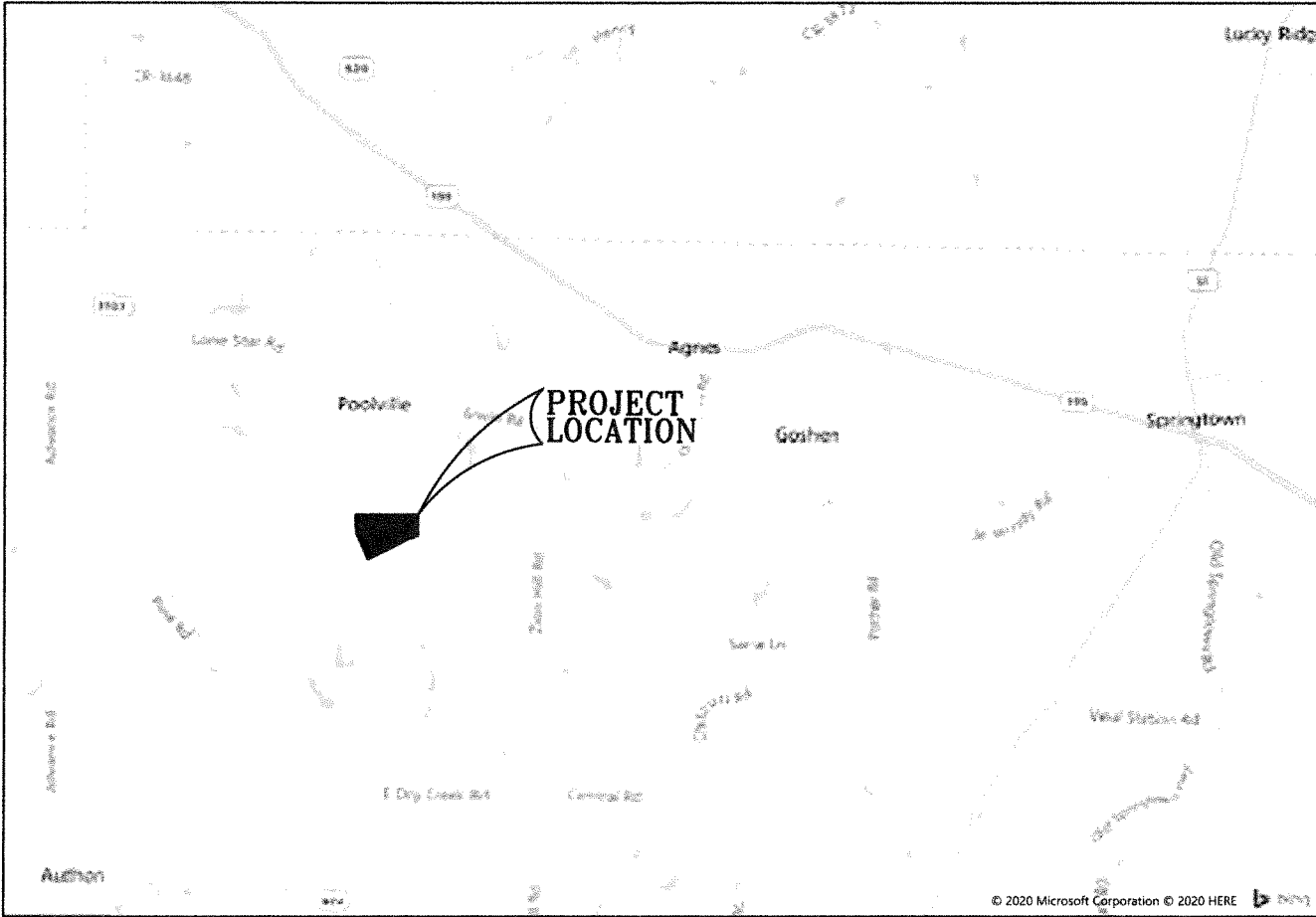


# ROADWAY LAYOUT AND DRAINAGE PLANS FOR PARADISE MEADOWS A RESIDENTIAL SUBDIVISION PARKER COUNTY, TEXAS

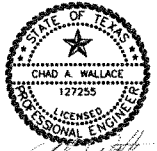


VICINITY MAP  
N.T.S.

