

APPLICATION FOR LAND SUBDIVISION (PLAT)

DATE RECEIVED: _____

CHECK ONE: _____ Preliminary Plat _____ Final Plat Replat _____ Amended _____ Cancellation

1. PROPOSED SUBDIVISION NAME: THE MEADOWS AT DEER CROSSING UNIT NO. _____
LOCATION DESCRIPTION/NEAREST COUNTY ROAD 2241 CR 3512, DIKE, TX
ACREAGE 242.47 NO. OF LOTS: EXISTING 1 PROPOSED 77
REASON(S) FOR PLATTING/REPLATTING CREATE 77 RESIDENTIAL LOTS

2. OWNER/APPLICANT*: DCTXL, LLC / LEONARD SIMMONS
(*If applicant is person other than owner, a letter of authorization must be provided from owner)
ADDRESS: 1150 EMPIRE CENTRAL DRIVE, SUITE 120, DALLAS TX 75247
TELEPHONE: 512-564-9875 FAX: _____ MOBILE: _____
EMAIL: _____

3. LICENSED ENGINEER/SURVEYOR: BY-LINE SURVEYING LLC / TINA BALUARD
MAILING ADDRESS: 109 PROPERTY PKWY
TELEPHONE: 903-973-5150 FAX: _____ MOBILE: _____
EMAIL ADDRESS: TINAB@BYLINESURVEYING.COM

4. LIST ANY VARIANCES REQUESTED: _____
REASON FOR REQUEST (LIST ANY HARDSHIPS): _____

5. PRESENT USE OF THE PROPERTY: _____
INTENDED USE OF LOTS: (CHECK ALL THOSE THAT APPLY)
 RESIDENTIAL (SINGLE FAMILY) _____ RESIDENTIAL (MULTI-FAMILY)
_____ OTHER (SPECIFY) _____

6. PROPERTY LOCATED WITHIN CITY ETJ: _____ YES _____ NO
If yes, Name of City: _____

7. IS ANY PART OF THE PROPERTY IN A FLOODPLAIN? YES _____ NO

WATER SUPPLY: NORTH HOPKINS WSC ELECTRIC SERVICE: FARMERS ELECTRIC

SEWAGE DISPOSAL: _____ GAS SERVICE: _____

8. Is the property subject to any liens, encumbrances, or judgments? If so, give details. (Provide separate sheet if needed) Permission from any lien holders and/or removal of any encumbrances or judgments will be necessary prior to filing of said plat with the County Clerk's Office.

9. See platting requirements. All necessary documents to reflect compliance must be complete before application will be deemed complete.

10. I agree to comply with all platting and subdivision requirements of Hopkins County, Texas. I understand that the plat will NOT be forwarded to the Commissioners' Court unless all documentation is satisfactorily filed with the County Clerk's Office correction due date.

Leonard Simmons
Signature of Owner/Applicant

LEONARD SIMMONS REGIONAL PARTNER
Print Name & Title

**If applicant is person other than owner, a letter of authorization must be provided from owner. Signature indicates authorization for plat application and acceptance of waiver statement.

DATE: 12-22-23

Debbie Mitchell

Tax Assessor/Collector
128 Jefferson Street, Ste. D
Sulphur Springs, TX 75482



Tax Certificate

Property Account Number:
65-0309-000-002-01

Statement Date: 11/13/2023
Owner: FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
Mailing P O BOX 141
Address: LEONARD, TX 75452

Property Location: 0002441 CR 3512 WS
Legal: SUR: ELDRIDGE T M|TR: 2-01 ABS: 309

TAX CERTIFICATE FOR ACCOUNT : 65-0309-000-002-01
AD NUMBER: R000026607
GF NUMBER:
CERTIFICATE NO : 360878

DATE : 11/13/2023
FEE : 10.00

PAGE 1 OF 1

COLLECTING AGENCY

Hopkins County
128 Jefferson Street, Ste. D
Suite D
Sulphur Springs TX 75482

PROPERTY DESCRIPTION

SUR: ELDRIDGE T M|TR: 2-01 ABS: 309
0002441 CR 3512 WS
37.299 ACRES

REQUESTED BY

DCTXLP LLC
5230 PAYLOR LANE
SARASOTA FL 34240

PROPERTY OWNER

FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
P O BOX 141
LEONARD TX 75452

UDI: 0%

THIS IS TO CERTIFY THAT AFTER A CAREFUL CHECK OF THE TAX RECORDS, ALL TAXES DUE THE TAX ASSESSOR COLLECTOR OF HOPKINS COUNTY ON THE ABOVE DESCRIBED PROPERTY HAVE BEEN PAID UP TO AND INCLUDING THE CURRENT YEAR TAXES WITH ANY ABOVE LISTED EXCEPTIONS.

THE ABOVE DESCRIBED PROPERTY TAX HAS/IS RECEIVING SPECIAL VALUATION BASED ON ITS USE, AND ADDITIONAL ROLLBACK TAXES MAY BECOME DUE BASED ON THE PROVISIONS OF THE SPECIAL VALUATION. SPTB RULE 155.40 (B) PARAGRAPH 6.

TAXES FOR 2023 ARE 36.97

CURRENT VALUES			
LAND MKT VALUE:	\$5,520	IMPROVEMENT :	\$0
AG LAND VALUE:	\$106,380	DEF HOMESTEAD:	\$0
APPRAISED VALUE:	\$111,900	LIMITED VALUE:	\$0
EXEMPTIONS:	Ag 1D1		
LAWSUITS:			

YEAR	TAX UNIT	LEVY	PEN	INT	DEF INT	ATTY	AMOUNT DUE
2023	COUNTY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023	HOSPITAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023 SUB TOTAL							\$0.00

TOTAL CERTIFIED TAX DUE 11/2023 : **\$0.00**

ISSUED TO : DCTXLP LLC
ACCOUNT NUMBER: 65-0309-000-002-01

CERTIFIED BY : Debbie Mitchell
Authorized agent of Hopkins County

TAX CERTIFICATE

ACCT # 65-0309-000-002-01
 DATE 11/13/2023
 SG



SULPHUR SPRINGS ISD
 631 CONNALLY
 SULPHUR SPRINGS, TX 75482
 (903) 885-2153

Cert# 230204
 FEE 10.00

Property Description	
ABST: ABS: 309, TRCT: TR: 2-01, SUR: ELDRIDGE T M	PROP TYPE-D1 PCT OWNER-100.000
TOWN -	LOCATION- 2441 CR 3512
ACRES - 37.299	

Values			
LAND MKT VALUE	111,900	IMPR/PERS MKT VAL	
LAND AGR VALUE	5,520	MKT. BEFORE EXEMP	5,520
EXEMPTIONS GRANTED:	NONE	LIMITED TXBL. VAL	

FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
 P O BOX 141

LEONARD TX 75452

I, SANDRA GIBBY, TAX COLLECTOR FOR THE SULPHUR SPRINGS INDEPENDENT SCHOOL DISTRICT DO HEREBY CERTIFY AND OTHERWISE GUARANTEE THAT THE TAX LEVYS, PENALTIES/INTEREST AND ATTORNEY FEES DUE IN THE CURRENT MONTH FOR THE ABOVE DESCRIBED PROPERTY ARE AS LISTED BELOW:

TAXES 2023	LEVY	P&I	ATTY FEES	AMT DUE
	.00	.00	.00	.00
	-----	-----	-----	-----
	.00	.00	.00	.00
				=====
		TOTAL DUE 11/2023		.00
ACCT # 65-0309-000-002-01		TOTAL DUE 12/2023		.00

BREAKDOWN OF TAX DUE BY JURISDICTION

JURISDICTION	LEVY	P&I	ATT FEES	TOTAL
SULPHUR SPRINGS ISD	.00	.00	.00	.00

TAX LEVY FOR THE CURRENT ROLL YEAR: 0086 54.73
 TOTAL TAX LEVY FOR THE CURRENT ROLL YEAR 54.73

 * SUBJECT TO ROLLBACK *
 * SUBJECT TO ROLLBACK *

REQUESTED BY:
 RUSSO DEVELOPMENT GROUP

Sandra Gibby

 Signature of authorized officer of collecting office

Debbie Mitchell

Tax Assessor/Collector
128 Jefferson Street, Ste. D
Sulphur Springs, TX 75482



Tax Certificate

Property Account Number:
65-0733-000-001-00

Statement Date: 11/13/2023
Owner: FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
Mailing: P O BOX 141
Address: LEONARD, TX 75452

Property Location: 0002441 CR 3512 NS
Legal: ABS: 733| TR: 1| SUR: PARK ALEXANDER

TAX CERTIFICATE FOR ACCOUNT : 65-0733-000-001-00
AD NUMBER: R000019575
GF NUMBER:
CERTIFICATE NO : 360879

DATE : 11/13/2023 PAGE 1 OF 1
FEE : 10.00

COLLECTING AGENCY

Hopkins County
128 Jefferson Street, Ste. D
Suite D
Sulphur Springs TX 75482

PROPERTY DESCRIPTION

ABS: 733| TR: 1| SUR: PARK ALEXANDER
0002441 CR 3512 NS
151.5 ACRES

REQUESTED BY

DCTXLP LLC
5230 PAYLOR LANE
SARASOTA FL 34240

PROPERTY OWNER

FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
P O BOX 141
LEONARD TX 75452

UDI: 0%

THIS IS TO CERTIFY THAT AFTER A CAREFUL CHECK OF THE TAX RECORDS, ALL TAXES DUE THE TAX ASSESSOR COLLECTOR OF HOPKINS COUNTY ON THE ABOVE DESCRIBED PROPERTY HAVE BEEN PAID UP TO AND INCLUDING THE CURRENT YEAR TAXES WITH ANY ABOVE LISTED EXCEPTIONS.

THE ABOVE DESCRIBED PROPERTY TAX HAS/IS RECEIVING SPECIAL VALUATION BASED ON ITS USE, AND ADDITIONAL ROLLBACK TAXES MAY BECOME DUE BASED ON THE PROVISIONS OF THE SPECIAL VALUATION. SPTB RULE 155.40 (B) PARAGRAPH 6.

TAXES FOR 2023 ARE 148.09

CURRENT VALUES			
LAND MKT VALUE:	\$22,110	IMPROVEMENT :	\$0
AG LAND VALUE:	\$432,290	DEF HOMESTEAD:	\$0
APPRAISED VALUE:	\$454,400	LIMITED VALUE:	\$0
EXEMPTIONS:	Ag 1D1		
LAWSUITS:			

YEAR	TAX UNIT	LEVY	PEN	INT	DEF INT	ATTY	AMOUNT DUE
2023	COUNTY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023	HOSPITAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023 SUB TOTAL							\$0.00

TOTAL CERTIFIED TAX DUE 11/2023 : \$0.00

ISSUED TO : DCTXLP LLC
ACCOUNT NUMBER: 65-0733-000-001-00

CERTIFIED BY : Debbie Mitchell
Authorized agent of Hopkins County

TAX CERTIFICATE

ACCT # 65-0733-000-001-00
 DATE 11/13/2023
 SG



SULPHUR SPRINGS ISD
 631 CONNALLY
 SULPHUR SPRINGS, TX 75482
 (903) 885-2153

Cert# 230205
 FEE 10.00

Property Description	
ABS: 733, TR: 1, SUR: PARK ALEXANDER	PROP TYPE-D1 PCT OWNER-100.000
TOWN -	LOCATION- 2441 CR 3512
ACRES - 151.500	

Values			
LAND MKT VALUE	454,400	IMPR/PERS MKT VAL	
LAND AGR VALUE	22,110	MKT. BEFORE EXEMP	22,110
EXEMPTIONS GRANTED:	NONE	LIMITED TXBL. VAL	

FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
 P O BOX 141

LEONARD TX 75452

I, SANDRA GIBBY, TAX COLLECTOR FOR THE SULPHUR SPRINGS INDEPENDENT SCHOOL DISTRICT DO HEREBY CERTIFY AND OTHERWISE GUARANTEE THAT THE TAX LEVYS, PENALTIES/INTEREST AND ATTORNEY FEES DUE IN THE CURRENT MONTH FOR THE ABOVE DESCRIBED PROPERTY ARE AS LISTED BELOW:

	LEVY	P&I	ATTY FEES	AMT DUE
TAXES 2023	.00	.00	.00	.00
	-----	-----	-----	-----
	.00	.00	.00	.00
				=====
				.00
				.00
				=====
				.00
				.00

ACCT # 65-0733-000-001-00

TOTAL DUE 11/2023 .00
 TOTAL DUE 12/2023 .00

BREAKDOWN OF TAX DUE BY JURISDICTION

JURISDICTION	LEVY	P&I	ATT FEES	TOTAL
SULPHUR SPRINGS ISD	.00	.00	.00	.00

TAX LEVY FOR THE CURRENT ROLL YEAR: 0086 219.20
 TOTAL TAX LEVY FOR THE CURRENT ROLL YEAR 219.20

 * SUBJECT TO ROLLBACK *
 * SUBJECT TO ROLLBACK *

REQUESTED BY:
 RUSSO DEVELOPMENT GROUP

Signature of authorized officer of collecting office

Debbie Mitchell

Tax Assessor/Collector
128 Jefferson Street, Ste. D
Sulphur Springs, TX 75482



Tax Certificate

Property Account Number:
65-0797-000-003-00

Statement Date: 11/13/2023
Owner: FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
Mailing P O BOX 141
Address: LEONARD, TX 75452

Property Location: 0000000 CR 3512 WS INSIDE
Legal: ABS: 797 & 133| TR: 3| SUR: REDDING JOSEPH

TAX CERTIFICATE FOR ACCOUNT : 65-0797-000-003-00
AD NUMBER: R000020294
GF NUMBER:
CERTIFICATE NO : 360880

DATE : 11/13/2023 PAGE 1 OF 1
FEE : 10.00

COLLECTING AGENCY

Hopkins County
128 Jefferson Street, Ste. D
Suite D
Sulphur Springs TX 75482

PROPERTY DESCRIPTION

ABS: 797 & 133| TR: 3| SUR: REDDING JOSEPH
0000000 CR 3512 WS INSIDE
68.102 ACRES

REQUESTED BY

DCTXLP LLC
5230 PAYLOR LANE
SARASOTA FL 34240

PROPERTY OWNER

FRICKE JUNE PUNTILLO & CRAIG FLANAGAN
P O BOX 141
LEONARD TX 75452

UDI: 0%

THIS IS TO CERTIFY THAT AFTER A CAREFUL CHECK OF THE TAX RECORDS, ALL TAXES DUE THE TAX ASSESSOR COLLECTOR OF HOPKINS COUNTY ON THE ABOVE DESCRIBED PROPERTY HAVE BEEN PAID UP TO AND INCLUDING THE CURRENT YEAR TAXES WITH ANY ABOVE LISTED EXCEPTIONS.

