



**JEFFERSON COUNTY, TEXAS  
PURCHASING DEPARTMENT**

1149 Pearl Street – First Floor  
Beaumont, Texas 77701  
409-835-8593

**ADDENDUM TO IFB**

IFB Number: **IFB 11-007/KJS**  
IFB Title: **Drainage Improvements to South Central Gardens Area**  
IFB Due: **11:00 AM, February 15, 2011**  
Addendum No.: **# 2**  
Issued (Date): **February 10, 2011**

**TO BIDDER:** This Addendum is an integral part of the IFB package under consideration by you as a Bidder in connection with the subject matter herein identified. Jefferson County deems all sealed proposals to have been proffered in recognition and consideration of the entire IFB package – **including all addenda**. For purposes of clarification, **receipt of this present Addendum by a Bidder should be evidenced by returning it (signed) as part of the Bidder's sealed proposal**. If the Proposal has already been received by the Jefferson County Purchasing Department, Bidder should return this addendum in a separate sealed envelope, clearly marked with the IFB Title, IFB Number, and Opening Date and Time, as stated above.

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Reason for Issuance of this addendum:

**See Attached Sheets addressing questions from Pre-Bid Meeting on February 3, 2011**

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**The information included herein is hereby incorporated into the documents of this present Bid matter and supersedes any conflicting documents or portion thereof previously issued.**

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Receipt of this Addendum is hereby acknowledged by the undersigned Bidder:

ATTEST:

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

Approved by \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
Authorized Signature (Bidder)

\_\_\_\_\_  
Title of Person Signing Above

\_\_\_\_\_  
Typed Name of Business or Individual

\_\_\_\_\_  
Address

February 9, 2011

**ADDENDUM NO. 2**

**CONSTRUCTION OF DRAINAGE IMPROVMENTS TO SOUTH CENTRAL GARDENS**

1. **REPLACE Plan Sheet No. 1 with the attached sheet.** This Plan Sheet has been updated to include the current County officials and staff.
2. **REPLACE Plan Sheet Nos. 21 & 21A with the attached sheets.** These Plan Sheets have been updated to incorporate the changes
3. **ADD Traffic Control Plan Sheet 27, "TCP(2-1)-98 MODIFIED"** to the contract documents. Payment for this item shall be in accordance with **Bid Items A5 & A6** which have been included in the new Bid Forms described below.
4. **Clarification: Item 476 – Jacking, Boring, or Tunneling Pipe or Box.** This item is a Plans Quantity Measurement. The amount of casing beneath the KCS Railroad ROW, shown on the Plans, has been increased to 160 LF. If the contractor wishes to install additional casing to facilitate construction, it may be done so at no additional expense to the Owner. Plan Sheet 21 shows a "Bore Pit Location". The contractor has the option to relocate the actual bore pit to a location that will facilitate construction of the project, so long as the bore pit is located outside of the KCS right-of-way.
5. **Jack & Bore Additional Casing (Bid Item A7):** ADD 130LF of 48-inch diameter steel casing. Casing shall be **0.500-inch wall thickness**, Grade B Steel, with a minimum Yield Strength of 35 ksi, ASTM A139, including wrap-around end seals similar to those proposed for use on the KCS bore. Please note that the wall thicknesses of the casing pipes are not similar to each other.
6. **Clarification: Item 464 (02520A) – Directional Drilled HDPE, DR 17 (IPS) Pipe.** Measurement for this item shall be by the linear foot, complete in place (Not to Exceed the Plans Quantity of 465 LF). It is acceptable for the contractor to install a portion of the HDPE pipe located downstream of the last pipeline crossing and, in between the two sections of casing, using an "open cut" method. If the open cut method is utilized, the following applies:
  - a. The trench for HDPE pipe shall have a width of not less than the outside diameter of the pipe plus 24 inches and not more than the outside diameter of the pipe plus 42 inches.
  - b. The pipe shall be bedded and backfilled using a CLASS I Embedment Material, commonly referred to as #57 Crushed Limestone consisting of angular, crushed stone or rock, ¼" to 1½" in size. Pipe Bedding shall extend a distance of 6-inches above the top of the pipe.

