

**CAMINO REAL REGIONAL MOBILITY AUTHORITY
BOARD RESOLUTION**

WHEREAS, the Camino Real Regional Mobility Authority (CRRMA) entered into a construction contract dated October 24, 2016 (Contract) with International Eagle Enterprises, Inc. (Contractor) for the construction of the Old Hueco Tanks Road Project (Project);

WHEREAS, during construction, the Contractor requested the ability to install certain box culverts using a pre-cast method, rather than the cast-in-place method required by the Project's plans; and

WHEREAS, there is no cost or time impact to the Project for the requested alternate construction method, the County of El Paso has approved this approach and the parties therefore desire to execute Change Order No. 1 to the Contract, for such change in process;

NOW, THEREFORE, BE IT RESOLVED BY THE CAMINO REAL REGIONAL MOBILITY AUTHORITY:

THAT the Executive Director be authorized to execute Change Order No. 1 with International Eagle Enterprises, Inc., to permit certain box culverts to be cast-in-place on the Old Hueco Tanks Road Project.

PASSED AND APPROVED THIS 6TH DAY OF JUNE 2017.

**CAMINO REAL REGIONAL
MOBILITY AUTHORITY**

Joe D. Wardy, Vice Chair

ATTEST:

Joe R. Fernandez, Board Secretary

APPROVED AS TO CONTENT:

Raymond L. Telles
Executive Director

CONSTRUCTION CONTRACT CHANGE ORDER NUMBER #1

1. CONTRACTOR: International Eagle Enterprises, Inc

2. Change Order Work Limits: Sta. 9+00 OHT CL to Sta. 43+80 OHT CL

3. Type of Change (on federal-aid non-exempt projects): Minor (Major/Minor)

4. Describe the change and the reason for the change order. When necessary, include exceptions to this agreement.

This is a no cost change order. No additional time will be added to the contract for completing the work.

Original plans required box culverts at Mesa Drain and Mesa Spur to be Pre-cast. See attached original plans sheets 100 and 104. During Construction activities, the contractor proposed a revised design to the box culverts and requested a change in method of work to cast in place. The contractor submitted revised plans for a cast in place box culverts in lieu of pre cast at Mesa drain STA 9+00 OHT CL and Mesa Spur 43+80 OHT CL. See design drawings for cast in place SCC 10 and SCC 5&6.

CCSJ:	<u>0924-06-111</u>
Project:	<u>CS 0924 06 111</u>
Highway:	<u>Old Hueco Tanks Rd</u>
County:	<u>El Paso</u>
District:	<u>ELP</u>
Contract Number:	<u>N/A</u>

5. New or revised plan sheet(s) are attached and numbered: New Sheets Old Hueco Tanks Rd Single Box Culverts Cast in Place

Each signatory hereby warrants that each has the authority to execute this Change Order.

<p>By signing this change order, the contractor agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit; or loss of compensation as a result of this change. Further, the contractor agrees that this agreement is made in accordance with Item 4 and the Contract. Exceptions should be noted in the response for #5 above.</p>	<p>The following information must be provided</p> <p>Time Ext. #0 : <u>0</u> Days added on this C.O.#1: _____</p> <p>Amt. added by this change order: <u>No Cost CO</u></p>
	<p>THE CONTRACTOR Date <u>05/25/17</u></p>
	<p>By <u>[Signature]</u></p>
	<p>Typed/Printed Name <u>Alfredo Comal</u></p> <p>Typed/Printed Title <u>President</u></p>

CAMINO REAL REGIONAL MOBILITY AUTHORITY

Executed for and approved by the Camino Real Regional Mobility Authority for the purpose and effect of activating and/or carrying out the orders, established policies or work programs heretofore approved and authorized by the Texas Transportation Commission.

Signature

Date

Typed/Printed Name and Title

LIST OF ATTACHMENTS

- Attachment A Letter to TxDOT "Cast in place box culvert in lieu of pre cast" Old Hueco Tanks Rd
- Attachment B EPCWID No. 1 License 1480 and 1482
- Attachment C Mesa Drain Single Box Culverts Cast in Place Pages 1 and 2
Mesa Spur Single Box Culverts Cast in Place Pages 1 and 2
- Attachment D Old Hueco Tanks Rd Culvert Layout Plans Sheet 100 and 104

CAMINO REAL REGIONAL MOBILITY AUTHORITY

CONSTRUCTION CONTRACT CHANGE ORDER NUMBER 1

Third Party Funding Notification Sheet

This form is used when the subject change order involves funding by a source other than CRRMA, and involves third parties who are providing funding under an Advance Funding Agreement or Donation Agreement.

1. Outside funding provided by:

County of El Paso

(Outside Entity's Legal Name)

2. Type of outside funding agreement for this change:

Existing Amended New
[Check one]

3. Indicate the type and amount of funding:

Fixed Price (Lump Sum) (Estimated Amount) _____

Actual Cost _____

(a) Contract Items (Bid Items): _____

TOTAL \$0.00

CCSJ	<u>0924-06-111</u>
	<u>Old Hueco Tanks Project</u>
Highway:	<u>N/A</u>
County:	<u>El Paso</u>
District:	<u>N/A</u>
Contract Number:	_____

Use as needed:

I hereby acknowledge notification of the modifications covered by this Change Order.

Date _____

By _____

Typed/Printed Name _____

Typed/Printed Title _____

* The percentage (%) for E&C (Engineering and Contingencies) charges varies from project to project depending on the contract amount of the project. Projects with a higher contract amount will have a lower rate of E&C charge. For a specific project, E&C rate (%) can be derived from the cost of "Engineering and Contingencies" in the "Estimated Cost" of the project.

** Use the statewide district rate as established by Finance Division each year. This line 3 (c) is for Service Project only, unless otherwise specified in the Advance Funding Agreement. See Stand Alone Manual Notice 98-2 for instructions.

Funding for this Change Order has been arranged:	
<u><i>Norman River Palacios</i></u>	<u>6/1/2017</u>
Representative	Date
Typed/Printed Name: <u>Norman River Palacios</u>	

[Contact/Help](#)



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El Paso, Texas 79902

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Fax: +1.915.533.6089

www.atkinsglobal.com/northamerica

January 4, 2017

Via : E-mail

Mr. Jesus Avila
Texas Department of Transportation
13301 Gateway West
El Paso, TX 79928-5410

Re: *Change Order #1 Cast in Place in lieu of Pre Cast Box Culvert.*
Old Hueco Tanks Improvement Project
TxDOT CSJ 0924-06-111

Dear Mr. Avila:

This letter is to inform you that the Contractor International Eagle Inc, has proposed to change the pre cast box culverts to cast in place at Mesa drain STA 9+00 OHT CL and Mesa Spur 43+80 OHT CL. Original plans required box culverts at Mesa Drain and Mesa Spur to be pre-casted. See attached original plans sheets 100 and 104. The contractor submitted revised plans for a cast in place box culverts in lieu of pre cast. See design drawings for cast in place SCC 10 and SCC 5&6.