THE ABOVE DESCRIBED PROPERTY TAX HAS/IS RECEIVING SPECIAL VALUATION BASED ON ITS USE, AND ADDITIONAL ROLLBACK TAXES MAY BECOME DUE BASED ON THE PROVISIONS OF THE SPECIAL VALUATION. SPTB RULE 155.40 (B) PARAGRAPH 6.

TAXES FOR 2023 ARE 147.79

CURRENT VALUES			
LAND MKT VALUE:	\$8,910	IMPROVEMENT :	\$0
AG LAND VALUE:	\$195,020	DEF HOMESTEAD:	\$0
APPRAISED VALUE:	\$203,930	LIMITED VALUE:	\$0
EXEMPTIONS:	Ag 1D1		
LAWSUITS:			

YEAR	TAX UNIT	LEVY	PEN	INT	DEF INT	ATTY	AMOUNT DUE
2023	COUNTY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023	HOSPITAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023	NORTH HOPKINS ISD	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2023 SUB TOTAL							\$0.00

TOTAL CERTIFIED TAX DUE 11/2023 : \$0.00

ISSUED TO : DCTXLP LLC
ACCOUNT NUMBER: 65-0797-000-003-00

CERTIFIED BY : Debbie Mitchell
Authorized agent of Hopkins County

**NORTH HOPKINS WATER SUPPLY CORP.
9364 TEXAS HIGHWAY 19 N
SULPHUR SPRINGS, TEXAS 75482
903-945-2619**

November 9, 2023

Mr. Rusty Simmons
American Land and Lakes

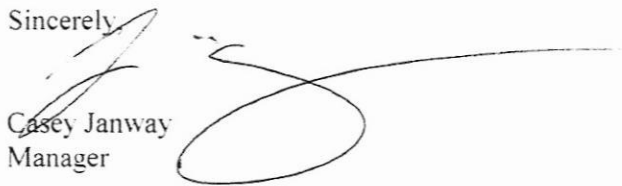
RE: The Meadows at Deer Crossing

To Whom It May Concern:

Please allow this letter to confirm that North Hopkins Water Supply Corporation will supply the water to The Meadows at Deer Crossing in Dike, Texas.

If you have any questions, please do not hesitate to contact me.

Sincerely,


Casey Janway
Manager



2000 I-30 E - Greenville, TX 75402
(903) 455-1715

RECEIVED
DEC 13 2023
TRACY SMITH
HOPKINS COUNTY CLERK

11/3/2023

Allen McIntyre
Vice President – Acquisition & Development
American Land & Lakes

Re: Availability of Electric Service to Dike 256 Project (Deer Crossing) near Hopkins Co. Road 3512

Mr. McIntyre,

This letter certifies that Farmers Electric Cooperative is a Certified Electrical Service Provider at the above referenced property.

YES, Farmers Electric Cooperative is a Certified Electrical Service Provider at the above referenced subdivision.

NO, Farmers Electric Cooperative is not a Certified Electrical Service Provider at the above referenced subdivision.

YES, Farmers Electric Cooperative will be available to each individual residential lot, should all necessary easements be received from surrounding landowners and a 30' right of way has been established for the new power line.

NO, Farmers Electric Cooperative is not available to each individual residential lot.

NOTE: Electrical infrastructure will be provided to the subdivision upon contractual agreement and receipt of payment of any Developer Aid to Construction cost which may be assessed.

Should you have any questions, please feel free to contact me.

Thank you,

Tamara L. Williams
Project Coordinator
Farmers Electric Cooperative
Office: 903-455-1715
Cell: 903-513-2903
chawkins@farmerselectric.coop

Appendix O

CERTIFICATE OF ON-SITE SEWAGE FACILITY INSPECTOR'S APPROVAL

THE STATE OF TEXAS §

COUNTY OF HOPKINS §

KNOW ALL MEN BY THESE PRESENTS, that I, the undersigned, a Licensed On-Site Sewage Facility Inspector in the State of Texas, hereby certify that I have inspected the On-Site Sewage Facilities for this plat, and the same complies with the related requirements of the Hopkins County Subdivision Regulations and the TCEQ.

Kristy Springfield
On Site Inspector

November 13, 2023
Date

License No. DS 0034831

Seal:



[NOTE: The inspector may be required to be present for questioning at the presentation of the plat to the Commissioners' Court.]

DATE 11/14/2023

HOPKINS COUNTY CLERK
128 JEFFERSON STREET, SUITE C
SULPHUR SPRINGS TEXAS 75482

RECEIPT # 210217

TIME 16:27

FILE # M29860

RECEIVED OF: RUSSO, VINCENT

FOR: THE MEADOWS AT DEER CROSSING

DESCRIPTION: PAID/MH

AMOUNT DUE \$2,270.00

AMOUNT PAID \$2,270.00

BALANCE \$.00

PAYMENT TYPE D
CHECK NO 0282186962
COLLECTED BY MH

DATE 12/29/2023

HOPKINS COUNTY CLERK
128 JEFFERSON STREET, SUITE C
SULPHUR SPRINGS TEXAS 75482

RECEIPT # 210301

TIME 13:58

FILE # M29865

RECEIVED OF: SIMMONS LEONARD

FOR: THE MEADOWS AT DEER CROSSING

DESCRIPTION: FINAL PLAT FEE - PAID IN FULL/TS

AMOUNT DUE \$250.00

AMOUNT PAID \$250.00

BALANCE \$.00

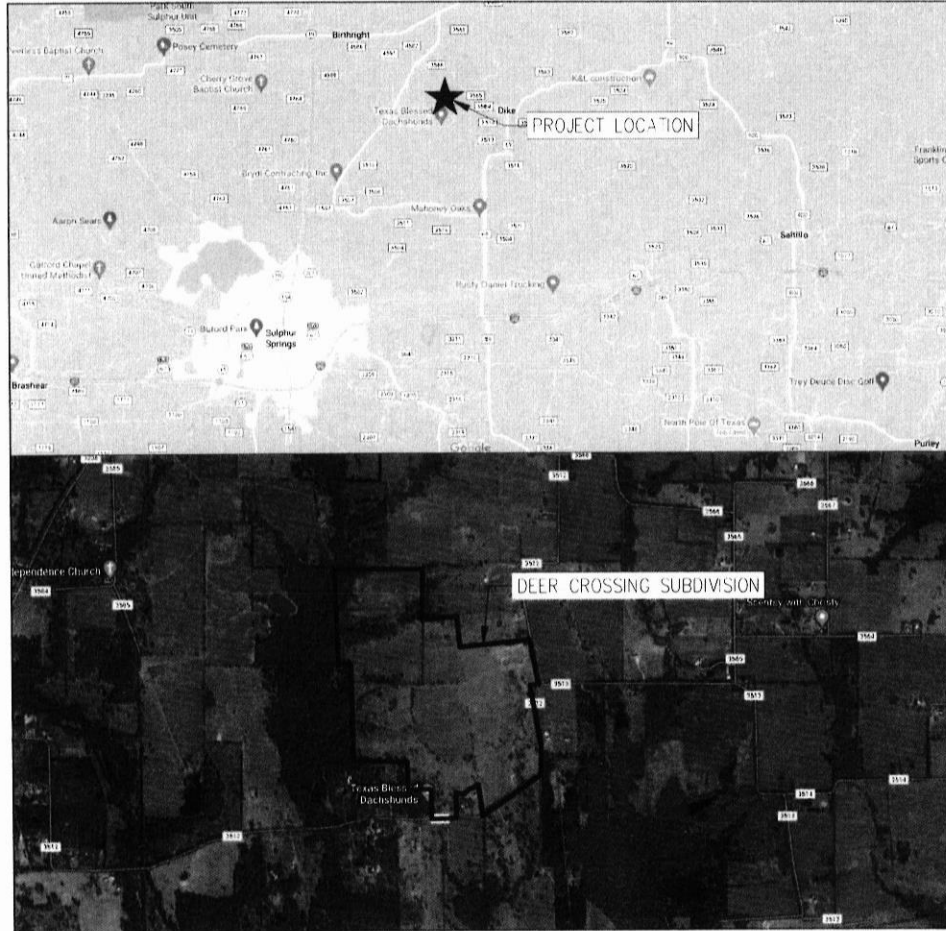
PAYMENT TYPE K

CHECK NO 7135

COLLECTED BY TS

DEER CROSSING SUBDIVISION

Dike, Texas



VICINITY MAP

SHEET INDEX

SHEET NO.	DESCRIPTION
T1.0	TITLE PLAN
C1.0	SITE PLAN
C1.1	PAVING DETAILS
C1.2	SITE PLAN ENTRANCE
C2.0	EROSION CONTROL NOTES
C2.1	EROSION CONTROL PLAN
C2.2	EROSION CONTROL DETAILS
C3.0	GRADING PLAN
C3.1	GRADING PLAN
C3.2	GRADING PLAN
C3.3	ENTRANCE GRADING PLAN
C3.4	PRE CONSTRUCTION DRAINAGE PLAN
C3.5	POST CONSTRUCTION DRAINAGE PLAN
C3.6	DRAINAGE CALCULATIONS DETAILS
C3.7	ROAD PLAN & PROFILE
C3.8	ROAD PLAN & PROFILE
C3.9	ROAD PLAN & PROFILE
C3.10	ROAD PLAN & PROFILE
C3.11	ROAD PLAN & PROFILE
C3.12	ROAD PLAN & PROFILE
PSET-SP	PRECAST SAFETY END TREATMENT
PSET-IP	PRECAST SAFETY END TREATMENT
PSET-RR	PRECAST SAFETY END TREATMENT
SETP-PD	SAFETY END TREATMENT
CH-FW-0	CONCRETE HEAD WALLS W/ PARALLEL WINGS
CH-FW-0	CONCRETE HEAD WALLS W/ PARALLEL WINGS

DEER CROSSING SUBDIVISION
DIKE, TX

DYNAMIC Engineering Consultants
PLLC
PROFESSIONAL ENGINEERING SERVICES
205 S. HILLCREST SUITE C
SULPHUR SPRINGS, TX 75482
TX REGISTERED ENGINEER NO. 93832
JAMES W. BURNETT
PROFESSIONAL ENGINEER



DATE	BY	REVISION

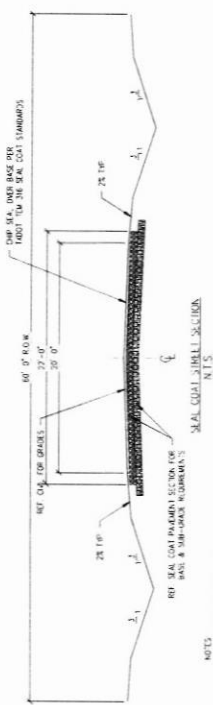
DRAWN: JWB
 CHECKED: JWB
 DESIGNED: JWB
 DATE: 09/20/21

PROJECT & SHEET NUMBER:
 DEER CROSSING SUBDIVISION
 TITLE PLAN
 PROJECT # 2024
 SHEET NUMBER T1.0

ENGINEER:
DYNAMIC ENGINEERING
CONSULTANTS, PLLC
200 SOUTH HILLCREST DRIVE SUITE C
SULPHUR SPRINGS, TX 75482
CONTACT: JAMES W. BURNETT
PH# 903-382-3444

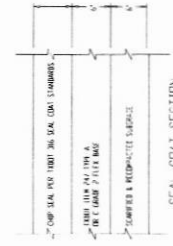
GENERAL NOTES:

1. ALL WORK SHALL BE ACCORDING TO THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR MATERIALS, AND THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION, LATEST EDITIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.



NOTES:
 1. SEAL COAT SHALL BE APPLIED TO ALL EXPOSED SURFACES.
 2. SEAL COAT SHALL BE APPLIED TO ALL EXPOSED SURFACES.

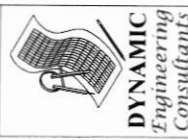
SEAL COAT PAVEMENT



SEAL COAT SECTION

SEAL COAT PAVEMENT SECTION

DEER CROSSING SUBDIVISION
 DIKE, TX

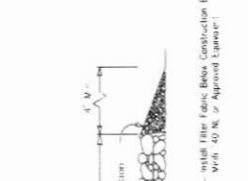
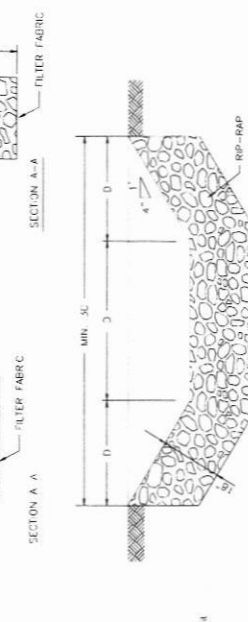
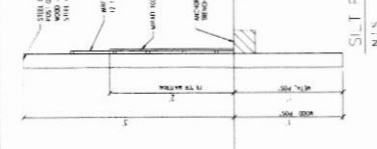
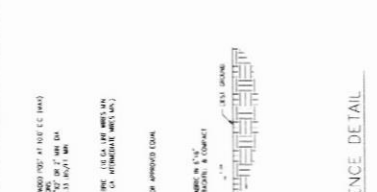
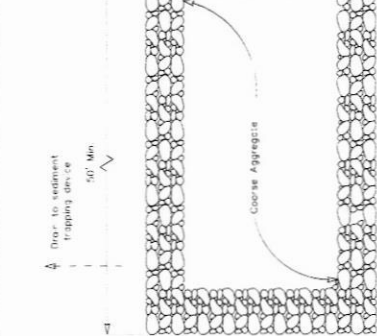
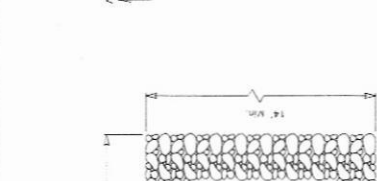
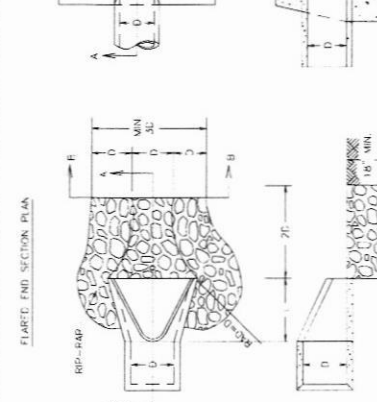
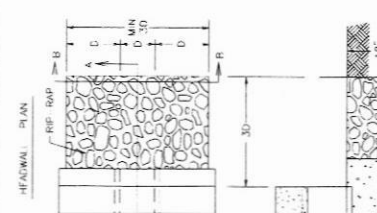


DYNAMIC
Engineering Consultants
 PROFESSIONAL ENGINEERING SERVICES
 2000 WEST LOOP SOUTH, SUITE 100
 HOUSTON, TEXAS 77056
 TEL: 713.865.1111
 FAX: 713.865.1112
 WWW.DYNAMICCONSULTANTS.COM



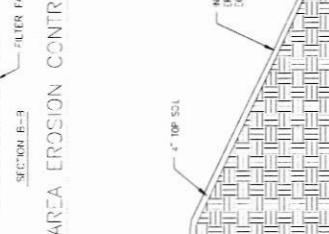
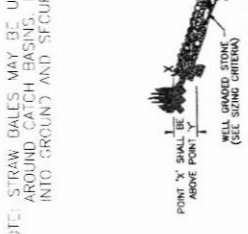
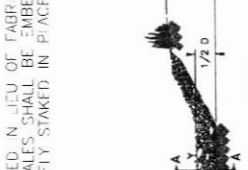
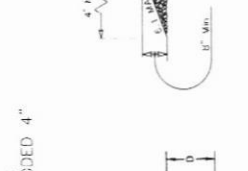
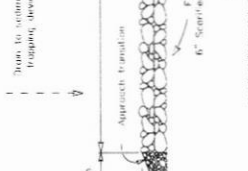
DATE	11/15/2011
ISSUED FOR	DEER CROSSING SUBDIVISION
DESIGNED BY	JWB
CHECKED BY	JWB
DATE	11/15/2011
PROJECT #	DEER
SHEET #	001
SHEET TOTAL	001

C1.1



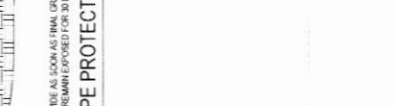
GENERAL NOTES

- The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'
- The coarse aggregate should be open graded with a size of 4" to 8".
- The approach transitions should be no steeper than 6:1.
- The construction exit shall be graded to allow drainage to e sediment trapping device.