- c. Payment for the Open Cut section of Pipe, as well as Pipe that is installed in a “Casing” will be reimbursed at the unit Price Bid for “Directional Drilled HDPE, DR 17 (IPS)” (Payment for installation of casing are separate Bid Items).
7. **ADD a 10ft x 10ft x 6-inch square concrete rip-rap liner around the discharge end of the siphon**, using 3000 psi concrete and #4 bars @ 12 O.C.E.W. Include the cost of this item in the unit price cost to install the 36” HDPE siphon (Bid Item 464-110).
8. **Clarification: Deductive Alternate #1.** Deductive Alternate #1 includes elimination of the work located between Stations 1+00 and 13+25 (Plan Sheets 17 & 18), which includes, removal and replacement of existing RCP with new RCP, installation of new Safety End Treatment on each culvert, re-grading of the roadside ditch, final stabilization/seedling, cleanup and related activities.
9. **REMOVE** the existing Bid Form and **REPLACE** with the attached Bid Form (*Pages BID 1 thru 10*). The new Bid Form incorporates the following Changes:
  - a. Liquidated Damages have been removed. **The project must be complete by June 30, 2011.**
  - b. Descriptions of Selected Bid Items have been expanded.
  - c. **Bid Items A1 thru A7 have been added.** These Bid Items include payment for: Mobilization (Not To Exceed 5% of Total Base Bid); Re-Grading of Ditches within the Subdivision; Re-Grading of the Ditch along SH347 (Deductive Alt. No. 1); Lowering of 6-Inch Waterline; Barricades, Signage & Traffic Control in all Areas EXCEPT Deductive Alternate No. 1; Barricades, Signage & Traffic Control for Deductive Alternate No. 1; Jack & Bore 48” Casing beneath SH347.
  - d. **Clarification** on Safety End Treatment Item 467-101 (18” RCP) & Item 467-102 (24” RCP): The Safety End Treatment on 18-Inch and 24-Inch RCP **DO NOT** require pipe runners.
  - e. **Clarification** on Safety End Treatment Item 467-103 (36” RCP): **Pipe Runners shall be installed on the 36-Inch RCP S.E.Ts.**
10. **Deductive Alternate No. 1:** This item removes the culvert and grading work on the southwest side of SH347. The approximate quantities that will be removed by Deductive Alternate No. 1 have been itemized on the Bid Sheet (under Deductive Alternate #1) and will be the same quantities used to reduce the estimated quantities shown on the Bid Schedule should the County award the contract using Deductive Alternate #1. Contractor shall provide a **LUMP SUM DEDUCT** in the space provided on the Bid Form. If the Total Lump Sum Deduct does not equal the sum of the individual bid items that are being deleted, an additional line item will be added to the Monthly Pay Estimates that will compensate for the difference. This will not change the overall contract amount.

11. **TDRA Project Signs:** The Contractor shall furnish, install and maintain two (2) project signs that will contain the following wording:

*“This project is funded by the Texas Department of Rural Affairs, to strengthen and enhance the quality of life in smaller and rural communities with funds allocated by the United States Department of Housing and Urban Development through the Community Development Block Grant Program”*

Each sign shall be approximately 24” x 36” in size and shall be securely mounted on a post, or posts, that have been secured to the ground. One sign shall be located in the vicinity of the Bore Pit and a second sign shall be located within the subdivision. Exact locations will be determined at the start of construction. Payment for this work shall be included in the unit price bid for Mobilization.

12. **Delete the following paragraph from Page 23 of 123,** *“Payment for Testing Laboratory: The County’s Testing Agency may, at their option, sample all concrete, make and test all beams and cylinders in accordance with the test methods provided for under the appropriate standard specifications for the various items”*  
and **REPLACE with the following:**

*“The contractor shall be responsible to provide any testing required by the specifications for this project.”*

13. **Liquidated Damages:** Liquidated Damages have been INCREASED to \$5,000.00 per day.

14. **Working in vicinity of Pipelines.** A list of pipeline contacts has been provided on the Plans. Contractor shall notify all pipeline companies at least 48 hours prior to working within the pipeline corridors. Contractors shall provide timber matting over all pipelines where vehicles & equipment will be operating. Matting over pipelines must be acceptable to the Pipeline Companies. There will be no separate payment for this item.

There are no changes to the Bid Date or Bid Time as a result of this Addendum.

Please remember to acknowledge all Addenda on your BID sheet.

# BID FORM

Proposal of \_\_\_\_\_  
(hereinafter called "Bidder") organized and existing under the laws of the State of Texas, doing  
business as a \* \_\_\_\_\_ and acting by and through \_\_\_\_\_.

TO: JEFFERSON COUNTY COMMISSIONERS COURT  
JEFFERSON COUNTY, TEXAS  
1149 PEARL STREET  
BEAUMONT, TX 77701  
(herein after called "OWNER")

Gentlemen:

The BIDDER shall perform the Drainage Improvements to South Central Gardens Area construction as described herein and having examined the plans and specifications with related documents and the sites of the proposed work, and being familiar with all of the conditions surrounding construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to complete the project in accordance with the contract documents, within the time set forth therein, and at the prices stated below. These are to cover all expenses incurred in performing the work required under the contract documents, of which this Bid is a part.

BIDDER hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the OWNER and to fully complete the base bid project **on or before June 30, 2011** as stipulated in the specifications. BIDDER acknowledges that time is of the essence. BIDDER further agrees to pay as liquidated damages the sum of Five Thousand and No/100 (\$5,000.00) Dollars for each consecutive working day thereafter as hereinafter provided in the special conditions. Said liquidated damages shall be in addition to any other remedies otherwise available to the Owner under the laws of the State of Texas for breach by the Contractor, including breach of the time of completion provisions detailed herein.

Enclosed is Bid Security as required.

BIDDER acknowledges receipt of the following ADDENDUM:

\_\_\_\_\_  
\_\_\_\_\_

\*Insert "a corporation," "a partnership," or "an individual," as applicable.