We will document this through a no cost change order and no additional time will be added to the contract. Please see attached cast in place designs and letter of approval by EPWID No. 1.

Please do not hesitate to contact us should you require additional information.

Sincerely,

Joseph W. Hudy
Sr. Contract Administrator



EL PASO COUNTY WATER IMPROVEMENT DISTRICT No. 1

P.O. Box 749 | 13247 Alameda Ave. Clint, Texas 79836-0749
(915) 872-4000 | Fax (915) 851-0091 | www.epcwid1.org
TAX OFFICE (915) 872-4009 | DISPATCHER (915) 872-4029

Mr. Samuel A. Leony
City of Socorro, Texas
Planning and Zoning Director
860 N. Rio Vista Rd.
Socorro, TX 79927
(915) 872-8531 Phone
(915) 872-8673 Fax

November 30, 2016

VIA EMAIL

Re: EPCWID License 1480 – License to place a roadway across the Mesa Drainage Canal (a drainage canal) for Old Hueco Tanks Road extension with a single 10' X 6' Box Culvert at approximately Station 770+07

Dear Mr. Leony:

The Engineering Department has reviewed engineering drawings submitted November 30, 2016, by International Eagle Construction, Inc., to cast-in-place 10' X 6' concrete box culvert within the Mesa Drain.

EPCWID approves submittal as presented. International Eagle Construction, Inc., must ensure submittal is approved by all entities overseeing project as needed.

Any questions concerning design criteria or standards in reference to the District's comments should be forwarded to the Assistant District Engineer by letter or email.

Sincerely,

O. D. Jay Ornelas, Jr., P.E.,
Asst. District Engineer, EPCWID1

cc: Joseph W. Hudy, Sr. Contract Administrator, Atkins
Jose F. Perez, P.E., TXDOT
Jesus Avila, P.E., TXDOT
Alfredo Corral, International Eagle Construction
Lorena Duarte, Engineering Admin, EPCWID
Dr. Al Blair, P.E., District Engineer EPCWID
Jesus "Chuy" Reyes, General Manager EPCWID



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Mr. Samuel A. Leony
City of Socorro, Texas
Planning and Zoning Director
860 N. Rio Vista Rd.
Socorro, TX 79927
(915) 872-8531 Phone
(915) 872-8673 Fax

November 30, 2016

VIA EMAIL

Re: EPCWID License 1482 – License to place a roadway across the Mesa Spur Drainage Canal (a drainage canal) for Old Hueco Tanks Road extension with a single 6' X 6' Box Culvert at approximately Station 315+28

Dear Mr. Leony:

The Engineering Department has reviewed engineering drawings submitted November 30, 2016, by International Eagle Construction, Inc., to cast-in-place 6' X 6' concrete box culvert within the Mesa Spur Drain.

EPCWID approves submittal as presented. International Eagle Construction, Inc., must ensure submittal is approved by all entities overseeing project as needed.

Any questions concerning design criteria or standards in reference to the District's comments should be forwarded to the Assistant District Engineer by letter or email.

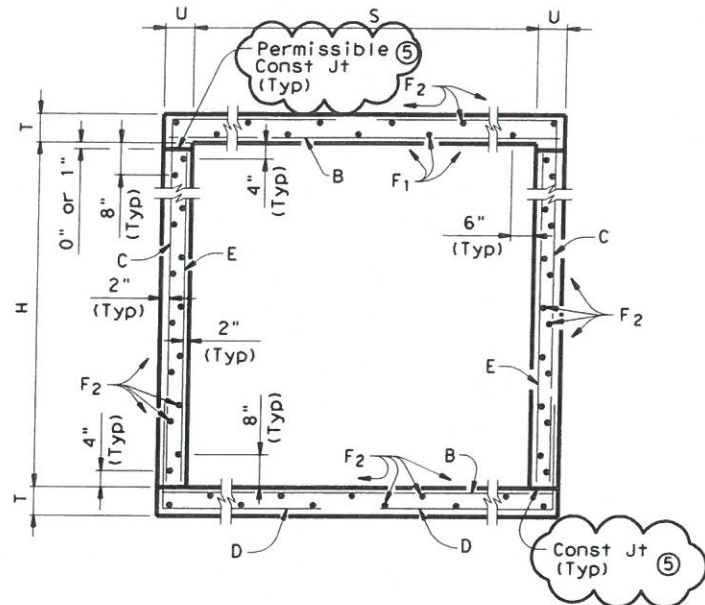
Sincerely,

O. D. Jay Ornelas, Jr., P.E.,
Asst. District Engineer, EPCWID1

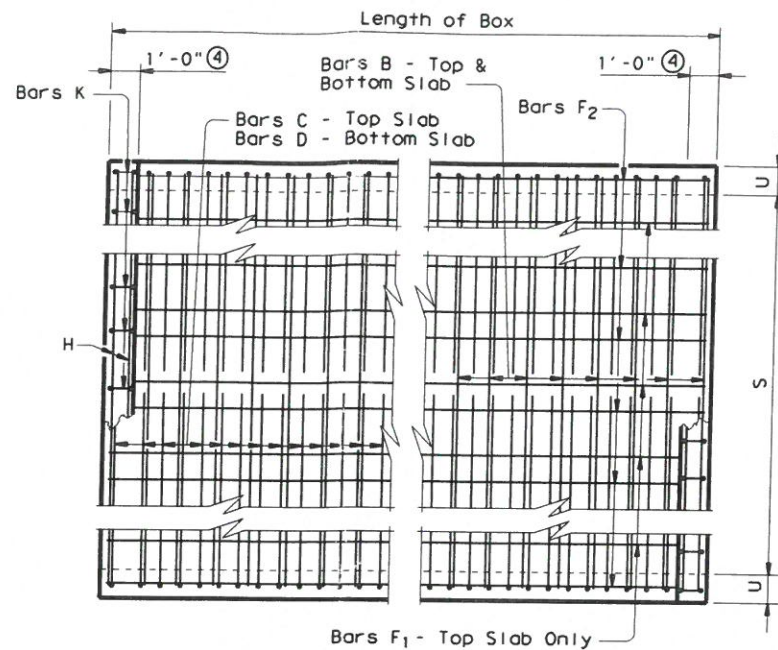
cc: Joseph W. Hudy, Sr. Contract Administrator, Atkins
Jose F. Perez, P.E., TXDOT
Jesus Avila, P.E., TXDOT
Alfredo Corral, International Eagle Construction
Lorena Duarte, Engineering Admin, EPCWID
Dr. Al Blair, P.E., District Engineer EPCWID
Jesus "Chuy" Reyes, General Manager EPCWID