NO.	REVISION	DATE

NOTE: STRAW BALES MAY BE USED IN LIEU OF FABRIC AROUND CATCH BASINS. BALES SHALL BE EMBEDDED 4" INTO GROUND AND SECURELY STAKED IN PLACE.



N.T.S.

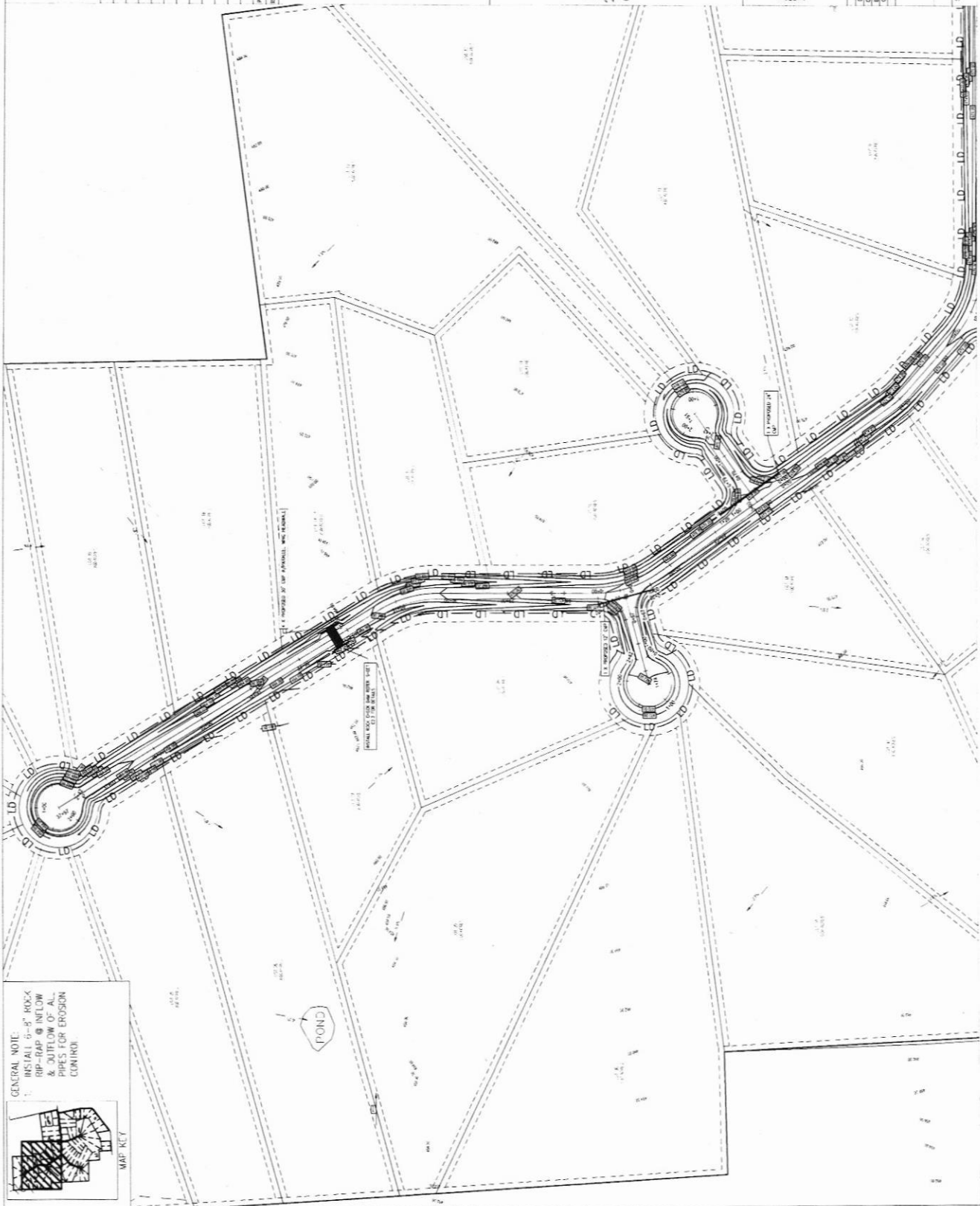
DIKE TX
DEER CROSSING SUBDIVISION



DYNAMIC
Engineering
Consultants
PROFESSIONAL
ENGINEERING
205 S. MARKET STREET
SULPHUR SPRING, TX
78970



PROJECT SET: 11/08/21
SUBJECT: DATE:
DRAWN: 11/08/21
CHECKED: 11/08/21
DATE: 11/08/21
PROJECT NO.: 21-001
SHEET NUMBER: C3.0



GENERAL NOTE:
USE ALL 12" x 8" RCP & 18" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.

MAP KEY

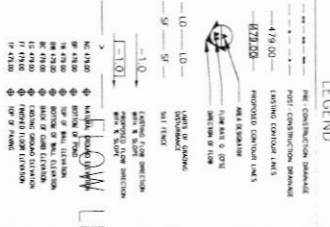
LEGEND

- PRE-CONSTRUCTION DRAINAGE
- POST-CONSTRUCTION DRAINAGE
- EXISTING CONTOUR LINES
- PROPOSED CONTOUR LINES
- AREA OF EROSION
- PIPE RISE (R)
- PIPE FALL (F)
- PIPE INVERT
- PIPE TOP
- PIPE BOTTOM
- PIPE CENTERLINE
- PIPE RISE (R)
- PIPE FALL (F)
- PIPE INVERT
- PIPE TOP
- PIPE BOTTOM
- PIPE CENTERLINE

NETWORK NOTES

1. PROPOSED DRAINAGE TO BE INSTALLED BY REPAIRING EXISTING DITCH BY 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
2. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
3. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
4. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
5. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
6. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
7. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
8. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
9. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
10. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
11. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
12. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
13. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
14. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
15. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
16. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
17. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
18. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
19. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.
20. ALL EXISTING DITCHES TO BE REPAIRED WITH 12" RCP-GRP @ INFLOW & OUTFLOW OF ALL PIPES FOR EROSION CONTROL.

LEGEND



STRENGTH NOTES

1. PROPOSED CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.

2. ALL CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.

3. ALL CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.

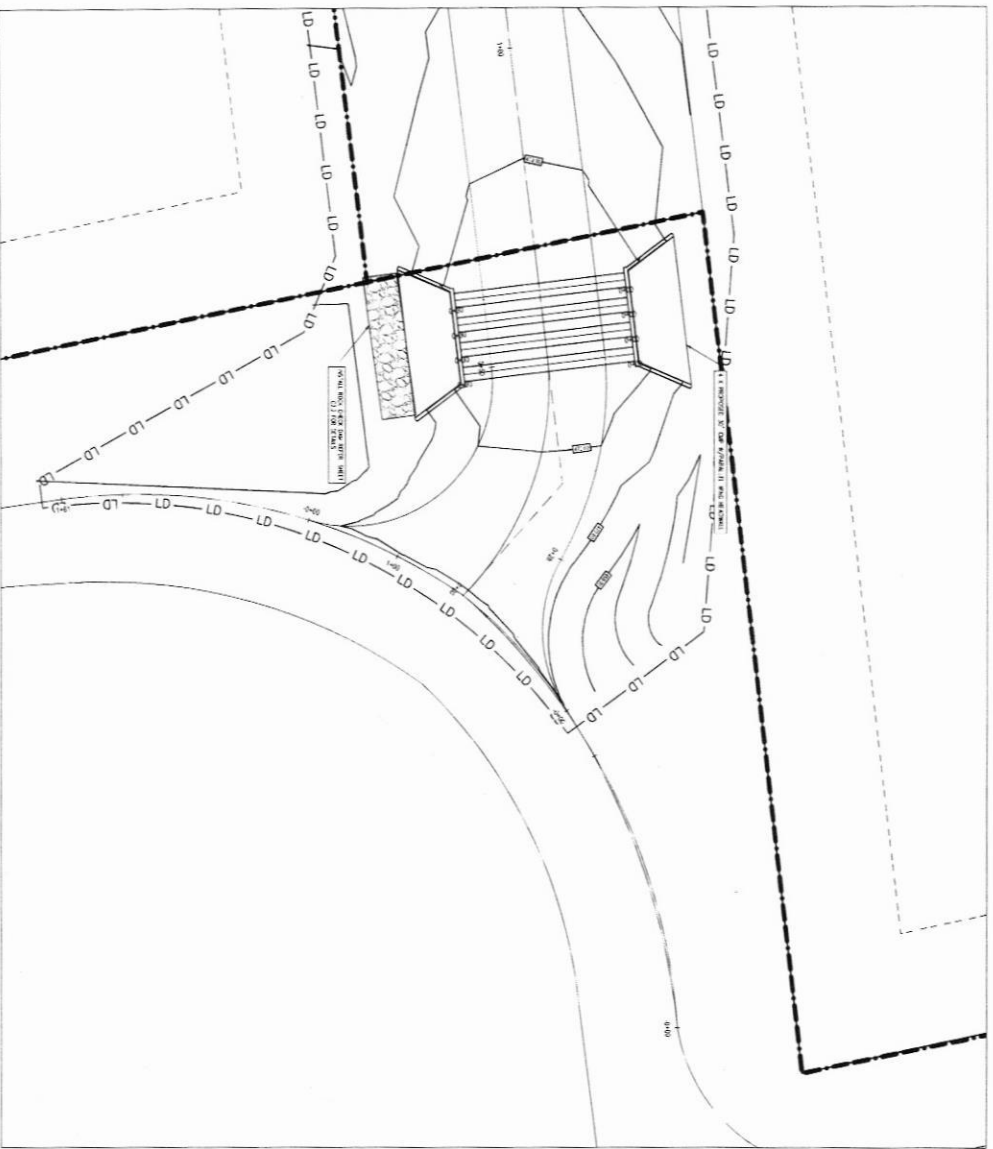
4. ALL CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.

5. ALL CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.

6. ALL CONSTRUCTION SHALL BE TO BE AT THE SAME LEVEL AS EXISTING CONSTRUCTION UNLESS OTHERWISE INDICATED BY THE ARCHITECT OR ENGINEER.