January 2021

| Sheet List Table |                             |
|------------------|-----------------------------|
| Sheet Number     | Sheet Title                 |
| -                | COVER                       |
| -                | PLAT 1 OF 3                 |
| -                | PLAT 2 OF 3                 |
| -                | PLAT 3 OF 3                 |
| 1                | DRAINAGE AREA MAP           |
| 2                | DRAINAGE CALCULATIONS       |
| 3                | CULVERT PLAN                |
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| 5                | ROADWAY LAYOUT 1 OF 3       |
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| 8                | EROSION CONTROL PLAN        |
| 9                | EROSION CONTROL DETAILS     |
| 10               | CONSTRUCTION DETAILS 1 OF 2 |
| 11               | CONSTRUCTION DETAILS 2 OF 2 |

PARADISE MEADOWS Permanent Records COA



1/10/2021



| Line Table |             |        |
|------------|-------------|--------|
| Line #     | Direction   | Length |
| L1         | S76°34'24"W | 309.13 |
| L2         | S63°23'03"W | 98.61  |
| L3         | N67°38'11"E | 299.79 |
| L4         | N71°43'48"E | 14.49  |
| L5         | S80°50'18"W | 495.67 |
| L6         | S81°01'49"W | 296.50 |
| L7         | S6°40'46"E  | 81.08  |
| L8         | S89°33'45"W | 26.52  |
| L9         | S75°35'55"W | 96.65  |
| L10        | N80°47'25"W | 92.34  |
| L11        | N81°15'11"W | 33.25  |
| L12        | N81°15'11"W | 42.29  |
| L13        | N69°43'17"W | 106.41 |
| L14        | S77°21'16"W | 60.76  |
| L15        | S76°12'50"W | 76.59  |
| L16        | S76°12'50"W | 76.59  |
| L17        | N90°00'00"W | 75.88  |
| L18        | N64°04'37"W | 78.21  |
| L19        | N37°43'23"W | 139.11 |
| L20        | N37°43'23"W | 2.62   |
| L21        | N56°54'03"W | 98.31  |
| L22        | S87°19'57"W | 51.88  |
| L23        | N56°51'39"W | 78.46  |
| L24        | N86°05'54"W | 165.73 |
| L26        | N76°28'26"W | 61.83  |
| L27        | S32°44'38"E | 85.38  |
| L28        | S89°33'45"W | 26.52  |
| L29        | S75°35'55"W | 84.16  |
| L30        | N75°35'55"E | 96.65  |
| L31        | N89°33'45"E | 26.52  |
| L32        | S23°59'58"W | 100.57 |
| L33        | N71°43'48"E | 2.48   |
| L34        | S85°46'24"W | 105.05 |
| L35        | S63°23'34"W | 95.34  |
| L36        | N24°02'02"W | 28.78  |
| L37        | N24°02'02"W | 108.06 |
| L38        | N89°15'22"E | 11.81  |
| L39        | N89°15'22"E | 126.59 |
| L40        | S89°15'22"W | 22.93  |
| L41        | S2°38'02"E  | 36.60  |
| L42        | S89°15'22"W | 50.33  |
| L43        | N89°15'22"E | 101.06 |
| L44        | S89°15'22"W | 8.21   |
| L45        | N2°38'02"W  | 50.03  |