BIDDER agrees to perform all the work described in the Contract Documents for the following unit prices or lump sum:

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
104	101	700	S.Y.	Remove Concrete (Driveways) (6") @ _____	\$ _____	\$ _____
				Per Square Yard		
104	102	170	S.Y.	Remove Asphalt (Pavement) @ _____	\$ _____	\$ _____
				Per Square Yard		
104	103	220	S.Y.	Remove Asphalt (Driveways) @ _____	\$ _____	\$ _____
				Per Square Yard		
104	104	30	S.Y.	Remove Concrete Sidewalk @ _____	\$ _____	\$ _____
				Per Square Yard		
162	101	380	S.Y.	Sodding for Erosion Control @ _____	\$ _____	\$ _____
				Per Square Yard		
247	101	1,250	S.Y.	Flexible Base (6") @ _____	\$ _____	\$ _____
				Per Square Yard		
351	101	360	S.Y.	Flexible Pavement Repair (Pavement & Driveways) @ _____	\$ _____	\$ _____
				Per Square Yard		

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
361	101	590	S.Y.	Full Depth Concrete Repair (Driveway 6") @		
				Per Square Yard	\$	\$
400	101	100	TON	Cement Stabilized Sand Backfill (When Ordered by Engineer) @		
				Per Ton	\$	\$
402	101	1	L.S.	Design of Trench Safety, Including any Geotechnical Investigation, Complete @		
				Per Lump Sum	\$	\$
402	102	1,000	L.F.	Trench Excavation Protection Complete in Place @		
				Per Linear Foot	\$	\$
420	101	7	Ea.	Concrete Structures (6'x12' manhole) Complete in Place @		
				Per Each	\$	\$
420	102	1	Ea.	Concrete Structures (8'x23' manhole) Complete in Place @		
				Per Each	\$	\$
420	103	11	Ea.	Concrete Structures (Manhole with Split Casing) When Ordered by Engineer, Complete in Place @		
				Per Each	\$	\$

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
464	101	3,200	L.F.	Reinforced Concrete Pipe (15"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
464	102	2,050	L.F.	Reinforced Concrete Pipe (18"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
464	103	70	L.F.	Reinforced Concrete Pipe (21"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
464	104	300	L.F.	Reinforced Concrete Pipe (24"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
464	105	12	L.F.	Reinforced Concrete Pipe (30"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		



Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
464	106	180	L.F.	Reinforced Concrete Pipe (36"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @ _____	\$ _____	\$ _____
				Per Linear Foot		
464	107	40	L.F.	Reinforced Concrete Pipe (42"), Including Removal and Disposal of Existing RCP (all sizes), Bedding & Backfill, Complete in Place  @ _____	\$ _____	\$ _____
				Per Linear Foot		
464	110	465	L.F.	HDPE DR17 (IPS) Pipe (36") Directional Drilled, Including Fusing, Equipment, and Associated Trench Safety, Complete in Place  @ _____	\$ _____	\$ _____
				Per Linear Foot		
465	101	12	Ea.	Inlet (Precast with Grate) Complete in Place  @ _____	\$ _____	\$ _____
				Per Each		
467	101	1	Ea.	Precast Safety End Treatment (Type 2)(18")(3:1)(P), Complete in Place  @ _____	\$ _____	\$ _____
				Per Each		

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
467	102	10	Ea.	Precast Safety End Treatment (Type 2)(24")(6:1)(P), Complete in Place  @		
				_____	\$ _____	\$ _____
				Per Each		
467	103	11	Ea.	Precast Safety End Treatment (Type 2)(36")(6:1)(P), Including Pipe Runners, Complete in Place  @		
				_____	\$ _____	\$ _____
				Per Each		
476	101	110	L.F.	Jacking, Boring or Tunneling 48-inch OD Steel Casing, 11/16" Wall Thickness, Including End Seals, Complete in Place  @		
				_____	\$ _____	\$ _____
				Per Linear Foot		
9040	108	50	L.F.	HDPE Pipe (18"), Including Cement Stabilized Sand Bedding & Backfill, and Removal & Disposal of Existing Pipe, All Sizes, Complete in Place  @		
				_____	\$ _____	\$ _____
				Per Linear Foot		
9040	109	80	L.F.	HDPE Pipe (24"), Including Cement Stabilized Sand Bedding & Backfill, and Removal & Disposal of Existing Pipe, All Sizes, Complete in Place  @		
				_____	\$ _____	\$ _____
				Per Linear Foot		

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
9040	111	2,500	L.F.	HDPE Pipe (36"), Including Cement Stabilized Sand Bedding & Backfill, and Removal & Disposal of Existing Pipe, All Sizes, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
9040	112	40	L.F.	HDPE Pipe (42"), Including Cement Stabilized Sand Bedding & Backfill, and Removal & Disposal of Existing Pipe, All Sizes, Complete in Place  @		
				_____	\$	\$
				Per Linear Foot		
A1		1	L.S.	Mobilization, Bonds & Insurance (Cannot Exceed 5% of "Total Amount Base Bid")  @		
				_____	\$	\$
				Per Lump Sum		
A2		1	L.S.	Regrade Existing Ditches to Lines and Grades shown on Plans, Including Disposal of Spoil Material. <b>All Locations within Residential Subdivision</b> (Plan Sheets 5-16). Complete.  @		
				_____	\$	\$
				Per Lump Sum		