GENERAL NOTE
 1. CONING C/I HORIZONTAL ROAD INTERANGLES TO EXISTING ROAD ELEVATIONS



MAIN ENTRANCE

DEER CROSSING SUBDIVISION
 DIKE, TX

PROJECT NO.	110020
DATE	
DESIGNER	
DRAWN	
CHECKED	
APPROVED	



DYNAMIC
Engineering Consultants
 P.L.L.C.
 PROFESSIONAL
 ENGINEERING
 SERVICES

3400 WEST HIGHWAY 41
 SUITE 200
 AUSTIN, TEXAS 78741
 TEL: 512-476-7800
 FAX: 512-476-7811



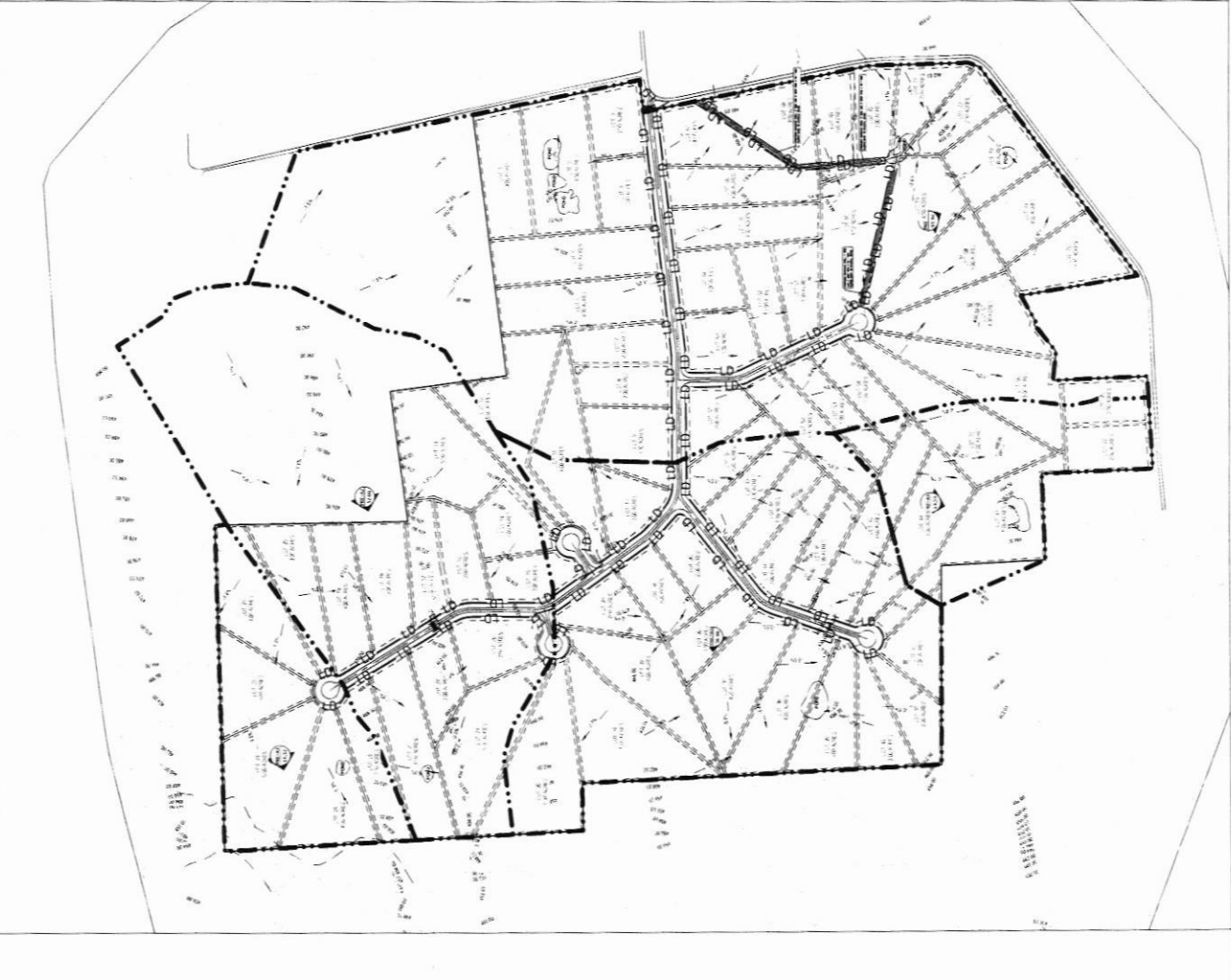
PROJECT NO.	1101
PROJECT NAME	DEER CROSSING SUBDIVISION
DATE	03.3

LEGEND

--- PRE-CONSTRUCTION DRAINAGE
 --- EXISTING CONTOUR LINES
 --- PROPOSED CONTOUR LINES
 --- AREA ENVIATION
 --- FLOW RATE S (D/S)
 --- DIRECTION OF FLOW
 --- LIMIT OF ADJACENT
 --- SKY TIME
 --- EXISTING FLOW DIRECTION
 --- PROPOSED FLOW DIRECTION
 --- FLOW LINE
 --- TOP OF FLOOD
 --- TOP OF BANK
 --- TOP OF ROAD
 --- TOP OF SIDEWALK
 --- TOP OF CURB
 --- TOP OF GROUND ELEVATION
 --- TOP OF PAVEMENT

SITEWORK NOTES

1. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
2. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
3. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
4. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
5. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
6. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
7. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
8. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
9. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.
10. THE PROPOSED DRAINAGE SYSTEM IS BASED ON THE ASSUMPTIONS LISTED BELOW. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE AVAILABLE RECORD DRAWINGS AND SURVEY DATA.



PROPOSED VOLUMES OF CURB CUTS (CUBIC FEET)

Station	W	U	S
1+00	10,500	10,500	10,500
2+00	10,500	10,500	10,500
3+00	10,500	10,500	10,500
4+00	10,500	10,500	10,500
5+00	10,500	10,500	10,500
6+00	10,500	10,500	10,500
7+00	10,500	10,500	10,500
8+00	10,500	10,500	10,500
9+00	10,500	10,500	10,500
10+00	10,500	10,500	10,500

Deer Crossing Subdivision Pre-Development Flow (Rational Method)

Drainage Divide	Area (Acres)	Time of Concentration (Minutes)	Runoff (CFS)	Quicr (CFS)	Quicr (CFS)	Quicr (CFS)	Quicr (CFS)
Pre-A.1	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Pre-A.2	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Pre-A.3	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Pre-A.4	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Pre-A.5	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Total	94.10	31.05	155.25	215.75	304.44	331.92	345.12

Deer Crossing Subdivision Post-Development Flow (Rational Method)

Drainage Divide	Area (Acres)	Time of Concentration (Minutes)	Runoff (CFS)	Quicr (CFS)	Quicr (CFS)	Quicr (CFS)	Quicr (CFS)
Post-A.1	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Post-A.2	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Post-A.3	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Post-A.4	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Post-A.5	18.82	31.05	31.05	43.15	60.88	66.38	69.12
Total	94.10	31.05	155.25	215.75	304.44	331.92	345.12

PROJECT SET
 11/09/22
 DATE

DIKE, TX
 DEER CROSSING SUBDIVISION

DYNAMIC
 Engineering
 Consultants
 PROFESSIONAL
 ENGINEERING
 SERVICES
 100 S. PEARSON AVENUE, SUITE 100
 SAN ANTONIO, TEXAS 78204
 (214) 520-1000

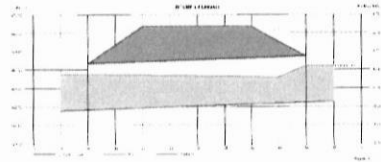
STATE OF TEXAS
 ENGINEERING SEAL
 19882
 PROJECT: DEER CROSSING SUBDIVISION
 SHEET NUMBER: C34

Culvert Report

HydroFlow Express Edition for AutoCAD Civil 3D by Autodesk, Inc. Wednesday, Nov 9 2011

30" CMP x 4 Entrance

Invert Elev. Dn (ft)	= 484.84	Calculations	
Pipe Length (ft)	= 40.00	Qmax (cfs)	= 63.40
Slope (%)	= 1.00	Qmax (cfs)	= 63.50
Invert Elev. Up (ft)	= 485.24	Tailwater Elev (ft)	= (c+D)/2
Rise (ft)	= 30.0	Highlighted	
Shape	= Circular	Qtotal (cfs)	= 63.40
Span (ft)	= 30.0	Qpipe (cfs)	= 63.40
No. Barrels	= 4	Overtop (cfs)	= 0.00
n-Value	= 0.023	Veloc. Dn (ft/s)	= 3.91
Culvert Type	= Circular Concrete	Veloc. Up (ft/s)	= 5.90
Culvert Entrance	= Square edge headwall (C)	HGL Dn (ft)	= 466.76
Coeff. K.M.C.Y.k	= 0.0098, 2.0, 0.0398, 0.67, 0.5	HGL Up (ft)	= 466.58
Embankment		HW Elev (ft)	= 467.21
Top Elevation (ft)	= 469.37	Flow Regime	= Inlet Control
Top Width (ft)	= 20.00		
Crest Width (ft)	= 3.00		



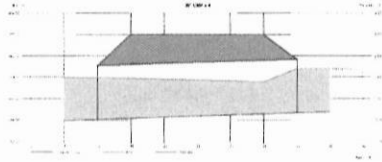
A)

Culvert Report

HydroFlow Express Edition for AutoCAD Civil 3D by Autodesk, Inc. Wednesday, Nov 9 2011

30" CMP x 4

Invert Elev. Dn (ft)	= 459.04	Calculations	
Pipe Length (ft)	= 30.00	Qmax (cfs)	= 68.87
Slope (%)	= 1.00	Qmax (cfs)	= 68.90
Invert Elev. Up (ft)	= 459.34	Tailwater Elev (ft)	= (c+D)/2
Rise (ft)	= 30.0	Highlighted	
Shape	= Circular	Qtotal (cfs)	= 68.87
Span (ft)	= 30.0	Qpipe (cfs)	= 68.87
No. Barrels	= 4	Overtop (cfs)	= 0.00
n-Value	= 0.023	Veloc. Dn (ft/s)	= 4.19
Culvert Type	= Circular Corrugate Metal Pipe	Veloc. Up (ft/s)	= 6.07
Culvert Entrance	= Headwall	HGL Dn (ft)	= 463.99
Coeff. K.M.C.Y.k	= 0.0078, 2.0, 0.0378, 0.69, 0.5	HGL Up (ft)	= 463.74
Embankment		HW Elev (ft)	= 461.40
Top Elevation (ft)	= 463.00	Flow Regime	= Inlet Control
Top Width (ft)	= 20.00		
Crest Width (ft)	= 3.00		



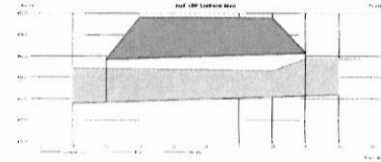
B)

Culvert Report

HydroFlow Express Edition for AutoCAD Civil 3D by Autodesk, Inc. Wednesday, Nov 9 2011

2x24" CMP Southwest Street

Invert Elev. Dn (ft)	= 457.84	Calculations	
Pipe Length (ft)	= 30.00	Qmax (cfs)	= 20.78
Slope (%)	= 1.00	Qmax (cfs)	= 20.80
Invert Elev. Up (ft)	= 458.14	Tailwater Elev (ft)	= (c+D)/2
Rise (ft)	= 24.0	Highlighted	
Shape	= Circular	Qtotal (cfs)	= 20.78
Span (ft)	= 24.0	Qpipe (cfs)	= 20.78
No. Barrels	= 2	Overtop (cfs)	= 0.00
n-Value	= 0.023	Veloc. Dn (ft/s)	= 3.91
Culvert Type	= Circular Concrete	Veloc. Up (ft/s)	= 5.54
Culvert Entrance	= Square edge headwall (C)	HGL Dn (ft)	= 459.42
Coeff. K.M.C.Y.k	= 0.0098, 2.0, 0.0398, 0.67, 0.5	HGL Up (ft)	= 459.29
Embankment		HW Elev (ft)	= 459.87
Top Elevation (ft)	= 461.80	Flow Regime	= Inlet Control
Top Width (ft)	= 20.00		
Crest Width (ft)	= 3.00		



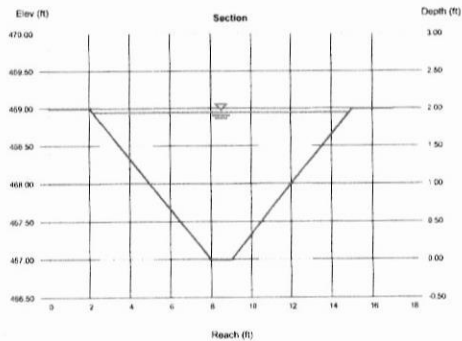
C)

Channel Report

HydroFlow Express Edition for AutoCAD Civil 3D by Autodesk, Inc. Friday, Oct 27 2011

East Flume

Trapezoidal		Highlighted	
Bottom Width (ft)	= 1.00	Depth (ft)	= 1.95
Side Slopes (z:1)	= 3.00, 3.00	Q (cfs)	= 85.00
Total Depth (ft)	= 2.00	Area (sqft)	= 13.38
Invert Elev (ft)	= 487.00	Velocity (ft/s)	= 4.87
Slope (%)	= 0.73	Wetted Perim (ft)	= 13.33
N-Value	= 0.025	Crit. Depth, Yc (ft)	= 1.81
Calculations		Top Width (ft)	= 12.70
Compute by	Known Q	EGL (ft)	= 2.32
Known Q (cfs)	= 85.00		



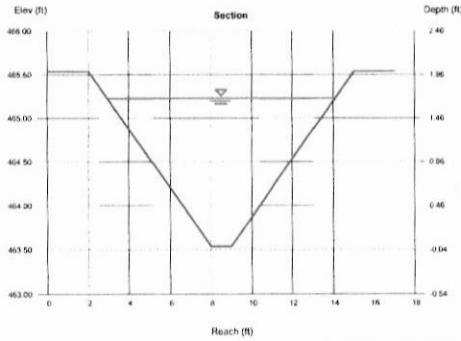
D)

Channel Report

HydroFlow Express Edition for AutoCAD Civil 3D by Autodesk, Inc. Friday, Oct 27 2011

Southeast Flume

Trapezoidal		Highlighted	
Bottom Width (ft)	= 1.00	Depth (ft)	= 1.65
Side Slopes (z:1)	= 3.00, 3.00	Q (cfs)	= 41.16
Total Depth (ft)	= 2.00	Area (sqft)	= 10.26
Invert Elev (ft)	= 463.54	Velocity (ft/s)	= 4.01
Slope (%)	= 0.50	Wetted Perim (ft)	= 13.69
N-Value	= 0.025	Crit. Depth, Yc (ft)	= 1.48
Calculations		Top Width (ft)	= 11.14
Compute by	Known Q	EGL (ft)	= 1.94
Known Q (cfs)	= 41.16		



E)

PERMIT SET 11/09/22
ISSUED FOR DATE
DEER CROSSING SUBDIVISION
DIKE, TX



PROFESSIONAL ENGINEERING SERVICES
200 S. WILCOX STREET, SUITE C
SULPHUR SPRING, TX 75482



ENGINEER	DATE
DRAWN	DATE
CHECKED	DATE
ENG. APPROV.	DATE
CIA	

DRAWING CALCULATIONS DETAILS
PROJECT # 924
SHEET NUMBER C3.6

DEER CROSSING SUBDIVISION
DIKE, TX



PROFESSIONAL
ENGINEERING
SERVICES
REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
NO. 10488
1000 WEST WYOMING STREET, SUITE 100
DALLAS, TEXAS 75201

