N/A	N/A	90	95	100
2	D <sub>0</sub> /24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE D <sub>0</sub> /12 MINIMUM, NOT LESS THAN 6".	90	95	N/A	85	90	95
3	D <sub>0</sub> /24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE D <sub>0</sub> /12 MINIMUM, NOT LESS THAN 6".	85	90	95	85	90	95
4	D <sub>0</sub> /24 MINIMUM, NOT LESS THAN 3". IF ROCK FOUNDATION, USE D <sub>0</sub> /12 MINIMUM, NOT LESS THAN 6".	NO COMPACTION REQUIRED	NO COMPACTION REQUIRED	85	NO COMPACTION REQUIRED	NO COMPACTION REQUIRED	85

- (A) GRAVELLY SAND
- (B) SANDY-SILT
- (C) SILTY CLAY

**GENERAL NOTES:**

- MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE BETWEEN PIPES OF 1/2 D<sub>0</sub> OR 12", WHICHEVER IS GREATER, BUT NOT TO EXCEED 36".
- CLASS I AND CLASS II REINFORCED CONCRETE PIPE SHALL ONLY BE USED FOR SEWERS IN TRENCHES OUTSIDE ROADBED AND STREET LIMITS.

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**RIGID CULVERT INSTALLATION METHODS**

REINFORCED CONCRETE PIPE CULVERTS

STATE OF MISSOURI  
KATHRYN PHILLIPS HARVEY  
NUMBER PE-23761  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY.

DATE EFFECTIVE: 02/01/2012

DATE PREPARED: 12/19/2011

**726.30H**

SHEET NO.  
1 OF 2