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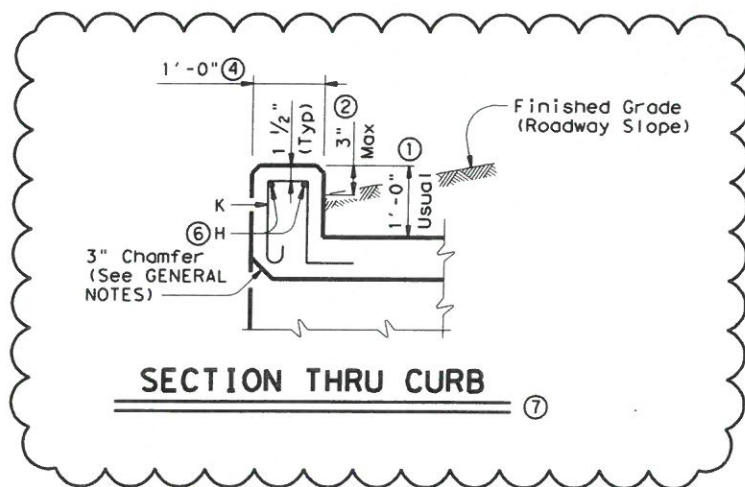
DATE: FILE:



TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

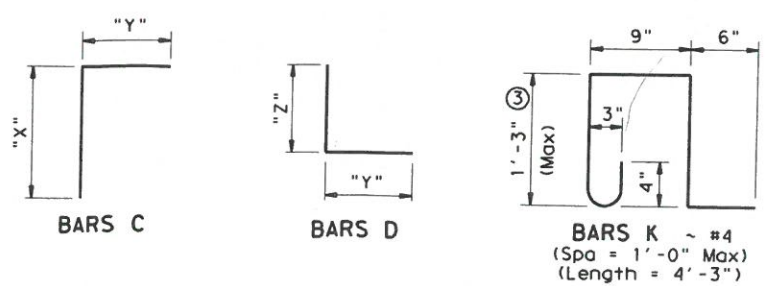
- ⑤ At construction joints provide waterstops for concrete. Use green streak waterstops or equal. Install waterstops per manufacturer's recommendation.
- ⑥ Additional bars H (#4) as required to maintain 12" max spa.
- ⑦ For dimensions see design by others sheet 108 ECD(MOD) Old Hueco Tanks Rd.

- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
 - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- ④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Designed to the maximum fill height shown.
 All reinforcing steel shall be Grade 60.
 All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.
 Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.
 The use of permanent forms is not allowed.
 The bottom edge of the top slab shall be chamfered 3" at the entrance.
 Reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.
 Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.
 See standard SCC-MD for skewed ends, angle sections and lengthening details.



HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation
 Bridge Division Standard

**OLD HUECO TANKS RD
 MESA DRAIN
 SINGLE BOX CULVERTS
 CAST-IN-PLACE
 0' TO 30' FILL
 SCC-10 (MOD)**

FILE: scc10ste.dgn	DN: GAF	CK: LRW	DW: BWH/TxDOT	CC: GAF
©TxDOT February 2010	CONT SECT	JOB	HIGHWAY	
REVISIONS	0924	06	111	CS
10-12: Added WWR	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	1	

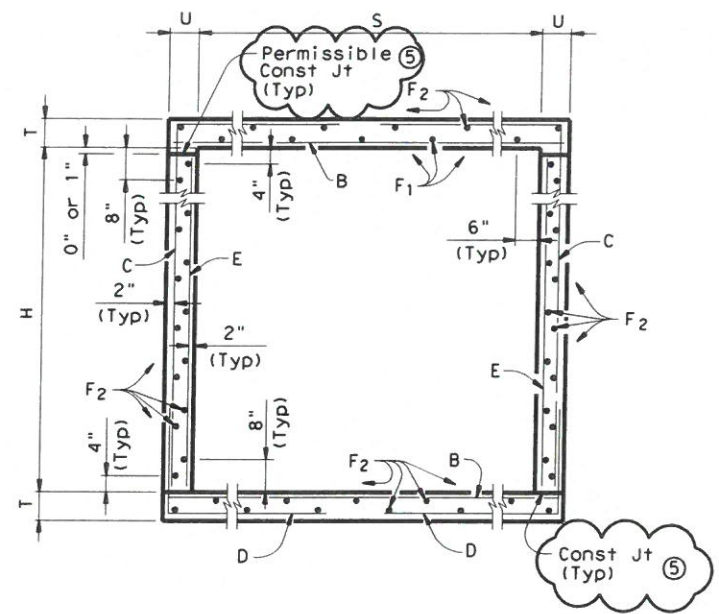
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DATE: FILE:

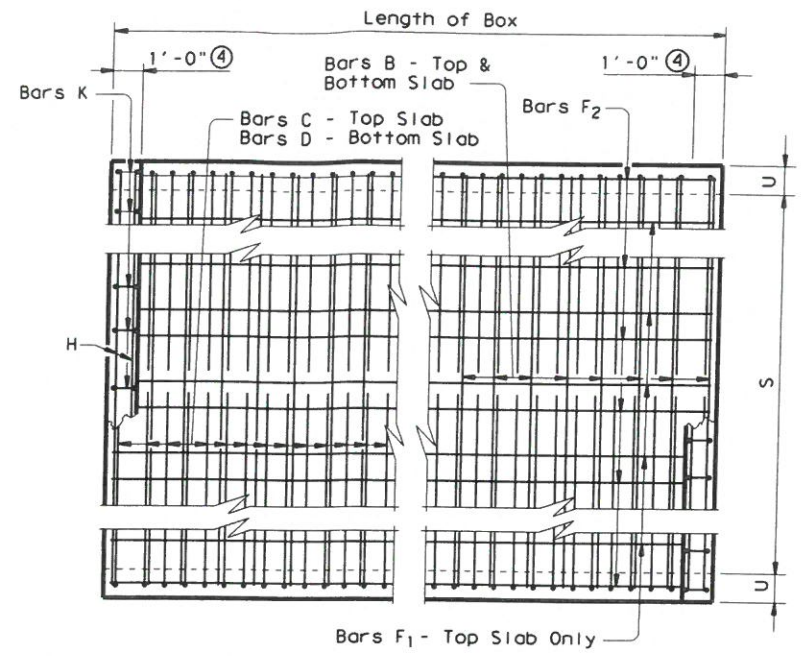
SECTION DIMENSIONS				FILL HEIGHT ⑧	BILLS OF REINFORCING STEEL (For Box Length = 128 feet)																						QUANTITIES															
					Bars B				Bars C				Bars D				Bars E~#4 at 18" Max		Bars F1 ~#4		Bars F2 ~#4 at 18" Max		Bars H 4~#4		Bars K		Per foot of Barrel		Curb		Total											
S	H	T	U	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (LB)	Conc (CY)	Reinf (LB)	Conc (CY)	Reinf (LB)
10'-0"	5'-0"	7"	7"	138	#7	7"	10'-11"	3,079	194	#5	5"	10'-8"	2,158	5'-5"	5'-3"	194	#5	5"	7'-10"	1,585	5'-3"	2'-7"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	10'-11"	29	24	68	0.699	213.7	0.8	97	28.8	8,646
10'-0"	5'-0"	8"	8"	139	#7	7"	10'-11"	3,181	194	#5	5"	10'-9"	2,175	5'-6"	5'-3"	194	#5	5"	7'-11"	1,602	5'-3"	2'-8"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	10'-11"	29	24	68	0.767	210.5	0.8	97	31.5	8,517
10'-0"	5'-0"	9"	9"	140	#7	7"	10'-11"	3,230	194	#5	5"	10'-10"	2,192	5'-7"	5'-3"	194	#5	5"	8'-0"	1,619	5'-3"	2'-9"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	10'-11"	29	24	68	0.877	212.6	0.8	104	35.9	8,607
10'-0"	5'-0"	10"	10"	141	#7	7"	10'-11"	3,670	194	#5	5"	10'-11"	2,209	5'-8"	5'-3"	194	#5	5"	8'-1"	1,636	5'-3"	2'-10"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'-1"	30	26	74	0.947	224.4	0.8	104	38.7	9,081
10'-0"	5'-0"	11"	11"	142	#7	7"	10'-11"	4,461	162	#6	6"	11'-0"	2,697	5'-9"	5'-3"	162	#6	6"	8'-7"	2,089	5'-3"	3'-4"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'-3"	30	26	74	1.059	267.2	0.9	104	43.3	10,793
10'-0"	5'-0"	12"	12"	143	#7	7"	10'-11"	4,527	162	#6	6"	11'-1"	2,697	5'-10"	5'-3"	162	#6	6"	8'-8"	2,109	5'-3"	3'-5"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'-5"	31	26	74	1.173	269.9	0.9	105	47.8	10,900
10'-0"	5'-0"	13"	13"	144	#7	7"	10'-11"	4,593	194	#6	5"	11'-2"	3,254	5'-11"	5'-3"	194	#6	5"	8'-9"	2,550	5'-3"	3'-6"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'-7"	31	26	74	1.481	296.5	0.9	105	52.5	11,964
10'-0"	5'-0"	14"	14"	145	#7	7"	10'-11"	4,659	194	#6	5"	11'-3"	3,278	6'-0"	5'-3"	194	#6	5"	8'-10"	2,574	5'-3"	3'-7"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'-9"	31	26	74	1.289	299.3	0.9	105	57.2	12,078
10'-0"	6'-0"	8"	7"	10	#6	5"	10'-11"	10,183	621	#5	5"	11'-9"	7,612	6'-6"	5'-3"	621	#5	5"	7'-11"	5,128	5'-3"	2'-8"	179	6'-0"	716	7	18"	127'-9"	596	45	127'-9"	3,824	10'-11"	29	24	68	0.742	237.1	0.8	97	30.5	9,582
10'-0"	6'-0"	9"	8"	11	#6	5"	11'-1"	3,230	194	#5	5"	11'-10"	2,394	6'-7"	5'-3"	194	#5	5"	8'-0"	1,619	5'-3"	2'-9"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-1"	30	26	74	0.926	221.2	0.8	104	37.8	8,959
10'-0"	6'-0"	10"	8"	12	#6	5"	11'-1"	4,395	194	#5	5"	11'-11"	2,411	6'-8"	5'-3"	194	#5	5"	8'-1"	1,636	5'-3"	2'-10"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-1"	30	26	74	0.996	251.2	0.8	104	40.6	10,151
10'-0"	6'-0"	11"	9"	13	#6	5"	11'-3"	4,461	162	#6	6"	12'-0"	2,920	6'-9"	5'-3"	162	#6	6"	8'-7"	2,089	5'-3"	3'-4"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-3"	30	26	74	1.114	276.9	0.9	104	45.5	11,179
10'-0"	6'-0"	12"	10"	14	#6	5"	11'-5"	4,527	162	#6	6"	12'-1"	2,940	6'-10"	5'-3"	162	#6	6"	8'-8"	2,109	5'-3"	3'-5"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-5"	31	26	74	1.235	279.5	0.9	105	50.3	11,286
10'-0"	6'-0"	13"	11"	15	#6	5"	11'-7"	4,593	162	#6	6"	12'-2"	2,960	6'-11"	5'-3"	162	#6	6"	8'-9"	2,129	5'-3"	3'-6"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-7"	31	26	74	1.357	282.2	0.9	105	55.2	11,392
10'-0"	6'-0"	14"	12"	16	#6	5"	11'-9"	4,659	194	#6	5"	12'-3"	3,570	7'-0"	5'-3"	194	#6	5"	8'-10"	2,574	5'-3"	3'-7"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'-9"	31	26	74	1.481	310.2	0.9	105	60.1	12,513
10'-0"	7'-0"	7"	7"	17	#6	6"	10'-11"	3,615	194	#5	5"	12'-8"	2,563	7'-5"	5'-3"	194	#5	5"	7'-10"	1,585	5'-3"	2'-7"	56	7'-0"	262	19	6"	39'-9"	505	45	39'-9"	1,195	10'-11"	29	24	68	0.785	243.1	0.8	97	32.2	9,822