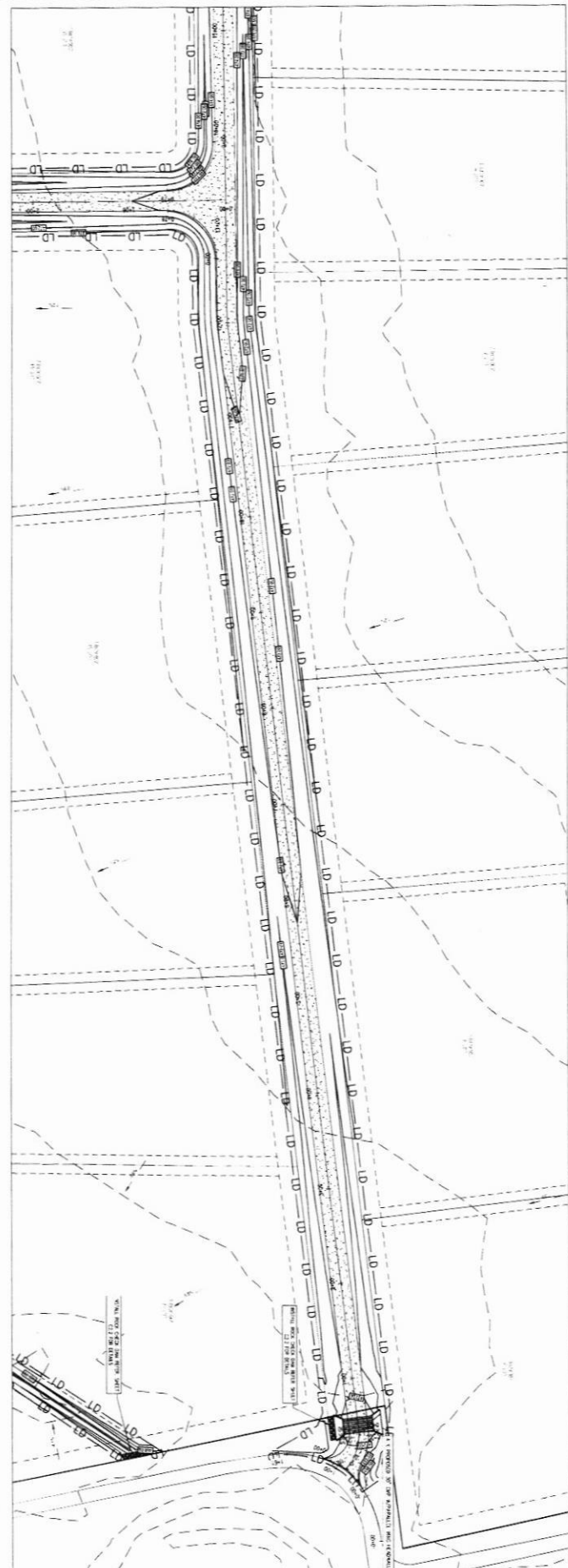
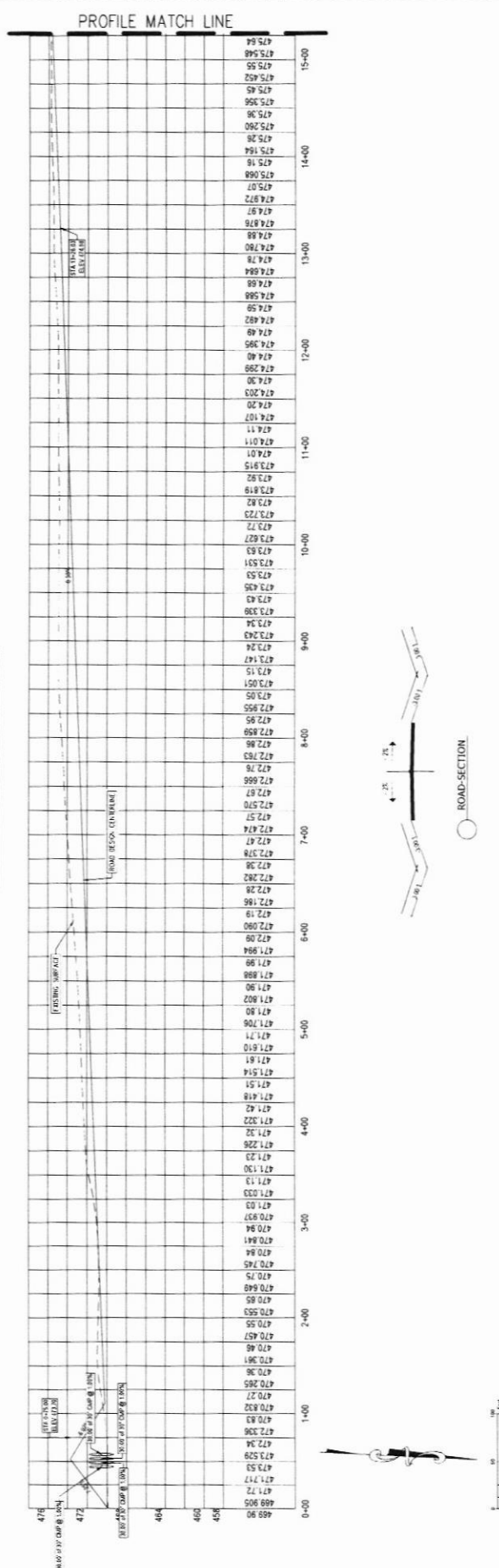


NO.	NAME	DATE
1	DESIGNED	11/20/2013
2	CHECKED	11/20/2013
3	IN CHARGE	11/20/2013
4	DATE	

PROJECT # 101
SHEET # 031

C3.7

DEER CROSSING LANE PROFILE



PROJECT NO.	110000
DATE	
DESIGNED BY	
CHECKED BY	
IN CHARGE	
DATE	

DEER CROSSING SUBDIVISION
DIKE, TX

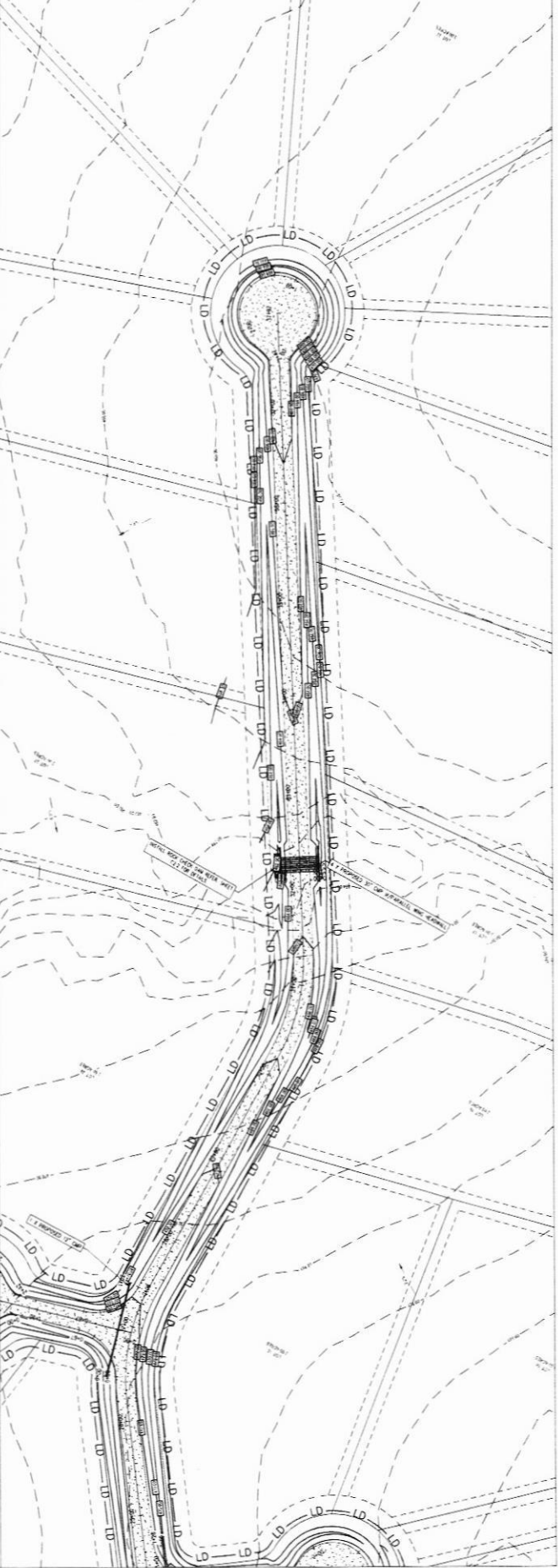
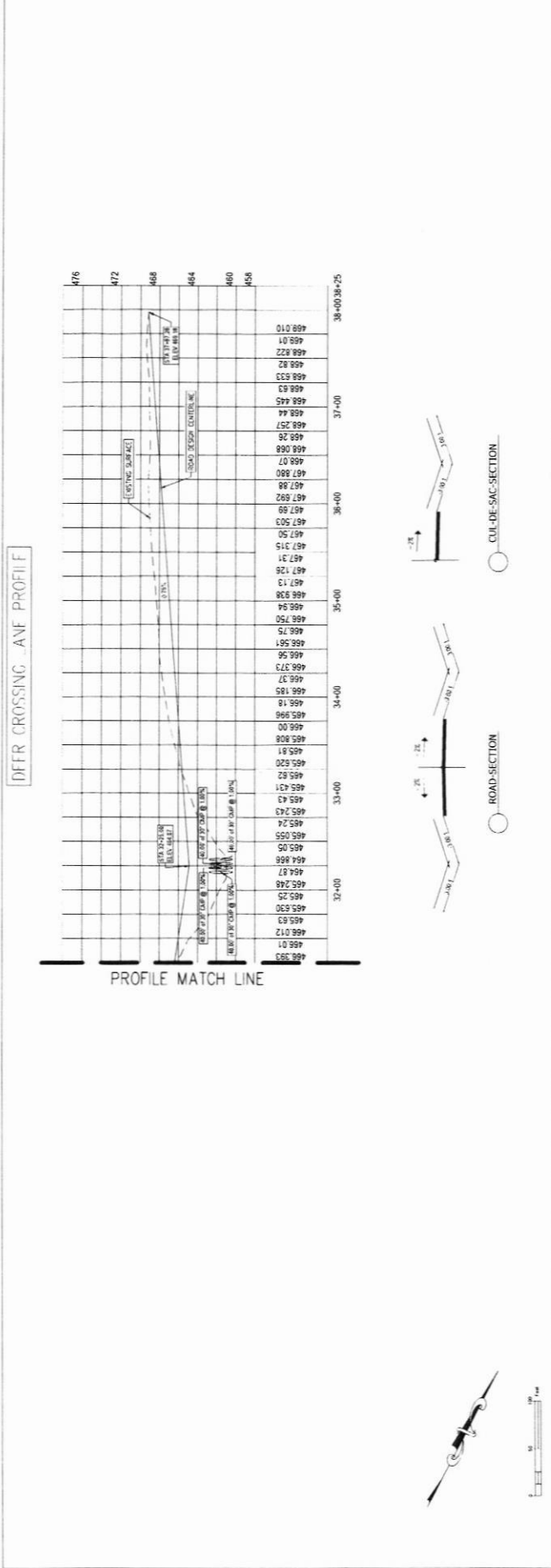


DYNAMIC
Engineering
Consultants
LLC
PROFESSIONAL
ENGINEERING
SERVICES
300 W. WINDYBROOK BLVD.
SUITE 1000 WINDYBROOK, TX
75087
PH: 972.333.1111
WWW.DYNAMICCONSULTANTS.COM

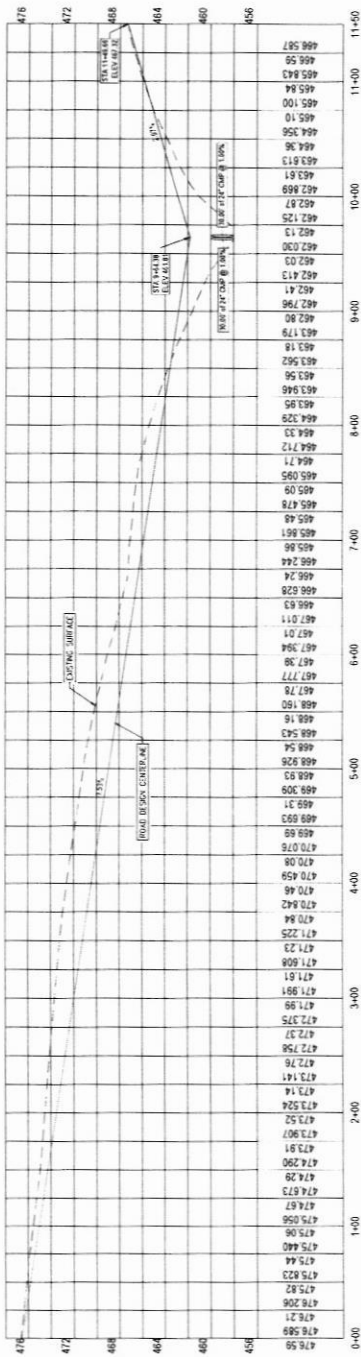


ENGINEERING TITLE	
NAME	
DATE	
CHECKED	
DESIGNED	
IN CHARGE	
DATE	

ROAD PLAN & PROFILE
PROJECT # 1051
SHEET NUMBER **C3.9**



SOUTHWEST LANE PROFILE



DEER CROSSING SUBDIVISION
DIKE, TX

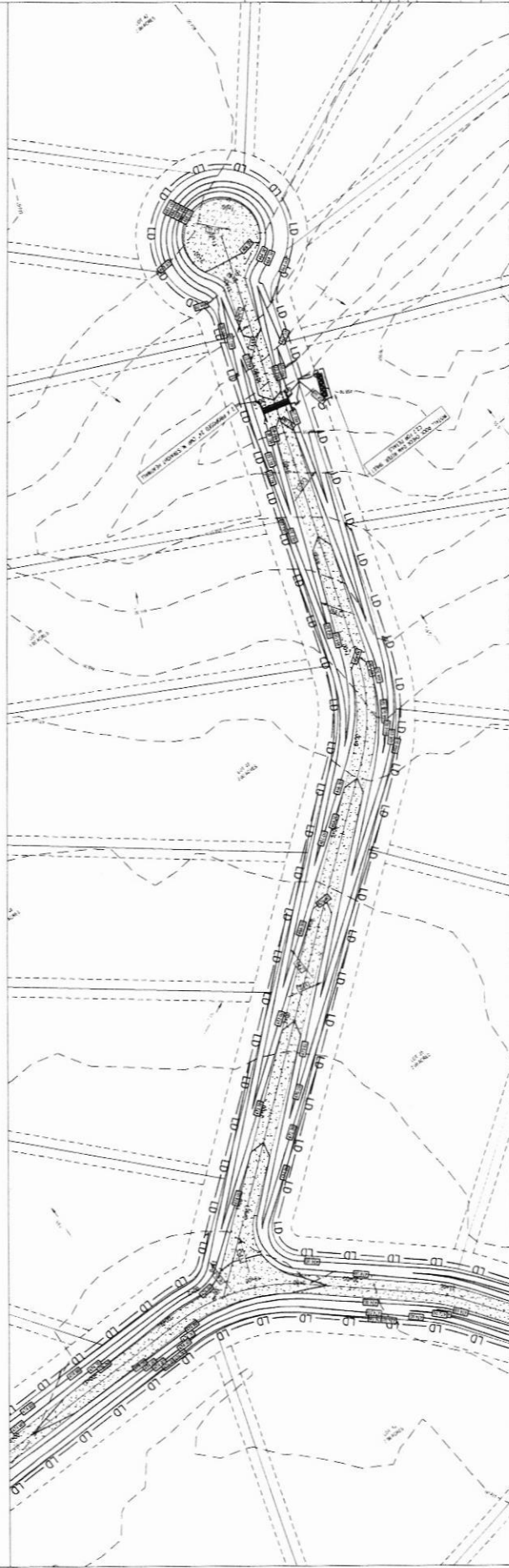
DYNAMIC
Engineering
Consultants
P.L.L.C.