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
A3		1	L.S.	Regrade Existing Ditches to Lines and Grades shown on Plans, Including Disposal of Spoil Material. <b>Areas Located Along SH 347</b> (Plan Sheets 17 &18). Complete.  @		
				_____	\$ _____	\$ _____
				Per Lump Sum		
A4		1	L.S.	Lower 6-inch Waterline at Approx STA 0+00 Shown on Plan Sheet 4, Including all Adapters, Fittings, and Related Materials, to Provide 12-inch Minimum Separation Distance Between the Existing Waterline and Proposed 36-Inch Storm Sewer Pipes, Complete in Place.  @		
				_____	\$ _____	\$ _____
				Per Lump Sum		
A5		1	L.S.	Furnish, Install & Maintain Traffic Control Signage & Barricades for All Work Areas Located Within the Project, <b>EXCEPT</b> for the Area Described as Deductive Alternate No. 1 (Deductive Alternate No. 1 is Shown on Plan Sheets 17 & 18).  @		
				_____	\$ _____	\$ _____
				Per Lump Sum		
A6		1	L.S.	Furnish, Install & Maintain Traffic Control Signage & Barricades for All Work Areas Described as <b>Deductive Alternate No. 1</b> (Plan Sheets 17 & 18).  @		
				_____	\$ _____	\$ _____
				Per Lump Sum		

Item No.	Item Code	Aprx. Qty	Unit	Description of Item with Unit Bid Price Written in Words	Unit Price	Total Amount
A7		130	L.F.	Jacking, Boring or Tunneling 48-inch OD Steel Casing, 0.500" Wall Thickness, Including End Seals, Complete in Place		
				@		
				_____	\$ _____	\$ _____
				Per Linear Foot		

TOTAL AMOUNT BASE BID \$ \_\_\_\_\_

(TOTAL AMOUNT BASE BID WRITTEN IN WORDS)

**BASE BID**

Non-Consumable Material and Equipment	\$ _____
Skill, Labor and Consumable Material and Equipment	\$ _____
Total Amount Base Bid	\$ _____

The prices mentioned herein shall be full compensation for furnishing all materials, equipment, labor and all other expenses necessary to perform the work in accordance with these Specifications and Contract Documents.

Amounts are to be given in words and in numbers and the amount shown in words shall govern in the event a discrepancy occurs.

**DEDUCTIVE ALTERNATE No. 1**

Deduction for the deletion of S.H. 347 Ditch Improvements including driveway, pipe, safety end treatment and ditch re-grading as shown on plan sheets 17 and 18. The following is an itemized quantity list of deductions:

- Item 104-101 Remove Conc. (Driveway) Delete 100 SY
- Item 104-103 Remove Asph (Driveway) Delete 34 SY
- Item 247-101 Flexible Base (6") Delete 38 SY
- Item 351-101 Flexible Pvmt Repair – Delete 34 SY
- Item 361-101 Full Depth Conc Repair – Delete 108 SY
- Item 464-104 R&R 24" RCP – Delete 138 LF
- Item 464-106 R&R 36" RCP – Delete 168 LF
- Item 467-102 SET (Type 2)(6:1)(24") – Delete 10 EA
- Item 467-103 SET (Type 2)(6:1)(36') – Delete 10 EA
- Item A3 – Re-Grade Exist Ditch (SH347) – Delete 1 LS
- Item A6 – Traffic Control / Signage (Deduct #1) – Delete 1 LS

\$	Deduct
Lump Sum	

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(TOTAL AMOUNT DEDUCTIVE ALTERNATE NO. 1 WRITTEN IN WORDS)

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RESPECTFULLY SUBMITTED,

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
CITY, STATE & ZIP

\_\_\_\_\_  
LICENSE NUMBER (IF APPLICABLE)

(SEAL – if BID is by a Corporation)