10'-0"	7'-0"	8"	8"	18	#6	6"	11'-1"	3,670	194	#5	5"	12'-10"	2,597	7'-7"	5'-3"	194	#5	5"	8'-0"	1,619	5'-3"	2'-9"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	10'-11"	29	24	68	0.854	236.0	0.8	97	35.0	9,537
10'-0"	7'-0"	9"	8"	19	#6	6"	11'-3"	4,395	194	#5	5"	12'-11"	2,614	7'-8"	5'-3"	194	#5	5"	8'-1"	1,636	5'-3"	2'-10"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'-1"	30	26	74	0.975	238.2	0.8	104	39.8	9,633
10'-0"	7'-0"	10"	9"	20	#6	6"	11'-5"	4,461	162	#6	6"	13'-0"	3,163	7'-9"	5'-3"	162	#6	6"	8'-7"	2,089	5'-3"	3'-4"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'-3"	30	26	74	1.045	257.2	0.8	104	42.6	10,392
10'-0"	7'-0"	11"	10"	21	#6	6"	11'-7"	4,527	162	#6	6"	13'-1"	3,183	7'-10"	5'-3"	162	#6	6"	8'-8"	2,109	5'-3"	3'-5"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'-5"	31	26	74	1.170	283.9	0.9	104	47.7	11,460
10'-0"	7'-0"	12"	11"	22	#6	6"	11'-9"	4,593	162	#6	6"	13'-2"	3,204	7'-11"	5'-3"	162	#6	6"	8'-9"	2,129	5'-3"	3'-6"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'-7"	31	26	74	1.296	286.6	0.9	105	52.7	11,567
10'-0"	7'-0"	13"	12"	23	#6	6"	11'-11"	4,659	162	#6	6"	13'-3"	3,224	8'-0"	5'-3"	162	#6	6"	8'-10"	2,149	5'-3"	3'-7"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'-9"	31	26	74	1.425	289.2	0.9	105	57.9	11,674
10'-0"	8'-0"	7"	7"	24	#6	5"	13'-8"	2,765	194	#5	5"	13'-9"	2,782	8'-6"	5'-3"	194	#5	5"	7'-10"	1,585	5'-3"	2'-7"	56	8'-0"	299	19	6"	39'-9"	505	49	39'-9"	1,301	10'-11"	29	24	68	0.828	251.8	0.8	97	33.9	10,167
10'-0"	8'-0"	8"	8"	25	#6	5"	13'-10"	2,799	194	#5	5"	13'-10"	2,799	8'-7"	5'-3"	194	#5	5"	8'-0"	1,619	5'-3"	2'-9"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	10'-11"	29	24	68	0.897	244.6	0.8	97	36.7	9,882
10'-0"	8'-0"	9"	8"	26	#6	5"	13'-11"	2,816	194	#5	5"	13'-11"	2,816	8'-8"	5'-3"	194	#5	5"	8'-1"	1,636	5'-3"	2'-10"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-1"	30	26	74	1.025	246.9	0.8	104	41.8	9,978
10'-0"	8'-0"	10"	9"	27	#6	5"	14'-0"	3,407	162	#6	6"	14'-0"	3,407	8'-9"	5'-3"	162	#6	6"	8'-7"	2,089	5'-3"	3'-4"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-1"	30	26	74	1.095	265.8	0.8	104	44.6	10,737
10'-0"	8'-0"	11"	10"	28	#6	5"	14'-1"	3,427	162	#6	6"	14'-1"	3,427	8'-10"	5'-3"	162	#6	6"	8'-8"	2,109	5'-3"	3'-5"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-3"	30	26	74	1.225	293.6	0.9	104	49.9	11,847
10'-0"	8'-0"	12"	11"	29	#6	5"	14'-2"	3,447	162	#6	6"	14'-2"	3,447	8'-11"	5'-3"	162	#6	6"	8'-9"	2,129	5'-3"	3'-6"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-5"	31	26	74	1.358	296.2	0.9	105	55.2	11,954
10'-0"	8'-0"	13"	12"	30	#6	5"	14'-3"	3,467	162	#6	6"	14'-3"	3,467	9'-0"	5'-3"	162	#6	6"	8'-10"	2,149	5'-3"	3'-7"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-7"	31	26	74	1.493	298.9	0.9	105	60.6	12,060
10'-0"	8'-0"	14"	13"	31	#6	5"	14'-4"	3,487	162	#6	6"	14'-4"	3,487	9'-1"	5'-3"	162	#6	6"	8'-11"	2,169	5'-3"	3'-8"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'-9"	31	26	74	1.630	301.5	0.9	105	66.1	12,166
10'-0"	9'-0"	7"	7"	32	#6	5"	14'-5"	2,968	194	#5	5"	14'-8"	2,968	9'-5"	5'-3"	194	#5	5"	7'-10"	1,585	5'-3"	2'-7"	56	9'-0"	337	19	6"	39'-9"	505	53	39'-9"	1,407	10'-11"	29	24	68	0.871	260.4	0.8	97	35.6	10,514
10'-0"	9'-0"	8"	8"	33	#6	5"	14'-9"	3,589	162	#6	6"	14'-9"	3,589	9'-6"	5'-3"	162	#6	6"	8'-4"	2,028	5'-3"	3'-1"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	10'-11"	29	24	68	0.940	279.1	0.8	97	38.4	11,259
10'-0"	9'-0"	9"	9"	34	#6	5"	14'-10"	3,609	162	#6	6"	14'-10"	3,609	9'-7"	5'-3"	162	#6	6"	8'-5"	2,048	5'-3"	3'-2"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	10'-11"	29	24	68	1.074	281.4	0.8	104	43.8	11,361
10'-0"	9'-0"	10"	10"	35																																						