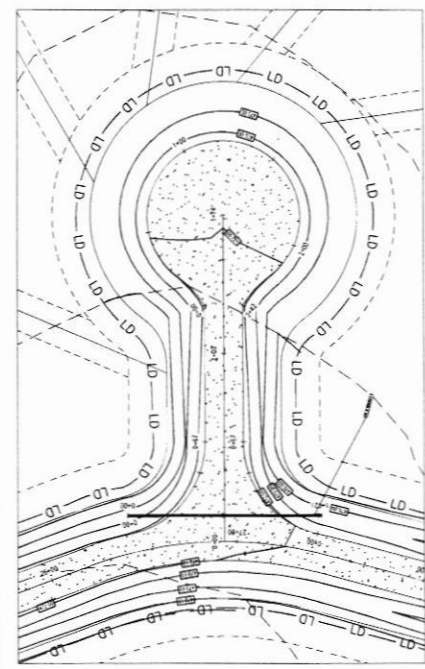
PROFESSIONAL
ENGINEERING
SERVICES
9000 WEST LOOP SOUTH
SUITE 1000
HOUSTON, TEXAS 77036
713.867.1111



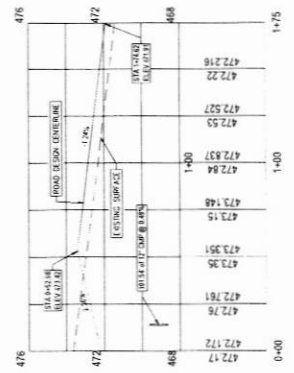
NO.	DATE	BY	CHKD.
1	11/20/21		
2			
3			
4			
5			
6			
7			
8			
9			
10			

PROJECT # 2514
SHEET NUMBER C3.11





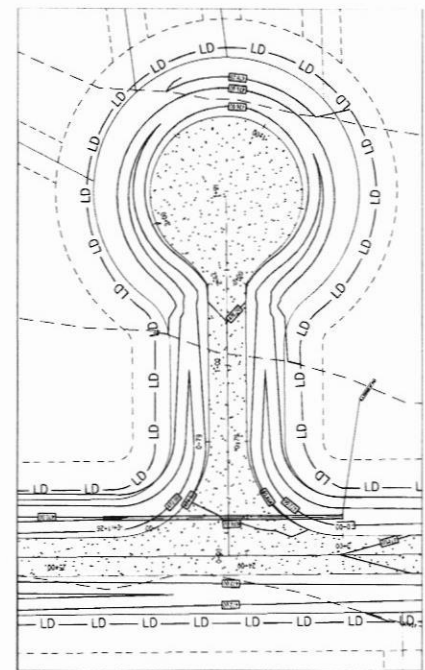
CENTRAL WEST ROAD PROFILE



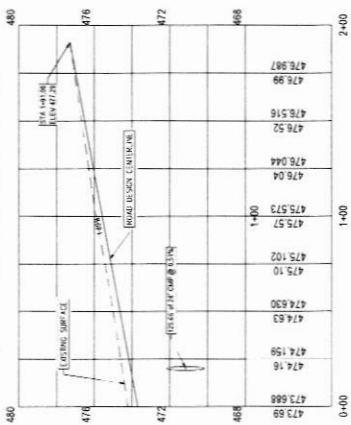
Channel Report
 17' CMP CENTRAL WEST

Channel: 17.00
 Slope: 0.0000
 Manning: 0.015
 Velocity: 1.48
 Discharge: 1.00
 Area: 0.00
 Wet Area: 0.00
 Wet Perim: 0.00
 Hydraulic Radius: 0.00
 Froude Number: 0.00
 Calculations: AutoCAD
 Project: 0

G)



CENTRAL EAST ROAD PROFILE



Channel Report
 24' CMP CENTRAL EAST

Channel: 24.00
 Slope: 0.0000
 Manning: 0.015
 Velocity: 1.95
 Discharge: 2.00
 Area: 0.00
 Wet Area: 0.00
 Wet Perim: 0.00
 Hydraulic Radius: 0.00
 Froude Number: 0.00
 Calculations: AutoCAD
 Project: 0

H)

DEER CROSSING SUBDIVISION
 DIKE, TX



PROFESSIONAL ENGINEERING SERVICES
 2801 S. GULFVIEW DRIVE, SUITE 100
 HOUSTON, TEXAS 77057



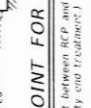
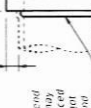
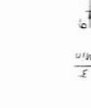
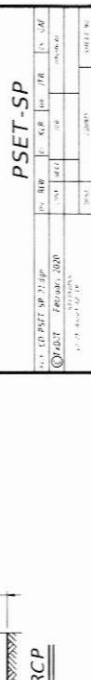
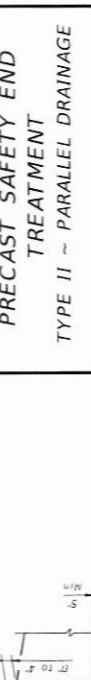
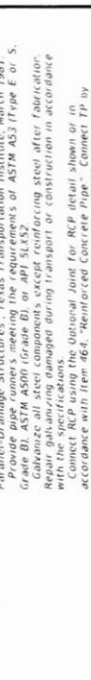
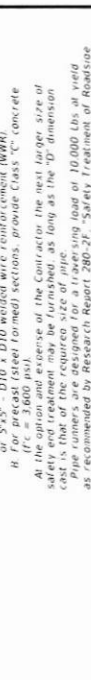
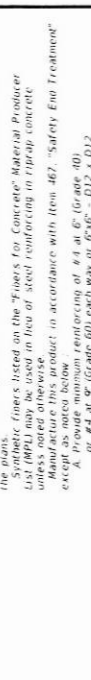
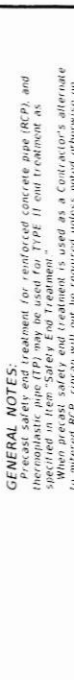
ROAD PLAN PROFILE
 PROJECT # 0714
 SHEET NUMBER

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "t" Thickness	TP Wall Thickness	Slope	Pipe Runners Required		Required Pipe Runner Size
				Single Pipe	Multiple Pipes	
12"	2"	1.15"	17.00'	6:1	Yes, for 3 STD	3.008'
15"	2 1/2"	1.30"	20.50'	6:1	Yes, for 3 STD	3.008'
18"	2 1/2"	1.40"	24.00'	6:1	Yes, for 3 STD	3.008'
24"	3"	1.95"	31.00'	6:1	Yes, for 3 STD	3.008'
30"	3 1/2"	2.65"	38.50'	6:1	Yes, for 4 STD	4.026'
36"	4"	2.75"	45.50'	6:1	Yes, for 4 STD	4.026'
42"	4 1/2"	2.7"	52.50'	6:1	Yes, for 4 STD	4.026'

- Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C 76, Class III, RCP Wall "t" thickness. Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for gasketed connections.
- Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicular safety.
- Trowel to be used only when dimension is shown elsewhere in the plans.
- Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment."
- Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Roadway Construction" standard. When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
- Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for gasketed connections.

GENERAL NOTES:
 Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as shown. When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
 The fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in RCP, concrete Manufacture this product in accordance with Item 467, "Safety End Treatment" or 4.4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WRR) (f_c = 3,600 psi).
 At the option and expense of the Contractor the next larger size of safety end treatment may be furnished, as long as the "D" dimension complies with the above.
 Pipe runners are designed for a live loading load of 10,000 lbs. as yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981, Grade BI, ASTM A500 (Grade B), or API 5L X52.
 Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with Item 464, "Reinforced Concrete Pipe" - Connect TP by grouting. See Pipe and Box Gasket Connections (PBG) standard for gasketed connections with TP and precast safety end treatment.



DATE: _____ FILE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____

APPROVED BY: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

SCALE: _____

PROJECT NO.: _____

DATE: _____

FILE: _____

DATE: _____

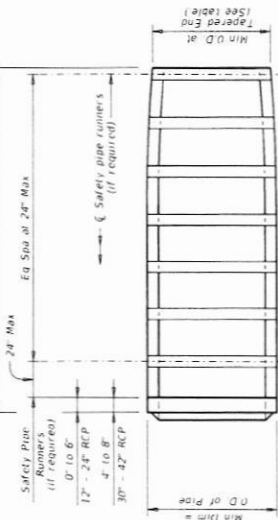
DESIGNER: _____

PREPARED BY: _____

CHECKED BY: _____</

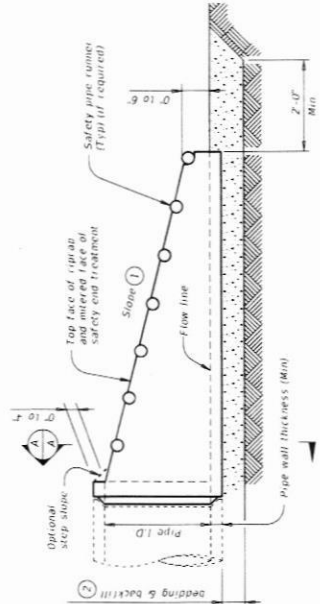
DISCLAIMER: The user of this standard is governed by the terms of the Engineering Service Agreement. No warranty or liability is made by TxDOT for any errors or omissions resulting from the use of this standard.

Unit Length Varies



PLAN VIEW - 12" THRU 24"

(Showing single end connection)



LONGITUDINAL ELEVATION - 12" THRU 24"

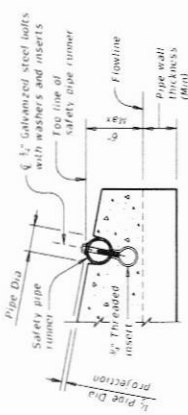
(Showing single end connection)

- 1) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- 2) Provide cement stabilized bedding and backfill Backfill for Structures: Bedding and backfill is considered subsidiary to the Item 467. Safety End Treatment when concrete riprap is used shall be as directed by Engineer.
- 3) Fill the top 4" of void between adjacent end riprap is considered subsidiary to the Item 467. "Safety End Treatment".
- 4) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- 5) Safety pipe runners are required for multiple pipe culverts with more than two pipes.

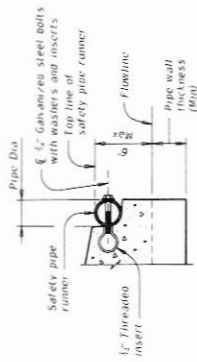


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(if required)



OPTION A

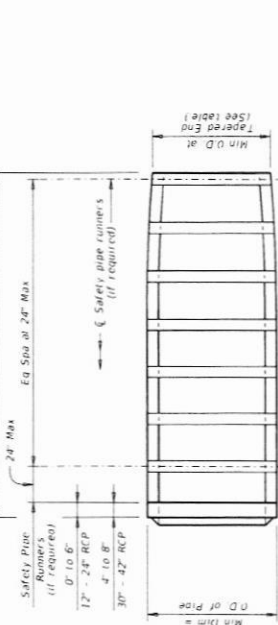


OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(if required)

Unit Length Varies



SECTION A-A

MULTIPLE PIPE INSTALLATION

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	Min Wall Thickness	Min Tapered End	Min Requirements (sq in per ft. of pipe)	Min Length Unit	Pipe Runner Requirements		Required Pipe Runner Sizes
					Single Pipe	Multiple Pipe	
12"	2"	16"	0.07 Circ.	6:1	4'-0"	No	5' STD 3.500' 3.068'
15"	2 1/4"	19 1/2"	0.07 Circ.	6:1	5'-8"	No	5' STD 3.500' 3.068'
18"	2 1/2"	23"	0.07 Circ.	6:1	7'-3"	No	5' STD 3.500' 3.068'
24"	3"	30"	0.07 Circ.	6:1	10'-6"	No	5' STD 3.500' 3.068'
30"	3 1/2"	37"	0.18 Circ.	6:1	12'-1"	No	Yes 4' STD 4.500' 4.026'
36"	4"	44"	0.19 Ellip.	6:1	15'-4"	Yes	Yes 4' STD 4.500' 4.026'
42"	4 1/2"	51"	0.23 Ellip.	6:1	18'-7"	Yes	Yes 4' STD 4.500' 4.026'

MATERIAL NOTES:
 Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete. Provide pipe runners meeting the requirements of ASTM A51 Type E or 5, or ASTM A500 Gr. B, or API 5L52.
 Galvanneal steel components except reinforcing steel after fabrication shall be packaged during transport or construction in accordance with the specifications.

GENERAL NOTES:
 Attachment for reinforced concrete pipe (RCP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment".
 When precast safety end treatment is used as a Contractor's alternate to the RCP, riprap will not be required unless noted otherwise on the plans.
 Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C1363 for precast concrete end sections.
 Provide precast concrete end sections with a spool or ball end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt, joint compound or other suitable grout material.
 Methods of lifting shall be approved by the manufacturer for ease of loading, unloading and installation.
 Pipe runners are designed for a traveling load of 10,000 lbs. at yield strength. Research Report 280-7, "Safety Treatment of Roadside Parallel Drainage Structures", Texas Transportation Institute, March 1981.

Texas Department of Transportation

BRIDGE STANDARD

PRECAST SAFETY END TREATMENT

TYPE II - PARALLEL DRAINAGE

PSET-RP

REV	DATE	BY	CHK	APP	DESCRIPTION
001	08/20/2007				
002	08/20/2007				

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY)

Nominal Conduit (Pipe) I.D.	PSET-SC and PSET-SP Standards		PSET-RC and PSET-AP Standards		Side Slope	
	Unit Width "W"	Unit Length "L"	Unit Width "W"	Unit Length "L"	Side Slope	Side Slope
12"	23.0'	3.1	4.1	6.1	3:1	4:1
15"	26.5'	0.2	0.2	16.0'	0.1	0.1
18"	30.0'	0.2	0.3	19.5'	0.1	0.2
24"	37.0'	0.3	0.3	23.0'	0.2	0.3
30"	44.5'	0.3	0.4	30.0'	0.2	0.3
36"	51.5'	0.4	0.5	37.0'	0.3	0.4
42"	58.5'	0.5	0.6	44.0'	0.3	0.4
				51.0'	0.4	0.5

- Riprap placed beyond the limits shown will be laid as concrete riprap in accordance with Item 432 "Riprap" when riprap is cast integrally with the precast safety end treatment. This dimension is 1'-0" minimum.
- 1"x2" Dia ASTM A307 Gr. A threaded anchor rod with 2 nuts and 2 washers. Galvanize all components in accordance with Item 445 "Galvanizing". Repair galvanizing that is damaged during transport or construction in accordance with the specifications.
- 3"x4" through holes in walls of safety end treatment for riprap anchor rods may be drilled with rotary (coring or masonry) type drilling equipment or may be drilled with hand tools. Anchor rods shall be drilled in the inside face of the wall exceeding 1/2" from the holes.
- Provide riprap toe wall when dimension is shown elsewhere in the plans or when field conditions require a toe wall.
- Quantities shown are for one end of one reinforced concrete pipe culvert. For multiple pipe culverts, quantities will need to be adjusted. Riprap quantities are based on the length of riprap shown on the plans. Riprap quantities are based on unit lengths shown on the Precast Safety End Treatment (SET) Standard Sheets.