| Curve Table |            |          |            |               |              |
|-------------|------------|----------|------------|---------------|--------------|
| Curve #     | Delta      | Radius   | Arc Length | Chord Bearing | Chord Length |
| C1          | 4°57'47"   | 3706.82' | 321.10'    | N21°33'18"W   | 321.00'      |
| C2          | 11°13'03"  | 1096.00' | 214.58'    | N8°14'33"W    | 214.24'      |
| C3          | 14°03'13"  | 300.00'  | 73.58'     | S70°25'10"W   | 73.40'       |
| C4          | 129°05'12" | 200.00'  | 450.60'    | N12°54'11"E   | 361.16'      |
| C5          | 24°50'01"  | 300.00'  | 130.03'    | N64°03'25"W   | 129.01'      |
| C6          | 13°57'50"  | 300.00'  | 73.11'     | N83°27'20"W   | 72.93'       |
| C7          | 13°57'50"  | 300.00'  | 73.11'     | S82°34'50"W   | 72.93'       |
| C8          | 13°57'50"  | 300.00'  | 73.11'     | N82°34'50"E   | 72.93'       |
| C9          | 14°03'13"  | 270.00'  | 66.23'     | N70°25'10"E   | 66.06'       |
| C10         | 13°39'23"  | 230.00'  | 54.82'     | N70°37'05"E   | 54.69'       |
| C11         | 33°07'08"  | 230.00'  | 132.95'    | N47°13'50"E   | 131.10'      |
| C12         | 19°30'36"  | 230.00'  | 78.32'     | N20°54'58"E   | 77.94'       |
| C13         | 14°56'48"  | 230.00'  | 60.00'     | N3°41'16"E    | 59.83'       |
| C14         | 14°56'48"  | 230.00'  | 60.00'     | N11°15'32"W   | 59.83'       |
| C15         | 32°54'28"  | 230.00'  | 132.10'    | N35°11'11"W   | 130.29'      |
| C16         | 24°50'01"  | 330.00'  | 143.03'    | N64°03'25"W   | 141.91'      |
| C17         | 6°55'34"   | 330.00'  | 39.89'     | N79°56'12"W   | 39.87'       |
| C18         | 7°02'16"   | 330.00'  | 40.53'     | N86°55'07"W   | 40.51'       |
| C19         | 13°57'50"  | 330.00'  | 80.43'     | S82°34'50"W   | 80.23'       |
| C20         | 13°57'50"  | 270.00'  | 65.80'     | S82°34'50"W   | 65.64'       |
| C21         | 78°20'15"  | 60.00'   | 82.03'     | N69°36'23"W   | 75.79'       |
| C22         | 34°05'02"  | 60.00'   | 35.69'     | S54°10'59"W   | 35.17'       |
| C23         | 57°48'03"  | 60.00'   | 60.53'     | S8°14'26"W    | 57.99'       |
| C24         | 38°24'32"  | 60.00'   | 40.22'     | S39°51'51"E   | 39.47'       |
| C25         | 41°23'15"  | 60.00'   | 43.34'     | S79°45'45"E   | 42.40'       |
| C26         | 49°58'53"  | 60.00'   | 52.34'     | S54°33'11"W   | 50.70'       |
| C27         | 52°11'37"  | 60.00'   | 54.66'     | S33°27'56"W   | 52.79'       |
| C28         | 67°37'36"  | 60.00'   | 70.82'     | S26°26'40"E   | 66.78'       |
| C29         | 56°31'44"  | 60.00'   | 59.20'     | S88°31'20"E   | 56.83'       |
| C30         | 44°02'34"  | 60.00'   | 46.12'     | N41°11'31"E   | 44.99'       |
| C31         | 79°36'29"  | 60.00'   | 83.37'     | N20°38'01"W   | 76.82'       |
| C32         | 13°57'50"  | 330.00'  | 80.43'     | N82°34'50"E   | 80.23'       |
| C33         | 7°08'45"   | 270.00'  | 33.67'     | N79°10'18"E   | 33.65'       |
| C34         | 6°49'05"   | 270.00'  | 32.13'     | N86°09'12"E   | 32.11'       |
| C35         | 13°57'50"  | 270.00'  | 65.80'     | S83°27'20"E   | 65.64'       |
| C36         | 24°50'01"  | 270.00'  | 117.03'    | S64°03'25"E   | 116.11'      |
| C37         | 129°05'12" | 170.00'  | 383.01'    | N12°54'11"E   | 306.99'      |
| C38         | 0°44'35"   | 330.00'  | 4.28'      | S77°06'56"W   | 4.28'        |
| C39         | 13°18'37"  | 330.00'  | 76.66'     | S70°02'45"W   | 76.49'       |

OWNER:  
Paradise Meadows, LLC  
665 Simonds Road  
Williamstown, Massachusetts 01267

LAND SURVEYOR:



6300 Ridglea Place, Suite 700 Fort Worth, TX 76116  
mail@bhbinco.com • 817.338.1277 • bhbinco.com  
TBPELS Firm #44, #10011300