ATTEST: \_\_\_\_\_

# JEFFERSON COUNTY, TEXAS DRAINAGE IMPROVEMENTS SOUTH CENTRAL GARDENS AREA

JEFFERSON COUNTY TEXAS  
COMMISSIONERS COURT

JEFF BRANICK  
EDDIE ARNOLD  
BRENT WEAVER  
MICHAEL SINEGAL  
EVERETTE "BO" ALFRED

COUNTY JUDGE  
COMM. PCT. 1  
COMM. PCT. 2  
COMM. PCT. 3  
COMM. PCT. 4



APPROVED

DIRECTOR OF ENGINEERING

BY: *Donald M. Rao*  
DONALD M. RAO

DATE

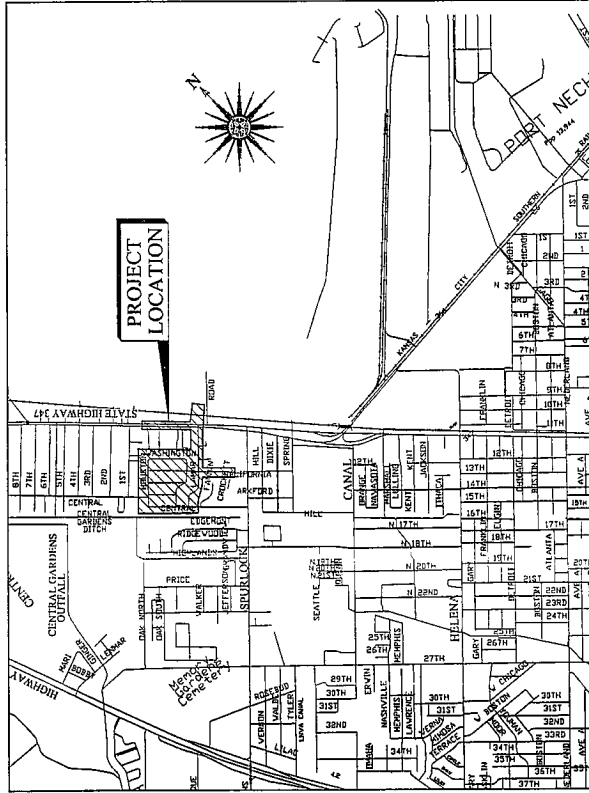
BOB SHAW CONSULTING ENGINEERS

DATE

BY: *Edward A. Long, Jr.*  
EDWARD A. LONG, JR., P.E. 83960



JOB NO. ICE-006  
SEPTEMBER 2010



"THIS PROJECT IS FUNDED BY THE TEXAS DEPARTMENT OF RURAL AFFAIRS THROUGH THE COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM.

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & GENERAL INFORMATION
3	INDEX SHEET
4-18	PLAN & PROFILE
19	CONCRETE BOX DETAILS
20	DETAILS
21	PLAN & PROFILE FOR DIRECTIONAL FLOW
21A	DIRECTIONAL FLOW DETAILS
22	SWP LAYOUT
23	SWP DETAILS
24-26	SWP DETAILS

PREPARED BY  
**BOB SHAW**  
Consulting Engineers  
4742 Park City Highway, Suite 205, Fort Worth, Texas 76106 (817)882-0333  
Texas Firm Registration No. 260



The seal appears on this document was accredited by the State Board of Professional Engineers on February 8, 2011.



**BOB SHAW**  
Consulting Engineers  
494 Two Star Way, Suite 300  
Houston, Texas 77057  
Texas Firm Registration No. 260

CALL BEFORE YOU DIG  
TEXAS ONE CALL SYSTEM  
1-800-4-A-SHAW  
40 HR. NOTICE REQUIRED  
WWW.TEXASONECALL.COM

DATE:	AS SHOWN	DATE:	08-11-11
BY:	AS SHOWN	DATE:	08-11-11
APP. NO.:	AS SHOWN	DATE:	08-11-11
PROJECT NO.:	AS SHOWN	DATE:	08-11-11
SHEET NO.:	AS SHOWN	DATE:	08-11-11