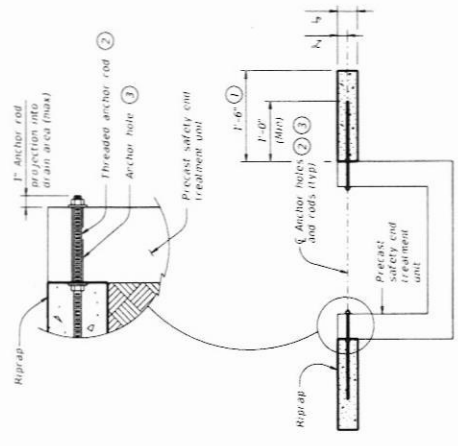
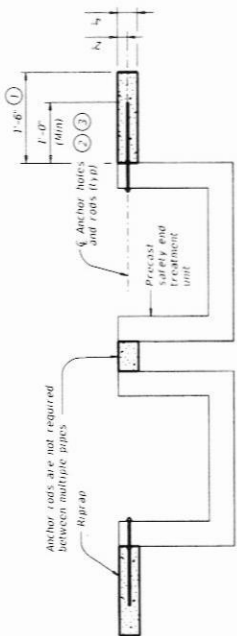
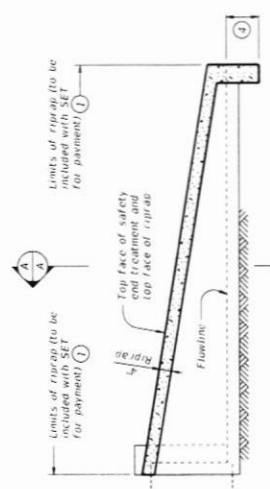
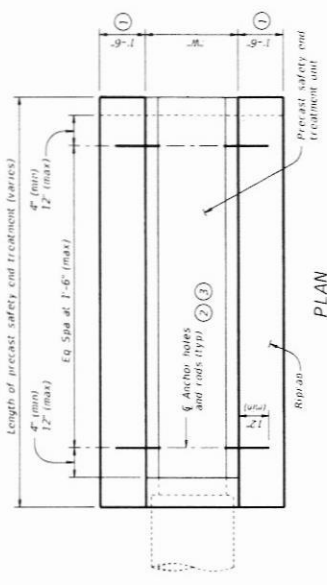
MATERIAL NOTES:

1. Riprap in accordance with Item 432 "Riprap".
 Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. The anchor rods shown are always required.
GENERAL NOTES:
 Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item 467 "Safety End Treatment" separate safety end treatments not shown. Refer to PSET-RC or PSET-AP Standard Sheets for details of riprap safety end treatments not shown.
 For precast units with integrally cast riprap, substitute reinforcing steel in the end treatment as specified in Item 467 "Safety End Treatment".
 Submit sealed engineering drawings for approval prior to construction. Shop drawings will not be required. Note that a proprietary precast unit with integral riprap is available from L&B Precast Concrete Works, Inc. (956) 583 6293 or www.lbprecast.com.
 For riprap and toe walls is included in the price bid for each safety end treatment.

These riprap details are only applicable when notes, but rebar placement of riprap with precast safety end treatments are shown elsewhere in the plans.
 Precast units with integrally cast riprap are permitted unless noted otherwise on the plans.

Texas Department of Transportation
Bridge Division Standard
PRECAST SAFETY END TREATMENT TYPE II RIPRAP DETAILS
PSET-RR

Rev. 01/17 04/11 07/08 08/04
 Item No. 10-1000
 Section No. 10-1000
 Sheet No. 10-1000



SECTION A-A

MULTIPLE PIPE INSTALLATION

SINGLE PIPE INSTALLATION

DISCLAIMER: This drawing is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any errors or omissions resulting from its use. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES

Nominal Culvert I.D.	Conc. Riprap (CY)	Pipe Culvert Spa - G	Single Barrel - 01	Multi-Barrel - 01	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0'-9"	M/A	2'-1"	1'-9"	3 or more pipe culverts	3" Std (3.500' O.D.)
15"	0.7	0'-11"	M/A	2'-5"	2'-6"		
18"	0.8	1'-2"	M/A	2'-10"	2'-6"		
21"	0.9	1'-4"	M/A	3'-2"	3'-1"		
24"	0.9	1'-7"	M/A	3'-6"	3'-1"		
27"	1.0	1'-8"	M/A	3'-10"	3'-11"		
30"	1.1	1'-10"	M/A	4'-2"	4'-4"		
33"	1.2	1'-11"	4'-2"	4'-5"	4'-8"		
36"	1.3	2'-1"	4'-5"	4'-9"	5'-1"		
42"	1.5	2'-4"	4'-11"	5'-5"	5'-10"		
48"	1.7	2'-7"	5'-5"	6'-0"	6'-7"		
54"	2.0	3'-0"	5'-11"	6'-9"	7'-6"		
60"	2.2	3'-3"	6'-5"	7'-4"	8'-3"		
66"	2.4	3'-6"	6'-11"	7'-10"	8'-9"		
72"	2.7	3'-9"	7'-5"	8'-5"	9'-4"		

- The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.
- Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3" x 2" standard piece (4" O.D.) for the first bottom pipe.
- Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete is placed on the bottom of the culvert to allow chromast access. At the Contractor's option, install all other cross pipes using the bolted connection details.
- Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, Riprap.
- Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities are to be adjusted accordingly. Riprap quantities are for contractor's information only.

MATERIAL NOTES:
 1. Riprap shall be based on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
 2. Pipe size, cross pipe spacing, and riprap quantities shall conform to the following:
 (1) Provide ASTM A307 bolts and nuts.
 (2) Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing in damaged areas to meet or exceed the original finish.
 (3) Construction in accordance with the specifications.

GENERAL NOTES:
 1. Cross pipes are designed for a 15-year design load of 10,000 lbs. per sq. ft. as determined by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1983.
 2. Safety and Treatment (SET) shown here are intended for use to traverse the openings approximately perpendicular to the cross pipes.
 3. Construct concrete riprap and all necessary inlets in accordance with the specifications.
 4. Payment for riprap and towwall is included in the Price Bid for each Safety End Treatment.

Texas Department of Transportation

BRIDGE STANDARD

SAFETY END TREATMENT FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II - PARALLEL DRAINAGE SETP-PD

PROJECT NO.	SECTION NO.	DATE	BY	CHECKED
10-10-10-10-10-10	10-10-10-10-10	10-10-10	10-10-10	10-10-10

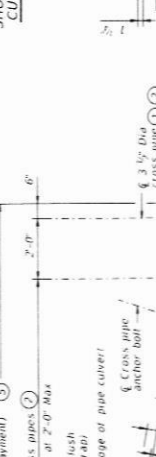
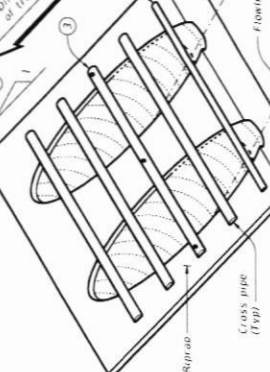
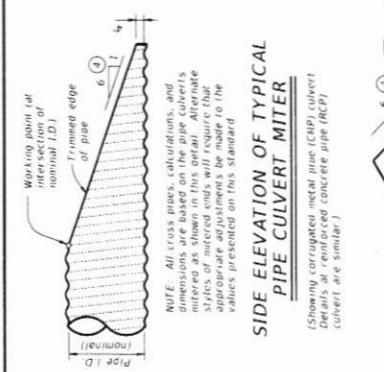
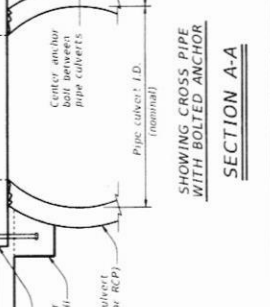
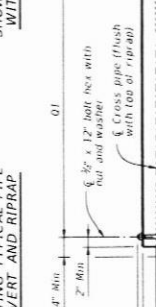
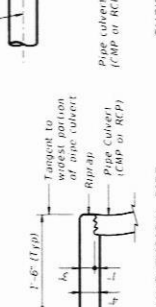
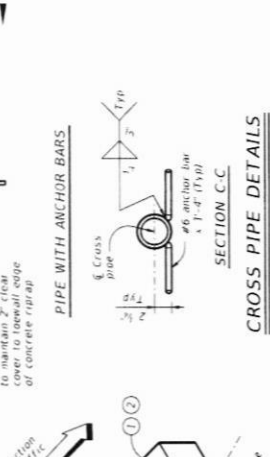
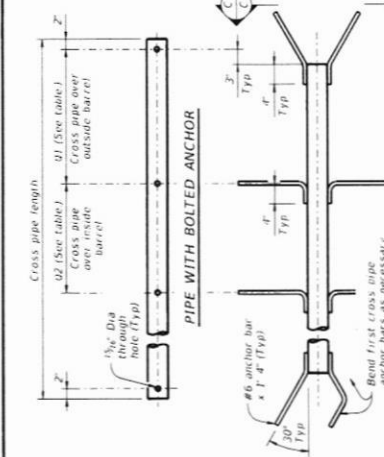
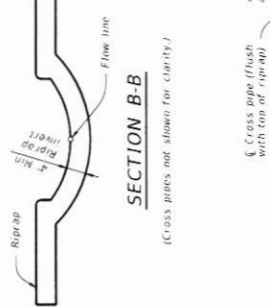
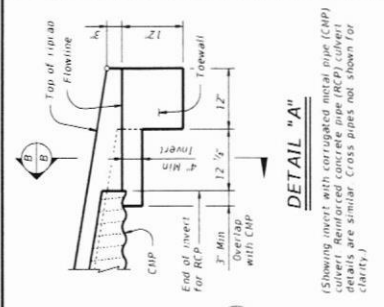


TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (3)

Slope	Values for One Pipe				Reinf. Conc. (lbs.)	Reinf. Conc. (cu) X and W	Values to be Added for Each Adj. Pipe		
	W	X	Y	L					
12°	7-7 1/2"	2-6"	2-10"	3-3 3/4"	88	0.6	1-9"	20	0.2
15°	5-5 1/2"	2-9 1/2"	3-4"	3-10 3/4"	103	0.7	2-2"	24	0.3
18°	6-4 1/2"	3-1"	3-10"	4-5"	124	0.9	2-8"	31	0.4
21°	7-2 1/2"	3-4 1/2"	4-4"	5-0"	143	1.1	3-1"	43	0.4
24°	8-2 1/2"	3-9 1/2"	4-10"	5-7"	164	1.3	3-7"	50	0.5
27°	9-1 1/2"	4-4 1/2"	5-4"	6-2"	179	1.5	3-11"	56	0.6
30°	9-11 1/2"	4-4 1/2"	5-10"	6-8 1/2"	203	1.7	4-4"	65	0.8
33°	10-10"	4-8"	6-4"	7-3 1/2"	224	2.0	4-8"	71	0.9
36°	11-8 1/2"	4-11 1/2"	6-10"	7-10 3/4"	249	2.2	5-1"	81	1.0
42°	13-5 1/2"	5-6 1/2"	9-0 1/2"	9-0 1/2"	298	2.8	5-10"	97	1.3
48°	15-9 1/2"	6-1 1/2"	9-4"	10-9 1/2"	360	3.6	6-7"	117	1.7
54°	17-5 1/2"	6-8 1/2"	10-4"	11-11 1/2"	427	4.5	7-6"	151	2.1
60°	19-2 1/2"	7-3 1/2"	11-4"	12-1"	481	5.3	8-3"	174	2.5
66°	20-11 1/2"	7-10 1/2"	12-4"	14-3"	544	6.2	8-9"	194	2.9
72°	22-8 1/2"	8-5 1/2"	13-4"	15-4 1/2"	601	7.1	9-4"	213	3.3
78°	24-3"	9-2"	14-3"	16-2"	657	8.0	9-8"	232	3.7
84°	25-7 1/2"	9-9 1/2"	15-0"	17-1 1/2"	713	8.9	10-2"	251	4.1
90°	27-12-2"	10-4 1/2"	16-0"	18-11 1/2"	769	9.8	10-6"	270	4.5
96°	28-14-5 3/4"	10-8"	17-0"	19-10 1/2"	825	10.7	11-0"	289	4.9
102°	29-17-1 1/2"	11-2 1/2"	18-0"	20-11 1/2"	881	11.6	11-4"	308	5.3
108°	30-20-5 1/2"	11-6 1/2"	19-0"	21-10 1/2"	937	12.5	11-8"	327	5.7
114°	31-23-1 1/2"	12-0 1/2"	20-0"	22-10 1/2"	993	13.4	12-2"	346	6.1
120°	32-26-6 1/2"	12-4 1/2"	21-0"	23-10 1/2"	1049	14.3	12-6"	365	6.5
126°	33-29-1 1/2"	12-8 1/2"	22-0"	24-10 1/2"	1105	15.2	13-0"	384	6.9
132°	34-32-6 1/2"	13-2 1/2"	23-0"	25-10 1/2"	1161	16.1	13-4"	403	7.3
138°	35-35-1 1/2"	13-6 1/2"	24-0"	26-10 1/2"	1217	17.0	13-8"	422	7.7
144°	36-38-6 1/2"	14-0 1/2"	25-0"	27-10 1/2"	1273	17.9	14-2"	441	8.1
150°	37-41-1 1/2"	14-4 1/2"	26-0"	28-10 1/2"	1329	18.8	14-6"	460	8.5
156°	38-44-6 1/2"	14-8 1/2"	27-0"	29-10 1/2"	1385	19.7	15-0"	479	8.9
162°	39-47-1 1/2"	15-2 1/2"	28-0"	30-10 1/2"	1441	20.6	15-4"	498	9.3
168°	40-50-6 1/2"	15-6 1/2"	29-0"	31-10 1/2"	1497	21.5	15-8"	517	9.7
174°	41-53-1 1/2"	16-0 1/2"	30-0"	32-10 1/2"	1553	22.4	16-2"	536	10.1
180°	42-56-6 1/2"	16-4 1/2"	31-0"	33-10 1/2"	1609	23.3	16-6"	555	10.5
186°	43-59-1 1/2"	16-8 1/2"	32-0"	34-10 1/2"	1665	24.2	17-0"	574	10.9
192°	44-62-6 1/2"	17-2 1/2"	33-0"	35-10 1/2"	1721	25.1	17-4"	593	11.3
198°	45-65-1 1/2"	17-6 1/2"	34-0"	36-10 1/2"	1777	26.0	17-8"	612	11.7
204°	46-68-6 1/2"	18-0 1/2"	35-0"	37-10 1/2"	1833	26.9	18-2"	631	12.1
210°	47-71-1 1/2"	18-4 1/2"	36-0"	38-10 1/2"	1889	27.8	18-6"	650	12.5
216°	48-74-6 1/2"	18-8 1/2"	37-0"	39-10 1/2"	1945	28.7	19-0"	669	12.9
222°	49-77-1 1/2"	19-2 1/2"	38-0"	40-10 1/2"	2001	29.6	19-4"	688	13.3
228°	50-80-6 1/2"	19-6 1/2"	39-0"	41-10 1/2"	2057	30.5	19-8"	707	13.7
234°	51-83-1 1/2"	20-0 1/2"	40-0"	42-10 1/2"	2113	31.4	20-2"	726	14.1
240°	52-86-6 1/2"	20-4 1/2"	41-0"	43-10 1/2"	2169	32.3	20-6"	745	14.5
246°	53-89-1 1/2"	20-8 1/2"	42-0"	44-10 1/2"	2225	33.2	21-0"	764	14.9
252°	54-92-6 1/2"	21-2 1/2"	43-0"	45-10 1/2"	2281	34.1	21-4"	783	15.3
258°	55-95-1 1/2"	21-6 1/2"	44-0"	46-10 1/2"	2337	35.0	21-8"	802	15.7
264°	56-98-6 1/2"	22-0 1/2"	45-0"	47-10 1/2"	2393	35.9	22-2"	821	16.1
270°	57-101-1 1/2"	22-4 1/2"	46-0"	48-10 1/2"	2449	36.8	22-6"	840	16.5
276°	58-104-6 1/2"	22-8 1/2"	47-0"	49-10 1/2"	2505	37.7	23-0"	859	16.9
282°	59-107-1 1/2"	23-2 1/2"	48-0"	50-10 1/2"	2561	38.6	23-4"	878	17.3
288°	60-110-6 1/2"	23-6 1/2"	49-0"	51-10 1/2"	2617	39.5	23-8"	897	17.7
294°	61-113-1 1/2"	24-0 1/2"	50-0"	52-10 1/2"	2673	40.4	24-2"	916	18.1
300°	62-116-6 1/2"	24-4 1/2"	51-0"	53-10 1/2"	2729	41.3	24-6"	935	18.5
306°	63-119-1 1/2"	24-8 1/2"	52-0"	54-10 1/2"	2785	42.2	25-0"	954	18.9
312°	64-122-6 1/2"	25-2 1/2"	53-0"	55-10 1/2"	2841	43.1	25-4"	973	19.3
318°	65-125-1 1/2"	25-6 1/2"	54-0"	56-10 1/2"	2897	44.0	25-8"	992	19.7
324°	66-128-6 1/2"	26-0 1/2"	55-0"	57-10 1/2"	2953	44.9	26-2"	1011	20.1
330°	67-131-1 1/2"	26-4 1/2"	56-0"	58-10 1/2"	3009	45.8	26-6"	1030	20.5
336°	68-134-6 1/2"	26-8 1/2"	57-0"	59-10 1/2"	3065	46.7	27-0"	1049	20.9
342°	69-137-1 1/2"	27-2 1/2"	58-0"	60-10 1/2"	3121	47.6	27-4"	1068	21.3
348°	70-140-6 1/2"	27-6 1/2"	59-0"	61-10 1/2"	3177	48.5	27-8"	1087	21.7
354°	71-143-1 1/2"	28-0 1/2"	60-0"	62-10 1/2"	3233	49.4	28-2"	1106	22.1
360°	72-146-6 1/2"	28-4 1/2"	61-0"	63-10 1/2"	3289	50.3	28-6"	1125	22.5