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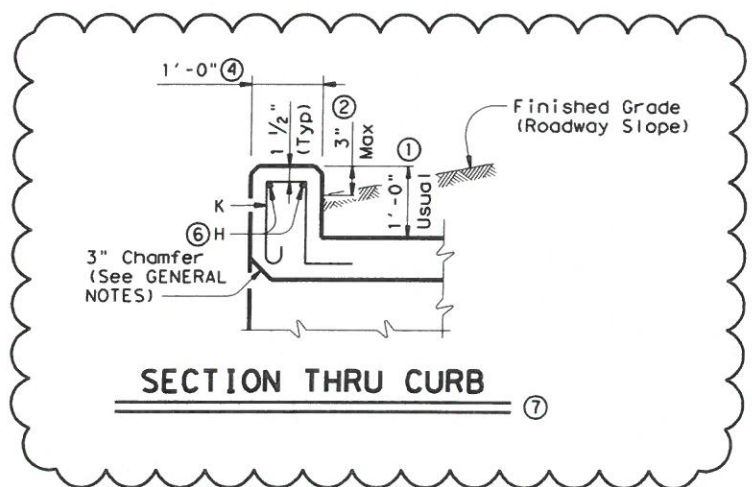
DATE: FILE:



TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

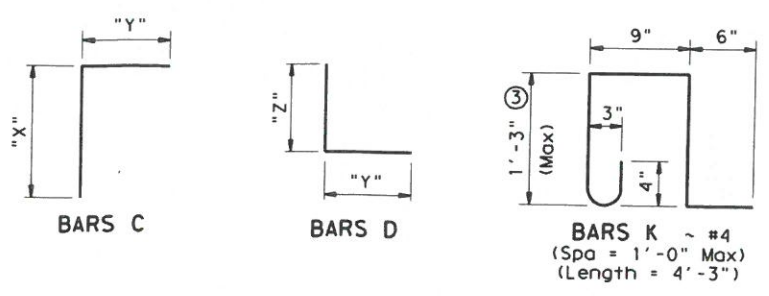
- ⑤ At construction joints provide waterstops for concrete. Use green streak waterstops or equal. Install waterstops per manufacturer's recommendation.
- ⑥ Additional bars H (#4) as required to maintain 12" max spa.
- ⑦ For dimensions see design by others sheet 108 ECD(MOD) Old Hueco Tanks Rd.

- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
 - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- ④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Designed to the maximum fill height shown.
 All reinforcing steel shall be Grade 60.
 All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.
 Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.
 The use of permanent forms is not allowed.
 The bottom edge of the top slab shall be chamfered 3" at the entrance.
 Reinforcing bars shall be adjusted to provide a minimum of 1/4" clear cover.
 Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.
 See standard SCC-MD for skewed ends, angle sections and lengthening details.



HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation
 Bridge Division Standard

**OLD HUECO TANKS RD
 MESA SPUR
 SINGLE BOX CULVERTS
 CAST-IN-PLACE
 0' TO 30' FILL
 SCC-5 & 6 (MOD)**

FILE: scc56ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CC: GAF
TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	06	111	CS
10-12: Added WWR	DIST	COUNTY	SHEET NO.	
ELP	EL PASO	3		

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DATE: FILE:

SECTION DIMENSIONS				FILL HEIGHT ⑧	BILLS OF REINFORCING STEEL (For Box Length = 136 feet)																						QUANTITIES																
					Bars B				Bars C				Bars D				Bars E-#4 at 18" Max		Bars F1-#4		Bars F2-#4 at 18" Max		Bars H 4-#4		Bars K		Per foot of Barrel		Curb		Total												
S	H	T	U	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	
5'-0"	2'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	162	#5	6"	5'-2"	873	2'-5"	2'-9"	162	#5	6"	5'-4"	901	2'-9"	2'-1"	56	2'-0"	75	8	7"	39'-9"	212	22	39'-9"	584	5'-11"	16	14	40	0.353	96.1	0.5	56	14.6	3,898
5'-0"	2'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'-0"	648	2'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	2'-0"	75	4	18"	39'-9"	106	22	39'-9"	584	5'-11"	16	14	40	0.391	80.7	0.5	56	16.1	3,282
5'-0"	3'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'-11"	767	3'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	3'-0"	112	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.396	89.6	0.5	56	16.3	3,639
5'-0"	3'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'-0"	778	3'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	3'-0"	112	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.434	87.5	0.5	56	17.9	3,555
5'-0"	4'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'-11"	896	4'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	4'-0"	150	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.439	93.8	0.5	56	18.1	3,806
5'-0"	4'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'-0"	907	4'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	4'-0"	150	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.477	91.7	0.5	56	19.6	3,722
5'-0"	5'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'-11"	1,026	5'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	5'-0"	187	8	7"	39'-9"	212	30	39'-9"	797	5'-11"	16	14	40	0.483	100.6	0.5	56	19.8	4,080
5'-0"	5'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	8'-0"	1,037	5'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	5'-0"	187	4	18"	39'-9"	106	30	39'-9"	797	5'-11"	16	14	40	0.521	98.5	0.5	56	21.3	3,996
6'-0"	3'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	162	#5	6"	6'-6"	1,098	3'-5"	3'-1"	162	#5	6"	5'-8"	957	3'-1"	2'-7"	56	3'-0"	112	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.439	115.1	0.5	63	18.1	4,666
6'-0"	3'-0"	8"	7"	26'	162	#6	6"	6'-11"	1,683	162	#5	6"	6'-7"	1,112	3'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.484	119.6	0.5	63	19.9	4,845
6'-0"	3'-0"	9"	8"	30'	162	#6	6"	7'-1"	1,724	162	#5	6"	6'-8"	1,126	3'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	7'-1"	19	18	51	0.556	121.3	0.5	70	22.7	4,921
6'-0"	4'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	7'-3"	940	4'-5"	2'-10"	194	#4	5"	5'-0"	648	2'-10"	2'-2"	56	5'-0"	187	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.483	104.4	0.5	63	19.8	4,237
6'-0"	4'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	7'-7"	1,281	4'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.527	133.0	0.5	63	21.6	5,384
6'-0"	4'-0"	9"	8"	30'	162	#6	6"	7'-1"	1,724	162	#5	6"	7'-8"	1,295	4'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	7'-1"	19	18	51	0.605	126.5	0.5	70	24.7	5,128
6'-0"	5'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	8'-3"	1,069	5'-5"	2'-10"	194	#4	5"	5'-0"	648	2'-10"	2'-2"	56	5'-0"	187	10	7"	39'-9"	266	33	39'-9"	876	6'-11"	18	16	45	0.526	111.2	0.5	63	21.5	4,509
6'-0"	5'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	8'-7"	1,450	5'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	6'-11"	18	16	45	0.570	140.8	0.5	63	23.3	5,696
6'-0"	5'-0"	9"	8"	30'	194	#6	5"	7'-1"	2,064	162	#5	6"	8'-8"	1,464	5'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	7'-1"	19	18	51	0.654	142.8	0.5	70	26.7	5,780
6'-0"	6'-0"	7"	7"	20'	660	#5	5"	6'-11"	4,760	660	#4	5"	9'-3"	4,077	6'-5"	2'-10"	660	#4	5"	5'-0"	2,203	2'-10"	2'-2"	191	6'-0"	764	10	7"	135'-9"	905	37	135'-9"	3,339	6'-11"	18	16	45	0.569	118.0	0.5	63	80.0	16,520
6'-0"	6'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	9'-7"	1,619	6'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	6'-11"	18	16	45	0.613	148.6	0.5	63	25.0	6,000
6'-0"	6'-0"	9"	8"	30'	194	#6	5"	7'-1"	2,064	162	#5	6"	9'-8"	1,633	6'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	7'-1"	19	18	51	0.704	150.6	0.5	70	28.7	6,092