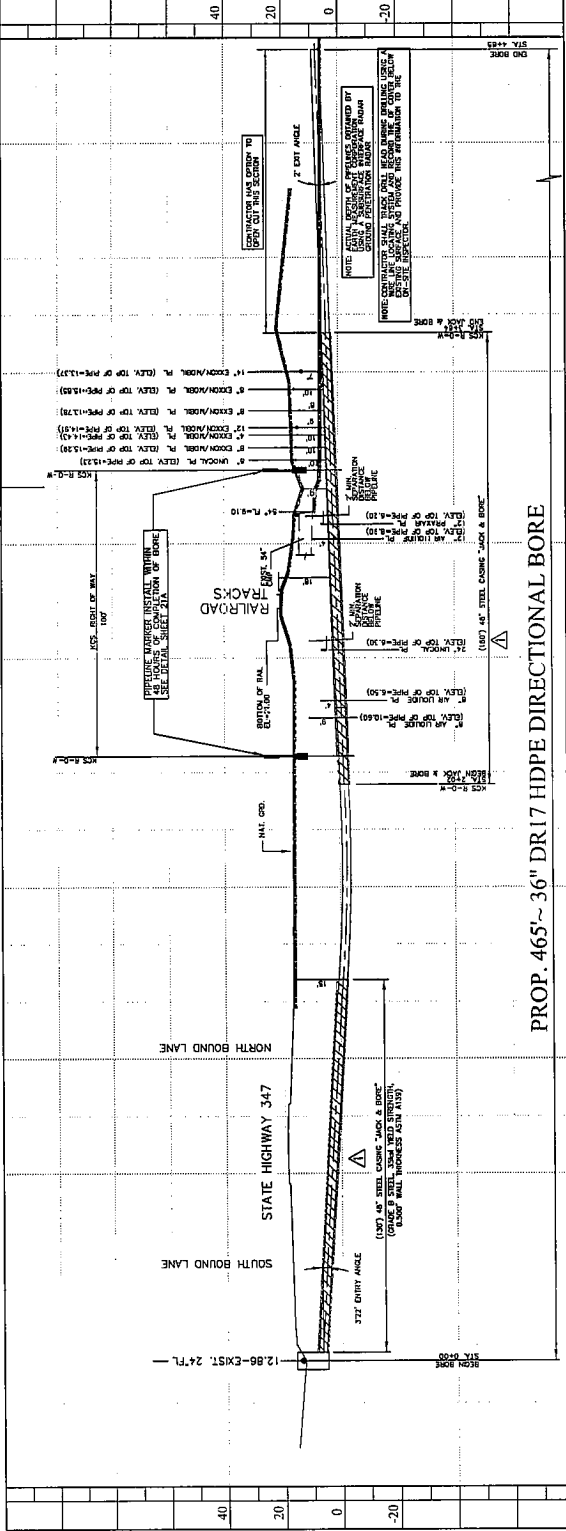
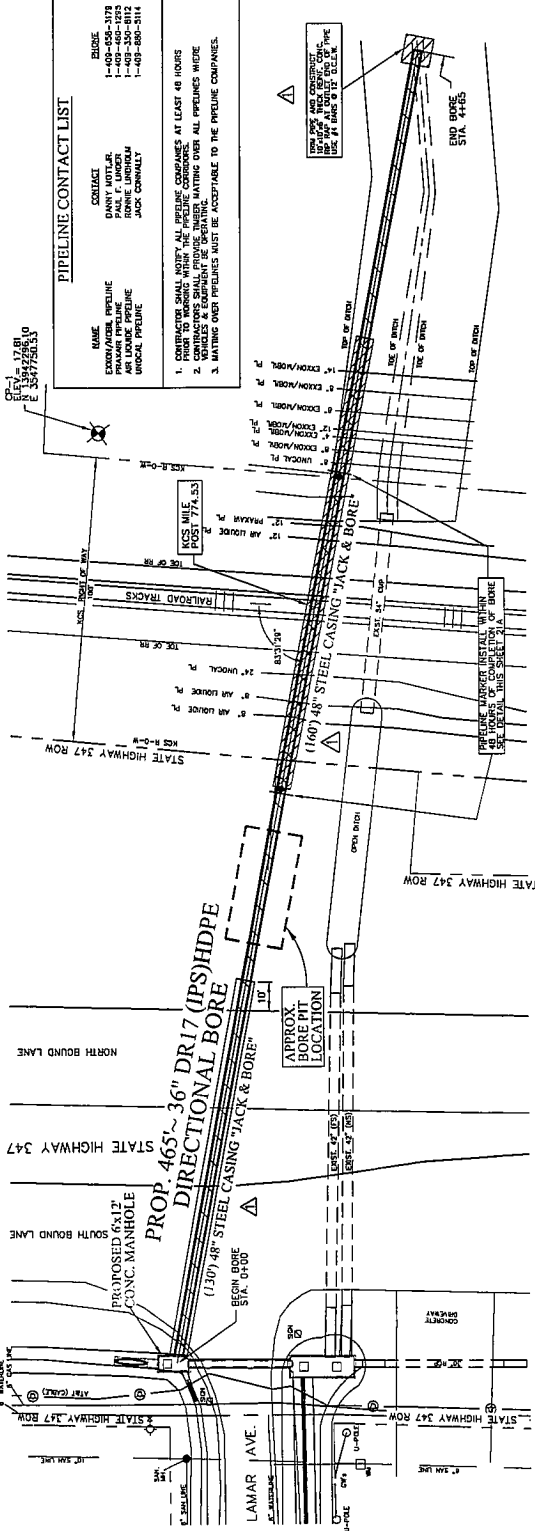
JEFFERSON COUNTY, TEXAS  
DRAINAGE IMPROVEMENTS  
SOUTH CENTRAL GARDENS AREA  
PLAN & PROFILE FOR  
DIRECTIONAL BORE

SHEET 21 OF 26 REV.

**PIPELINE CONTACT LIST**

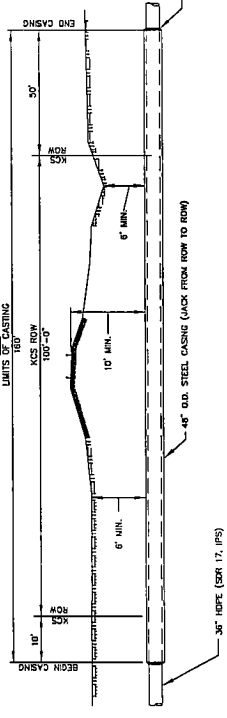
NAME	CONTACT	PHONE
EXXON/MOBIL PIPELINE	DANNY WOTLER	1-409-506-3178
AIR LIAISON PIPELINE	RONNIE LINDSELM	1-409-350-8112
UNOCAL PIPELINE	JACK CONNOLLY	1-409-880-3114

- CONTRACTOR SHALL NOTIFY ALL PIPELINE COMPANIES AT LEAST 48 HOURS PRIOR TO WORKING WITH THE PIPELINE COMPANIES.
- CONTRACTOR SHALL NOTIFY ALL PIPELINE COMPANIES AT LEAST 48 HOURS PRIOR TO WORKING WITH THE PIPELINE COMPANIES.
- NOTICE OF WORKING WITH PIPELINE COMPANIES MUST BE ACCEPTABLE TO THE PIPELINE COMPANIES.