FINAL PLAT  
LOTS 1-82  
PARADISE MEADOWS  
(82 LOTS)  
BEING A 194.307 ACRE TRACT OF LAND SITUATED WITHIN  
W. SHADLE SURVEY, ABST. NO. 1269, T. & P. R.R. CO. SURVEY,  
ABST. NO. 1521 & M. TACKETT SURVEY, ABST. NO. 1301  
PARKER COUNTY, TEXAS  
DECEMBER 2020 SHEET 2 OF 3

STATE OF TEXAS §  
COUNTY OF PARKER §

WHEREAS, Paradise Meadows, LLC, a Delaware Limited Liability Company, being the owner of the hereon described property to wit:

BEING a tract of land situated within the W. Shadle Survey, Abstract Number 1269 and the T. & P. R.R. CO. Survey, Abstract Number 1521 and the M. Tackett Survey, Abstract Number 1301, Parker County, Texas and being a portion of a tract of land as described by deed to Paradise Meadows, LLC as recorded in Document Number 202035178, Deed Records, Parker County, Texas (D.R.P.C.T.) and being more particularly described by metes and bounds as follows: (Bearings referenced to U.S. State Plane Grid 1983 - Texas North Central Zone (4202) NAD83 as established using the AllTerra RTKNet Cooperative Network. Reference frame is NAD83(2011) Epoch 2010.0000. Distances shown are U.S. Survey feet displayed in surface values)

BEGINNING at a found 1/2-inch capped iron rod marked "PRICE SURVEYING" for the northeast corner of Lot 9, Aviara Ridge, an addition to Parker County, Texas as shown on plat recorded in Cabinet E, Slide 426, Plat Records, Parker County, Texas (P.R.P.C.T.), same being a re-entrant corner of the said Paradise Meadows tract;

THENCE with the common line between the said Paradise Meadows tract and the said Aviara Ridge, the following courses and distances:

- South 76°34'24" West, a distance of 309.13 feet to a found 1/2-inch capped iron rod marked "PRICE SURVEYING";
- South 63°23'03" West, a distance of 98.61 feet to a found 60d Nail;
- South 62°45'09" West, a distance of 1270.45 feet to a found 3-inch Steel Post;
- South 62°43'31" West, at a distance of 1299.00 feet passing a found 1/2-inch capped iron rod marked "PRICE SURVEYING" for the northwest corner of Lot 2 of the aforementioned Aviara Ridge Plat, same being the northeast corner of a remainder tract of land described by deed to Landvision Companies, LLC as recorded in Document No's 20191495 and 201915052, D.R.P.C.T., and now continuing with the common line between the aforementioned Landvision tract and the said Paradise Meadows tract for a total distance of 1661.47 feet to a found 3-inch steel post for the northwest corner of the said Landvision tract, same being the southwest corner of the said Paradise Meadows tract and being in the eastern right-of-way line of Farm to Market Road 920 (a 100 foot right-of-way);

THENCE with the common line between the said Paradise Meadows tract and the said eastern right-of-way line of said Farm to Market Road 920 the following courses and distances:

- Along a curve to the left having a central angle of 04°57'47", a radius of 3706.82 feet, an arc length of 321.10 feet and a chord which bears North 21°33'18" West, a distance of 321.00 feet to a set 5/8-inch capped iron rod marked "BHB INC" (IRS);
- North 24°02'02" West, a distance of 1050.69 feet to an IRS;

THENCE departing the said common line and over and across the said Paradise Meadows tract the following courses and distances:

- North 67°38'11" East, a distance of 299.79 feet to an IRS;
- North 71°43'48" East, a distance of 14.49 feet to an IRS;
- North 02°45'00" West, a distance of 502.08 feet to an IRS;
- South 80°50'18" West, a distance of 495.67 feet to an IRS being in the aforementioned common line

THENCE continuing with the said common line between the said Paradise Meadows tract and the said eastern right-of-way line of said Farm to Market Road 920 the following courses and distances:

- Along a curve to the right having a central angle of 11°13'03", a radius of 1096.00 feet, an arc length of 409.36 feet and a chord which bears North 08°14'33" West, a distance of 214.24 feet to an IRS;
- North 02°38'02" West, a distance of 946.24 feet to a found 5/8-inch iron rod for the northwest corner of the said Paradise Meadows tract, same being the southwest corner of a tract of land described by deed to Jerry L. Raper as recorded in Volume 1472, Page 725, D.R.P.C.T., and being in the aforementioned eastern right-of-way;