⑧ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

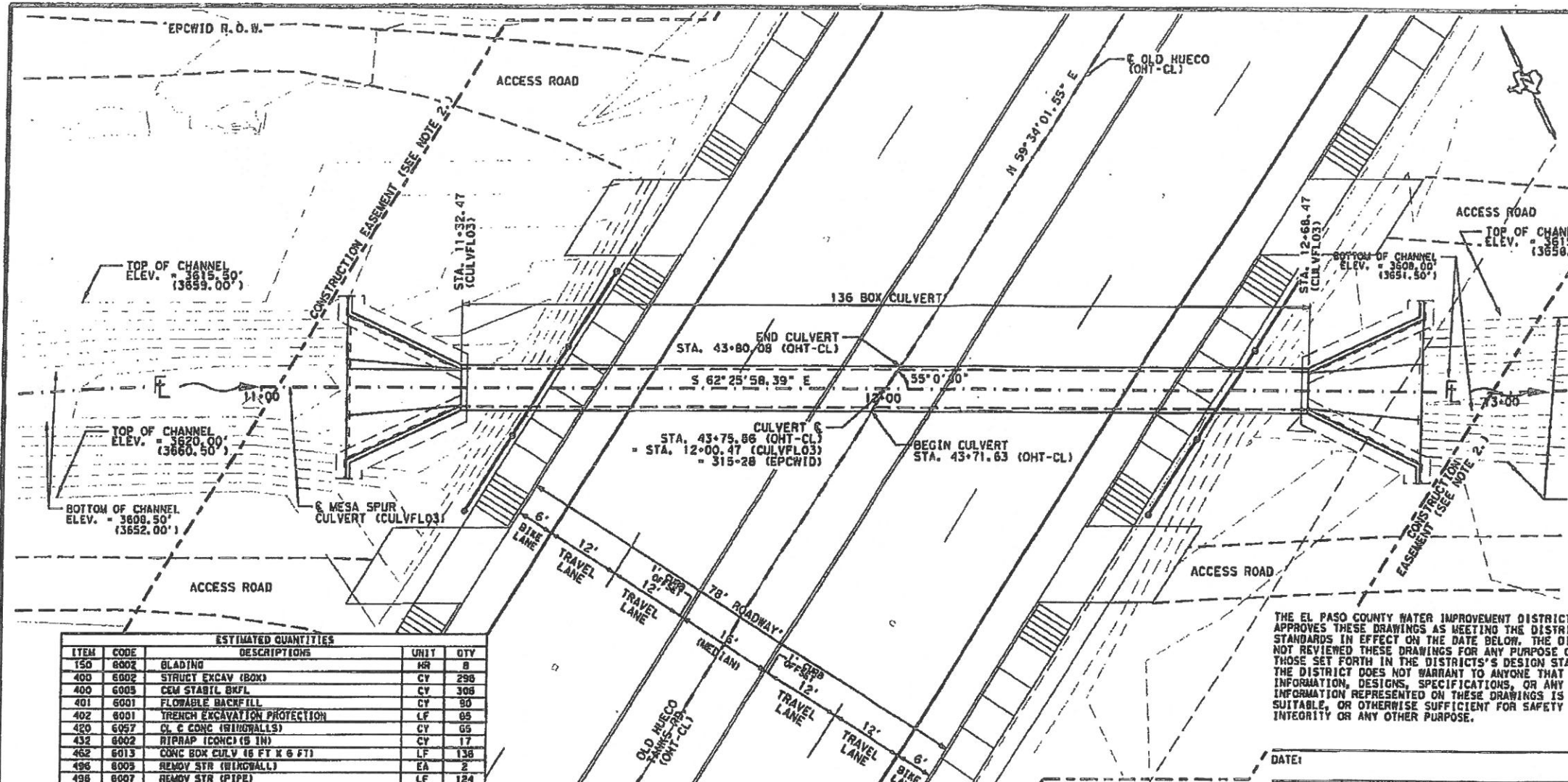


HL93 LOADING SHEET 2 OF 2

 Texas Department of Transportation
 Bridge Division Standard

**OLD HUECO TANKS RD
 MESA SPUR
 SINGLE BOX CULVERTS
 CAST-IN-PLACE
 0' TO 30' FILL
 SCC-5 & 6 (MOD)**

FILE: scc56ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT February 2010	CONT SECT	JOB	HIGHWAY	
REVISIONS	0924	06	111	CS
10-12: Added WWR	DIST	COUNTY	SHEET NO.	
	ELP	EL PASO	4	