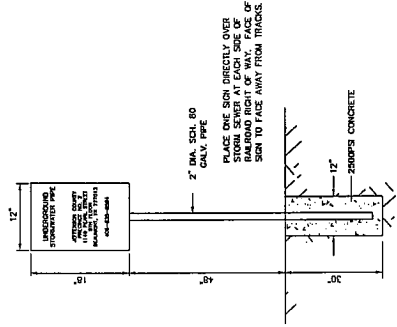
**PROP. 465'~36" DR17 HDPE DIRECTIONAL BORE**





**RAIL CROSSING**

- GENERAL:**
1. THIS CASING IS DESIGNED FOR COOPER E80 LIVE LOAD WITH IMPACT SO LONG AS COVER IS 1'-8" MINIMUM.
- MATERIALS:**
1. CASING PIPE SHALL HAVE AN OUTSIDE DIAMETER OF 48 INCHES AND A WALL THICKNESS OF 11/16" INCH.
  2. CASING PIPE SHALL BE IN ACCORDANCE WITH ASTM INTERNATIONAL A132. PIPE TO BE GRADE B AND STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 35KSI.
  3. JOINTS SHALL BE MADE BY BUTT WELDING. JOINTS SHALL BE MADE BY BUTT WELDING. JOINTS SHALL BE MADE BY BUTT WELDING. JOINTS SHALL BE MADE BY BUTT WELDING.
  4. ENDS OF CASING PIPE SHALL BE SEAMLESS. ENDS SHALL BE SUITABLE EXCEED FOR BELL WELDING SECTIONS TOGETHER.
  5. ENDS OF CASING PIPE SHALL BE SEAMLESS. ENDS SHALL BE SUITABLE EXCEED FOR BELL WELDING SECTIONS TOGETHER.
  6. ENDS OF CASING PIPE SHALL BE SEAMLESS. ENDS SHALL BE SUITABLE EXCEED FOR BELL WELDING SECTIONS TOGETHER.
- FIELD WELDING:**
1. WELDERS MUST POSSESS VALID CERTIFICATION.
- JACOBS:**
1. WHERE INDICATED, PIPE TO BE WELDED AND LOADED INTO PLACE. WELDS SHALL BE MADE BY BUTT WELDING. WELDS SHALL BE MADE BY BUTT WELDING. WELDS SHALL BE MADE BY BUTT WELDING.
  2. WELDS SHALL BE MADE BY BUTT WELDING. WELDS SHALL BE MADE BY BUTT WELDING. WELDS SHALL BE MADE BY BUTT WELDING.
  3. CONTRACTOR SHALL NOT PERFORM WORK ON THE CROSSING WHILE A MOVING TRAIN IS ON THE TRACK.
- BORED & JACKED TOLERANCE:**
1. THE PERMISSIBLE TOLERANCE OF A TRUE LINE IS +/-3 INCHES.



**PIPELINE MARKER**

- PLACE ONE SIGN DIRECTLY OVER SIGNAL SIGN AT EACH SIDE OF RAILROAD RIGHT OF WAY. FACE OF SIGN TO FACE AWAY FROM TRACK.



WHERE INDICATED, AND P ARE EXPRESSED IN INCHES.

ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO C OF TRACK.

USE AS BUILT. THIS AS BUILT IS NOT TO BE USED FOR CONSTRUCTION OF OTHER PROJECTS.

FOR EXAMINATION WHO (PROVIDED INTO MATTERS) THE LAND SURVEYOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DATA.

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This seal operating on this project was prepared by Jeffery A. Lusk, P.E. on February 8, 2011.



This seal operating on this project was prepared by Bob Shaw, P.E. on February 8, 2011.

**BOB SHAW**  
Consulting Engineers  
4742 Hwy. 529, Waco, TX 76787  
(817) 870-1111  
WWW.TEXASREGISTERED.COM

CALL BEFORE YOU DIG  
1-800-245-4545  
UTILITY LOCATING SERVICE  
WWW.TEXASREGISTERED.COM

SCALE	AS SHOWN	DATE	2-8-11
BY	JAL	APPROVED BY	JAL
CHECKED BY	JAL	DATE	2-8-11
DESIGNED BY	JAL	DATE	2-8-11
DRAWN BY	JAL	DATE	2-8-11
PROJECT NO.	JEFFERSON COUNTY, TEXAS DRAINAGE IMPROVEMENTS SOUTH CENTRAL GARDENS AREA DIRECTIONAL BORE DETAILS		

SHEET 21A OF 26

REV.

**LEGEND**

Type III Barricade  Channelizing Devices  Flag  
 Heavy Work Vehicle  Truck Mounted Attenuator  
 Trailer Mounted Flashing Arrow Panel  Portable Changeable Message Sign  
 Flagger  Sign Post

Spacing	Formula	Known Taper Length	Known Offset	Suggested Minimum Sign Spacing	Known Sign Spacing
30	$L = 30$	150'	165'	180'	30'
35	$L = 60$	205'	225'	245'	35'
40		255'	295'	320'	40'
45		450'	495'	540'	45'
50		500'	505'	600'	50'
55	$L = W$	550'	605'	660'	55'
60		600'	660'	720'	60'
65		650'	715'	780'	65'
70		700'	770'	840'	70'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (ft.) W=Width of Offset (ft.) S=Posted Speed (mph)

MOBILE	SHORT DURATION	SHORT TERM STATIONARY TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
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**GENERAL NOTES**

- Unless otherwise stated in the plans, flags attached to signs are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
- Type III barricades are required on both sides of work area at all times. (See BC Standards for barricade details.)
- Stockpiled material should be placed a minimum 30' from nearest traveled way.
- On high speed facilities advance warning signs should be installed approximately 3X from the work area or from the beginning of a lane or shoulder taper. On low speed facilities the advance warning sign should be placed on the X' minimum distance.