THENCE North 89°15'22" East, with the common line between the said Paradise Meadows tract and the said Raper tract, a distance of 4099.84 feet to a found 3-inch steel post for the northeast corner of the said Frysinger tract, same being the northwest corner of the remainder of a tract of land described by deed to Dennis L. Sisk as recorded in Volume 1502, Page 370, D.R.P.C.T.;

THENCE with the common line between the said Paradise Meadows tract and the said Sisk tract, the following courses and distances

- South 00°51'53" East, a distance of 1424.24 feet to found 3-inch Steel Post;
- South 81°01'49" West, a distance of 296.50 feet to a found 100d Nail;
- South 06°40'46" East, a distance of 80.08 feet to the POINT OF BEGINNING and CONTAINING 8,463,999 square feet or 194.307 acres of land more or less.

OWNER:  
Paradise Meadows, LLC  
665 Simonds Road  
Williamstown, Massachusetts 01267

LAND SURVEYOR:



6300 Ridglea Place, Suite 700 Fort Worth, TX 76116  
mail@bhbinc.com • 817.338.1277 • bhbinc.com  
TBPELS Firm #44, #10011300

NOW, THEREFORE, KNOW ALL PERSONS BY THESE PRESENTS:

THAT, Paradise Meadows, LLC, acting herein by and through its duly authorized officer, Monte Magness, does hereby adopt this plat designating the herein described property as LOTS 1-82, PARADISE MEADOWS, an addition to Parker County, Texas (the County), and does hereby dedicate to the County:

(i) easements for the purposes shown on this plat and for the mutual benefit, use and accommodation of all public utility entities, including the County, providing services to the addition created hereby and desiring to use or using the same, and also an easement and right-of-way under, across and upon all lots shown hereon for the construction, installation, maintenance, operation, inspection, removal and reconstruction of the facilities, equipment and systems of such public utility entities; and

(ii) for the use, benefit and accommodation of the County, an easement and right-of-way, under, across, and upon all lots shown hereon for any purpose related to the exercise of a governmental service or function including, but not limited to, fire protection and law enforcement, garbage collection, inspection and code enforcement, and the removal of any vehicle or obstacle that impairs emergency access. All lots and all streets shown hereon are private streets and are not dedicated for use as public streets or rights-of-way, and the public shall have no right to use any portion of such private streets. Owner acknowledges that so long as the streets and related improvements constructed on all lots shown hereon shall remain private, certain County services shall not be provided on said private streets including, but not limited to, routine law enforcement patrols, enforcement of traffic and parking regulations, and preparation of accident reports. Except for private streets and related improvements, no buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon or across the easements dedicated herein. The County and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs or other prohibited improvements or growths which may in any way endanger or interfere with their respective easements. In addition, the County shall have the right to remove and keep removed any vehicle or obstacle that impairs emergency access to its easement. The County and public utility entities shall at all times have the full right of ingress and egress to and from their respective easements without the necessity at any time of procuring permission from anyone. The use, by the County and public utility entities, of their respective easements shall not unreasonably interfere with the rights of property owners and the homeowner's association (the "Association ") in and to all lots shown hereon as set forth in the "Declaration of Covenants, Restrictions, and Easements for "Paradise Meadows", dated \_\_\_\_\_ recorded in County Clerk Document Number: \_\_\_\_\_ of the Land Records of Parker County, Texas.

THAT THE ASSOCIATION agrees to release, indemnify, defend and hold harmless the County and any governmental entity or public utility entity that owns public improvements within the addition created by this plat (collectively, the "Indemnities") from and against any claims for damages to the private streets, restricted access gates and entrances, and related appurtenances (collectively, the "Private Streets") caused by the reasonable use of the Private Streets by the Indemnities. This paragraph 2 does not apply to damages to the Private Streets caused by the design, construction or maintenance, or by any public improvements owned by any of the Indemnities.