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (Di)	G	A	H
12"	0-9"	1'-0"	2'-0"
15"	0-11"	1'-0"	2'-3"
18"	1-2"	1'-0"	2'-6"
21"	1-4"	1'-0"	2'-9"
24"	1-7"	1'-0"	3'-0"
27"	1-10"	1'-0"	3'-3"
30"	1-13"	1'-0"	3'-6"
33"	1-16"	1'-0"	3'-9"
36"	2-1"	1'-0"	4'-0"
42"	2-4"	1'-0"	4'-6"
48"	2-7"	1'-3"	5'-3"
54"	3-0"	1'-3"	5-9"
60"	3-3"	1'-3"	6-3"
66"	3-6"	1'-3"	6-9"
72"	3-9"	1'-3"	7-3"

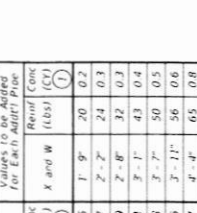
TABLE OF REINFORCING STEEL

Bar	Size	Sta	Nb
A	#4	1'-0"	-
B	#3	1'-6"	-
C	#4	1'-0"	-
D	#3	1'-0"	-
E	#5	-	4
F	#5	-	4
G	#3	-	2
H	#4	-	6
V	#4	1'-0"	-
W	#5	-	4

ELEVATION
(Showing dimensions.)



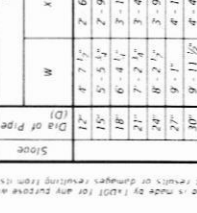
BARS B and B1-x



BARS CL
(Length = 2'S)



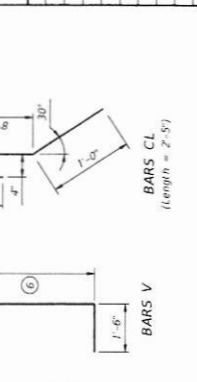
PLAN



TYPICAL WING ELEVATION



SECTION A-A



MATERIAL NOTES:

- Provide Grade 60 reinforcing steel. Provide Class C concrete (f'c = 3,600 psi).
- Design according to AASHTO LRFD Bridge Design Specifications. Do not mount bridge rails of any type directly to these culvert headwalls. This standard may not be used for wall heights, H, exceeding the values shown.
- Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

GENERAL NOTES:

- Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- For vehicle safety, construct curbs on more than one side where needed and curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Provide a 1'-0" footing as shown where required to maintain a minimum cover for pipes.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).
- Bar Length = $6' + 3' \times \left\{ \frac{12 \times H \times Z}{12 \times L} \right\}$. Max. Length = $12 \times H \times 3' \times \left\{ \frac{12 \times H \times Z}{12 \times L} \right\}$.
- Lengths of wraps based on SL1 slope along this line.

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

Texas Department of Transportation
Bridge Division
Standard

CH-FW-0

Project No.	Sheet No.	Date
2017-01-1001	1001	10/10/17
2017-01-1001	1002	10/10/17
2017-01-1001	1003	10/10/17
2017-01-1001	1004	10/10/17

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL

Dia of Pipe	Values for One Pipe			Values to Be Added for Each Additional Pipe		
	W	Reinf (CY)	Conc (CY)	W	Reinf (CY)	Conc (CY)
12"	9'-0"	122	1.1	1'-9"	15	0.2
15"	10'-3"	136	1.3	2'-2"	16	0.2
18"	11'-6"	163	1.5	2'-8"	19	0.3
21"	12'-9"	200	1.8	3'-1"	31	0.4
24"	14'-0"	217	2.1	3'-7"	34	0.4
27"	15'-3"	254	2.4	3'-11"	37	0.5
30"	16'-6"	272	2.7	4'-4"	40	0.6
33"	17'-9"	314	3.1	4'-8"	43	0.6
36"	19'-0"	371	3.9	5'-1"	46	0.8
42"	21'-6"	442	4.9	5'-10"	52	1.0
48"	25'-0"	569	6.4	6'-7"	59	1.3
54"	27'-6"	701	7.5	7'-6"	82	1.6
60"	30'-0"	794	8.8	8'-3"	90	1.8
66"	32'-6"	894	10.2	8'-9"	96	2.0
72"	35'-0"	1,055	11.7	9'-4"	103	2.3
12"	13'-0"	175	1.6	1'-9"	14	0.2
15"	14'-9"	193	1.9	2'-2"	17	0.2
18"	16'-6"	228	2.2	2'-8"	19	0.3
21"	18'-3"	299	2.6	3'-1"	31	0.4
24"	20'-0"	323	3.0	3'-7"	35	0.4
27"	21'-9"	371	3.5	3'-11"	37	0.5
30"	23'-6"	415	4.0	4'-4"	40	0.5
33"	25'-3"	469	4.6	4'-8"	43	0.6
36"	27'-0"	556	5.7	5'-1"	46	0.8
42"	30'-6"	675	7.1	5'-10"	52	1.0
48"	35'-6"	837	9.2	6'-7"	59	1.3
54"	39'-0"	1,015	11.0	7'-6"	84	1.6
60"	42'-6"	1,171	12.9	8'-3"	91	1.8
66"	46'-0"	1,298	14.9	8'-9"	98	2.0
72"	49'-6"	1,561	17.1	9'-4"	103	2.3
12"	17'-0"	229	2.0	1'-9"	15	0.2
15"	19'-3"	266	2.4	2'-2"	17	0.2
18"	21'-6"	308	2.9	2'-8"	19	0.3
21"	23'-9"	362	3.5	3'-1"	31	0.3
24"	26'-0"	430	3.9	3'-7"	34	0.4
27"	28'-3"	486	4.7	3'-11"	37	0.5
30"	30'-6"	539	5.2	4'-4"	40	0.6
33"	32'-9"	603	6.0	4'-8"	42	0.6
36"	35'-0"	738	7.5	5'-1"	47	0.8
42"	39'-6"	881	9.3	5'-10"	52	1.0
48"	46'-0"	1,102	12.1	6'-7"	61	1.3
54"	50'-6"	1,364	14.4	7'-6"	84	1.6
60"	55'-0"	1,547	16.9	8'-3"	91	1.8
66"	59'-6"	1,741	19.5	8'-9"	98	2.0
72"	64'-0"	2,077	22.4	9'-4"	102	2.3
12"	25'-0"	336	3.0	1'-9"	14	0.2
15"	28'-3"	384	3.6	2'-2"	17	0.2
18"	31'-6"	452	4.2	2'-8"	19	0.3
21"	34'-9"	581	5.1	3'-1"	31	0.4
24"	38'-0"	644	5.8	3'-7"	34	0.4
27"	41'-3"	737	6.9	3'-11"	37	0.5
30"	44'-6"	807	7.7	4'-4"	39	0.6
33"	47'-9"	912	8.9	4'-8"	44	0.6
36"	51'-0"	1,108	11.0	5'-1"	46	0.8
42"	57'-6"	1,318	13.7	5'-10"	54	1.0
48"	67'-0"	1,682	17.9	6'-7"	59	1.3
54"	73'-6"	2,072	21.3	7'-6"	83	1.6
60"	80'-0"	2,351	24.9	8'-3"	89	1.8
66"	86'-6"	2,643	28.9	8'-9"	96	2.0
72"	93'-0"	3,121	33.1	9'-4"	101	2.3

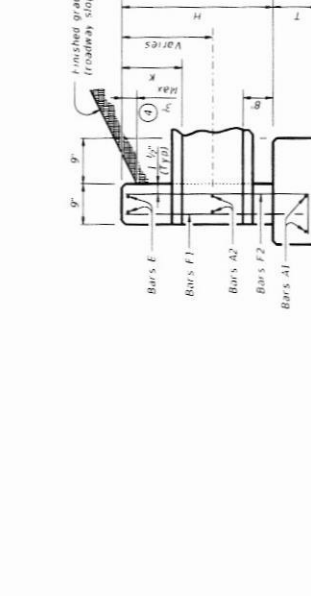
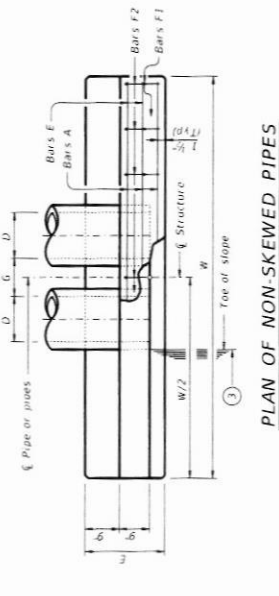
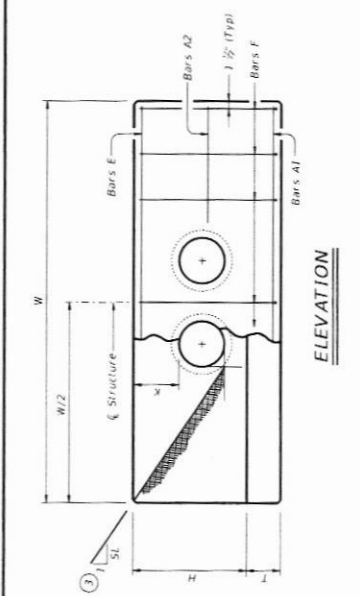


TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K	h	T	E
12"	0'-9"	1'-0"	2'-8"	0'-9"	1'-9"
15"	0'-11"	1'-0"	2'-11"	0'-9"	1'-9"
18"	1'-2"	1'-0"	3'-2"	0'-9"	1'-9"
21"	1'-4"	1'-0"	3'-5"	0'-9"	2'-0"
24"	1'-7"	1'-0"	3'-8"	0'-9"	2'-0"
27"	1'-8"	1'-0"	3'-11"	0'-9"	2'-3"
30"	1'-10"	1'-0"	4'-2"	0'-9"	2'-3"
33"	1'-11"	1'-0"	4'-5"	0'-9"	2'-6"
36"	2'-4"	1'-0"	4'-8"	1'-0"	2'-6"
42"	2'-4"	1'-0"	5'-2"	1'-0"	2'-9"
48"	2'-7"	1'-3"	5'-11"	1'-0"	3'-0"
54"	3'-0"	1'-3"	6'-5"	1'-0"	3'-3"
60"	3'-3"	1'-3"	6'-11"	1'-0"	3'-6"
66"	3'-3"	1'-3"	7'-5"	1'-0"	3'-9"
72"	3'-4"	1'-3"	7'-11"	1'-0"	4'-0"

TABLE OF REINFORCING STEEL

Bar	Size	Spa	No.
A1	#5	-	2
A2	#5	1'-6"	-
E	#5	-	2
F	#5	1'-0"	-

MATERIAL NOTES:
Provide Grade 60 reinforcing steel
Provide Class C concrete (f'c = 3,000 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Clear dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Standard

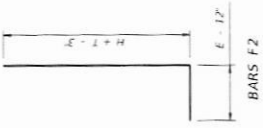
CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

Rev. 01-01-PAGE 20-3P
01/01 February, 2020

PROJECT NO. _____
DRAWING NO. _____
SHEET NO. _____

- Total quantities include one 3'-1" lap for bars over 60 in length.
- Quantities shown are for concrete pipe and wall increase slightly for metal pipe installations.
- Indicates slope is perpendicular to centerline pipe or pipes.
- For vehicle safety, construct curbs no more than 6" above the curb heights, if necessary, to meet these requirements. No changes will be made in quantities, and no additional compensation will be allowed for this work.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).



DISCLAIMER: The use of this standard is governed by the terms and conditions of the license agreement between the user and the Texas Department of Transportation. The user assumes all responsibility for the accuracy of the information provided herein and for any damages resulting from its use.