Only pre-qualified suppliers shall be used. A list of acceptable products and their sources may be obtained by writing or faxing:

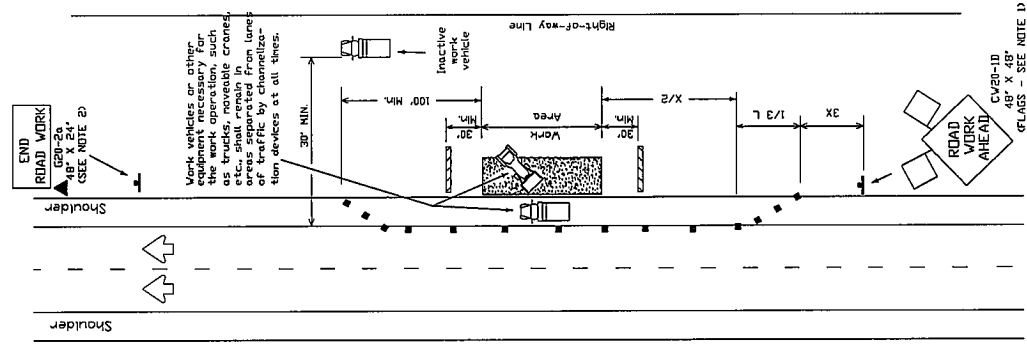
Standards Engineer  
 Traffic Operations Division - TE  
 Department of Transportation  
 125 East 11th Street  
 Austin, Texas 78701-2483  
 Phone (512) 416-3335  
 Fax (512) 416-3300  
 E-mail: [TE@dot.state.texas.gov](mailto:TE@dot.state.texas.gov)

STANDARD PLANS  
 TEXAS DEPARTMENT OF TRANSPORTATION  
 Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP(2-1)-98 MODIFIED

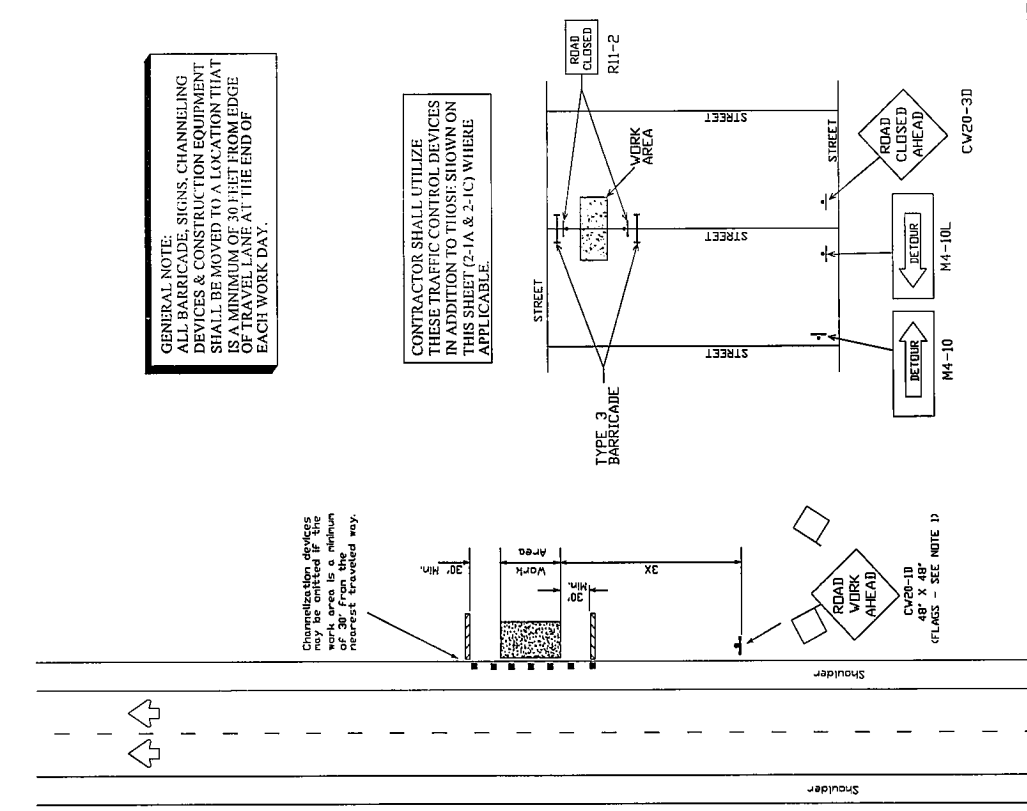
PROJECT NO.	DATE	BY	CHKD BY
1-97	6		
SHEET NO.	TOTAL SHEETS	DATE	BY
27	6		



TCP (2-1c)  
 Work Vehicles on Shoulder  
 FLAGS - SEE NOTE 1)

**GENERAL NOTE:**  
 ALL BARRICADE, SIGNS, CHANNELING DEVICES & CONSTRUCTION EQUIPMENT SHALL BE MOVED TO A LOCATION THAT IS A MINIMUM OF 30 FEET FROM EDGE OF TRAVEL LANE AT THE END OF EACH WORK DAY.

**CONTRACTOR SHALL UTILIZE THESE TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE SHOWN ON THIS SHEET (2-1A & 2-1C) WHERE APPLICABLE.**



TCP (2-1a)  
 Work Area Near Shoulder  
 FLAGS - SEE NOTE 1)