THAT THE ASSOCIATION agrees to release, indemnify, defend, and hold harmless the Indemnities from and against any claims for damages to property and injury to persons (including death) that arise out of the use of the Private Streets by the Indemnities and that are caused by the failure of the Association to design, construct or maintain the Private Streets in accordance with County standards. The indemnification contained in this paragraph 3 shall apply regardless of whether a contributing factor to such damages or injury was the negligent acts or omissions of the indemnities or their respective officers, employees or agents.

THAT THE OWNER OF EACH LOT SHOWN ON THIS PLAT agrees to release the Indemnities from claims for damages to property and injury to persons (including death) that arise out of the use of the Private Streets by the Indemnities and that are caused by the failure of the Association to design, construct or maintain the Private Streets in accordance with County standards.

THAT THE OBLIGATIONS of the Association and lot owners set forth in paragraphs 2, 3 and 4 above shall immediately and automatically terminate when the streets and other rights-of-way have been dedicated to and accepted by the County should such action occur at the same time in the future.

THAT if all lots in the future becomes a public street as provided in the Declaration, Owner dedicates to the County a sidewalk easement on the portions of all lots upon which a sidewalk is installed connecting the sidewalk on all lots into public sidewalks on any adjacent and/or intersecting roadway, together with the area: (a) lying between such sidewalks and the lot line of all lots, and (b) the area lying within 1 foot of the other side of the sidewalks.

This plat approved subject to all platting ordinances, rules, regulations and resolutions of Parker County, Texas.

WITNESS, my hand, this the \_\_\_\_\_ day of \_\_\_\_\_, 2020.

BY:

Paradise Meadows, LLC

Monte Magness,  
Authorized Agent

Printed Name and Title

STATE OF TEXAS §

COUNTY OF PARKER §

Before me, the undersigned, a Notary Public for the State of Texas, appeared Monte Magness, known to be the person whose name is subscribed hereto.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the \_\_\_\_\_ day of \_\_\_\_\_, 2020.

Notary Public

SURVEYOR'S CERTIFICATATION

I, John Margotta, do hereby declare that I prepared this plat from an actual on the ground survey of the land, and that the corner monuments shown hereon were properly placed under my personal supervision in accordance with the platting rules and regulations of Parker County, Texas.

John G. Margotta  
State of Texas Registered Professional Land Surveyor  
No. 5956  
Date: December 16, 2020

STATE OF TEXAS §

COUNTY OF TARRANT §

Before me, the undersigned, a Notary Public for the State of Texas, appeared John Margotta, known to be the person whose name is subscribed hereto.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 23rd day of July, 2020.

Notary Public

FINAL PLAT

LOTS 1-82

PARADISE MEADOWS

(82 LOTS)

BEING A 194.307 ACRE TRACT OF LAND SITUATED WITHIN

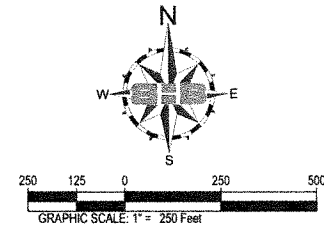
W. SHADLE SURVEY, ABST. NO. 1269, T. & P. R.R. CO. SURVEY,

ABST. NO. 1521 & M. TACKETT SURVEY, ABST. NO. 1301

PARKER COUNTY, TEXAS

DECEMBER 2020

SHEET 3 OF 3



LEGEND

DRAINAGE AREA MAP

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
|     |             |      |



|                              |                |
|------------------------------|----------------|
| PROJECT NUMBER: 2020.172.000 |                |
| DATE: 1/10/2021              | DRAWN BY: MJD  |
| DESIGN BY: CW                | CHECKED BY: CW |



| Weighted "C" Values Development Conditions |            |                        |      |
|--|------------|------------------------|------|
| Drainage Area                              | Total Area | Land Use               | 'C'  |
| A1   | 53.46      | Agricultural           | 0.30 |
| A2   | 1.92       | Single Family +2 Acres | 0.35 |
| A3   | 9.16       | Single Family +2 Acres | 0.35 |
| A4   | 58.83      | Single Family +2 Acres | 0.35 |
| B1   | 18.89      | Single Family +2 Acres | 0.35 |

| Culvert Summary Table |                            |            |          |           |
|-----------------------|----------------------------|------------|----------|-----------|
| Design Point #        | Contributing Drainage Area | Q100 (cfs) | CMP SIZE | # BARRELS |
| 1                     | A2                         | 5.35       | 18"      | 1         |
| 2                     | A3                         | 25.54      | 24"      | 2         |
| 3                     | A1-A4                      | 233.54     | 42"      | 3         |
| 4                     | B1                         | 52.68      | 24"      | 3         |