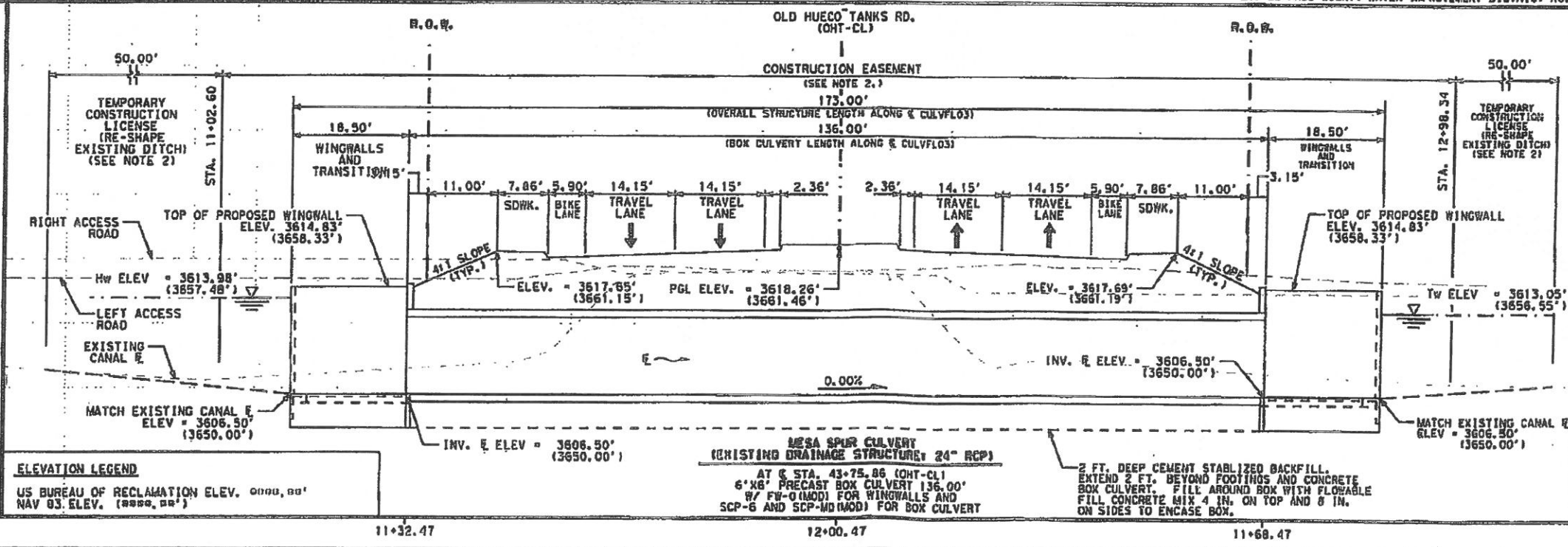
- NOTES:
- 1) LOCATE ALL UTILITIES AND INFORM ENGINEER IN WRITING OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. CONTACT EPCWID AT LEAST 48 HOURS PRIOR TO MOBILIZING FOR ANY WORK WITHIN EPCWID RIGHT OF WAY.
 - 2) BOUNDARIES FOR THE PERMANENT CONSTRUCTION EASEMENTS AND TEMPORARY CONSTRUCTION LICENSE NOT SHOWN ON PLAN VIEW FOR CLARITY. REFER TO EACH STRUCTURE'S "PLAT OF SURVEY" SHEET FOR BRASS CAP, EASEMENT AND TEMPORARY CONSTRUCTION LICENSE INFORMATION.
 - 3) FIELD VERIFY ALL PROPOSED INVERT AND FINISH GRADE ELEVATIONS BEFORE INSTALLING PROPOSED CONCRETE CULVERT STRUCTURE. ELEVATIONS ARE BASED UPON A U.S. DEPARTMENT OF THE INTERIOR BRASS CAP SET IN TOP OF CONCRETE FLOODGATE IN THE JUAN DE HERRERA LATERAL 340 +/- NORTH OF THIS PROPOSED CROSSING STAMPED JDN-C-74. ELEVATION STAMPED IN BRASS CAP IS 3621.84' (U.S. BUREAU OF RECLAMATION DATUM).
 - 4) HORIZONTAL DIMENSIONS ARE SHOWN. LENGTHS MUST BE CORRECTED FOR GRADE OR CROSS-SLOPE WHERE APPROPRIATE AND AS DIRECTED BY THE ENGINEER.
 - 5) TEMPORARY CONSTRUCTION LICENSE TO BE UTILIZED ONLY FOR RE-SHAPING BOTTOM OF CANAL TO MATCH EXISTING GROUND. REGRADE UP TO TEMPORARY CONSTRUCTION LICENSE LIMITS AS SHOWN. EPCWID NO. 1 WILL CONTINUE TO REGRADE TO TO MATCH EXISTING CONDITION IF NECESSARY.
 - 6) LIFTING HOLES CAST IN PRECAST CONCRETE BOX CULVERTS WILL BE FILLED WITH CONCRETE PROOFING SEALER. ALL PROPOSED INTERIOR CONCRETE BOX JOINTS WILL BE GROUTED ALONG THE ENTIRE PERIMETER, AND/OR SEALED WITH A JOINT SEALER OR WATERSTOP AS DIRECTED BY THE ENGINEER.
 - 7) SLOPE DOWN TOP OF WINGWALL TO A MINIMUM OF 8 INCHES ABOVE EXISTING TOP OF CANAL BANK AS DIRECTED BY THE ENGINEER. REFER TO THE "ISOLATION JOINT DETAIL" ON THE "CULVERT DETAILS" SHEET FOR FURTHER DETAILS.
 - 8) REFER TO "REMOVAL LAYOUT" SHEET 2 OF 3 FOR REMOVAL OF EXISTING DRAINAGE STRUCTURE.

ITEM	CODE	ESTIMATED QUANTITIES DESCRIPTIONS	UNIT	QTY
150	6002	BLADING	HR	9
400	6002	STRICT EXCAV (BOX)	CY	298
400	6005	CEM STABIL BKFL	CY	308
401	6001	FLOWABLE BACKFILL	CY	90
402	6001	TRENCH EXCAVATION PROTECTION	LF	85
420	6057	CL & CONC (WINGWALLS)	CY	65
432	6002	RIPRAP (CONC) (8 IN)	CY	17
462	6013	CONC BOX CULV 16 FT X 6 FT	LF	136
496	6005	REMOV STR (WINGWALL)	EA	2
496	6007	REMOV STR (PIPE)	LF	124
760	6001	DITCH CLEARING AND RESHAPING (FOOT)	LF	300

THE EL PASO COUNTY WATER IMPROVEMENT DISTRICT NO. 1 APPROVES THESE DRAWINGS AS MEETING THE DISTRICT DESIGN STANDARDS IN EFFECT ON THE DATE BELOW. THE DISTRICT HAS NOT REVIEWED THESE DRAWINGS FOR ANY PURPOSE OTHER THAN THOSE SET FORTH IN THE DISTRICT'S DESIGN STANDARDS AND THE DISTRICT DOES NOT WARRANT TO ANYONE THAT ANY OF THE INFORMATION, DESIGNS, SPECIFICATIONS, OR ANY OTHER INFORMATION REPRESENTED ON THESE DRAWINGS IS APPROPRIATE, SUITABLE, OR OTHERWISE SUFFICIENT FOR SAFETY OR STRUCTURAL INTEGRITY OR ANY OTHER PURPOSE.



7-8-2016



OLD HUECO TANKS RD.
DRAINAGE CULVERT LAYOUT
MESA SPUR

0 10 20 (HORIZ.)
0 5 10 (VERT.)
SCALE IN FEET

SHEET 1 OF 1

Texas Department of Transportation			
FILE NO.	SHEET NO.		
6	104		
STATE	DIST.	COUNTY	
TEXAS	ELP	EL PASO	
CONTROL	SECTION	JOB	HIGHWAY NO.
0924	06	111	CS

7/8/2016 7:51:17 AM \\s01\p0924-06-111 Old Huevo\3-Plan Sheet\05-DRAINAGE\Layout\cu1.v03.dgn