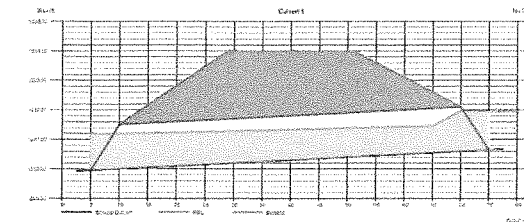
| DEVELOPMENT RATIONAL HYDROLOGIC CALCULATIONS |       |        |           |          |                                  |                       |       |        |       |                                  |           |           |       |           |                                  |           |       |           |           |           |       |           |           |           |
|--|-------|--------|-----------|----------|----------------------------------|-----------------------|-------|--------|-------|----------------------------------|-----------|-----------|-------|-----------|----------------------------------|-----------|-------|-----------|-----------|-----------|-------|-----------|-----------|-----------|
| 1 yr.  |       |        |           |          | 10 yr.                           |                       |       |        |       | 25 yr                            |           |           |       |           | 100 yr                           |           |       |           |           |           |       |           |           |           |
| rainfall intensity calculations:             |       |        |           |          | rainfall intensity calculations: |                       |       |        |       | rainfall intensity calculations: |           |           |       |           | rainfall intensity calculations: |           |       |           |           |           |       |           |           |           |
| I=b/(tc+d)^e                                 |       |        |           |          | I=b/(tc+d)^e                     |                       |       |        |       | I=b/(tc+d)^e                     |           |           |       |           | I=b/(tc+d)^e                     |           |       |           |           |           |       |           |           |           |
| b= 42.333                                    |       |        |           |          | b= 77.954                        |                       |       |        |       | b= 92.557                        |           |           |       |           | b= 120.205                       |           |       |           |           |           |       |           |           |           |
| d= 8   |       |        |           |          | d= 12                            |                       |       |        |       | d= 13                            |           |           |       |           | d= 15                            |           |       |           |           |           |       |           |           |           |
| e= 0.81993                                   |       |        |           |          | e= 0.80657                       |                       |       |        |       | e= 0.80148                       |           |           |       |           | e= 0.79789                       |           |       |           |           |           |       |           |           |           |
|  |       |        |           |          |                                  | Time of Concentration |       |        |       |                                  |           |           |       |           |                                  |           |       |           |           |           |       |           |           |           |
| Incremental Area                             | Total | Runoff | Indre. CA | Total CA | Upstream                         | Flow                  | Total | Design | Storm | Indre.                           | Total     | Design    | Storm | Indre.    | Total                            | Design    | Storm | Indre.    | Total     | Design    | Storm | Indre.    | Total     |           |
| Area No.                                     | Acres | Area   |           |          | C                                | min                   | min   | min    | Storm | Intensity                        | Discharge | Discharge | Storm | Intensity | Discharge                        | Discharge | Storm | Intensity | Discharge | Discharge | Storm | Intensity | Discharge | Discharge |
| 1  | 2     | 3      | 4         | 5        | 6                                | 7                     | 8     | 9      | 10    | 11                               | 12        | 13        | 14    | 15        | 16                               | 17        | 18    | 19        | 20        | 21        | 18    | 19        | 20        | 21        |
|  |       |        |           |          |                                  |                       |       |        |       |                                  |           |           |       |           |                                  |           |       |           |           |           |       |           |           |           |
| A1   | 53.46 | 53.46  | 0.30      | 16.04    | 16.04                            | 0.00                  | 0.00  | 15.00  | 1     | 3.24                             | 51.92     | 51.92     | 10    | 5.46      | 87.60                            | 87.60     | 25    | 6.41      | 102.73    | 102.73    | 100   | 7.97      | 127.79    | 127.79    |
| A2   | 1.92  | 55.38  | 0.35      | 0.67     | 16.71                            | 0.00                  | 0.00  | 15.00  | 1     | 3.24                             | 2.18      | 54.09     | 10    | 5.46      | 3.67                             | 91.27     | 25    | 6.41      | 4.30      | 107.03    | 100   | 7.97      | 5.35      | 133.14    |
| A3   | 9.16  | 64.54  | 0.35      | 3.21     | 19.92                            | 0.00                  | 0.00  | 15.00  | 1     | 3.24                             | 10.38     | 64.47     | 10    | 5.46      | 17.51                            | 108.78    | 25    | 6.41      | 20.54     | 127.57    | 100   | 7.97      | 25.54     | 158.69    |
| A4   | 58.83 | 123.37 | 0.35      | 20.59    | 40.51                            | 0.00                  | 0.00  | 30.00  | 1     | 2.14                             | 44.16     | 86.87     | 10    | 3.82      | 78.75                            | 154.92    | 25    | 4.54      | 93.52     | 183.97    | 100   | 5.77      | 118.72    | 233.54    |
|  |       |        |           |          |                                  |                       |       |        |       |                                  |           |           |       |           |                                  |           |       |           |           |           |       |           |           |           |
| B1   | 18.89 | 18.89  | 0.35      | 6.61     | 6.61                             | 0.00                  | 0.00  | 15.00  | 1     | 3.24                             | 21.40     | 21.40     | 10    | 5.46      | 36.11                            | 36.11     | 25    | 6.41      | 42.35     | 42.35     | 100   | 7.97      | 52.68     | 52.68     |

### Culvert Report

Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Dec 10 2020

#### Culvert 1

|                     |                                  |                     |                 |
|---------------------|----------------------------------|---------------------|-----------------|
| Invert Elev Dn (ft) | = 1230.00                        | Calculations        |                 |
| Pipe Length (ft)    | = 60.00                          | Qmin (cfs)          | = 5.35          |
| Slope (%)           | = 1.00                           | Qmax (cfs)          | = 5.35          |
| Invert Elev Up (ft) | = 1230.60                        | Tailwater Elev (ft) | = (dc+D)/2      |
| Rise (in)           | = 18.0                           |                     |                 |
| Shape               | = Circular                       | Highlighted         |                 |
| Span (in)           | = 18.0                           | Qtotal (cfs)        | = 5.35          |
| No. Barrels         | = 1                              | Qpipe (cfs)         | = 5.35          |
| n-Value             | = 0.022                          | Qovertop (cfs)      | = 0.00          |
| Culvert Type        | = Circular Corrugate Metal Pipe  | Veloc Dn (ft/s)     | = 3.54          |
| Culvert Entrance    | = Mitered to slope (C)           | HGL Dn (ft)         | = 4.90          |
| Coeff. K,M,c,Y,k    | = 0.021, 1.33, 0.0463, 0.75, 0.7 | HGL Up (ft)         | = 1231.20       |
|                     |                                  | Hw Elev (ft)        | = 1231.98       |
|                     |                                  | Hw/D (ft)           | = 0.92          |
| Embankment          |                                  | Flow Regime         | = Inlet Control |
| Top Elevation (ft)  | = 1234.00                        |                     |                 |
| Top Width (ft)      | = 22.00                          |                     |                 |
| Crest Width (ft)    | = 50.00                          |                     |                 |

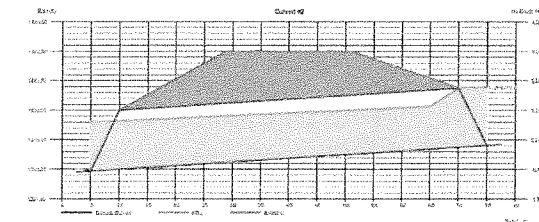


### Culvert Report

Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Dec 10 2020

#### Culvert #2

|                     |                                  |                     |                 |
|---------------------|----------------------------------|---------------------|-----------------|
| Invert Elev Dn (ft) | = 1228.00                        | Calculations        |                 |
| Pipe Length (ft)    | = 60.00                          | Qmin (cfs)          | = 25.54         |
| Slope (%)           | = 1.25                           | Qmax (cfs)          | = 25.54         |
| Invert Elev Up (ft) | = 1228.75                        | Tailwater Elev (ft) | = (dc+D)/2      |
| Rise (in)           | = 24.0                           |                     |                 |
| Shape               | = Circular                       | Highlighted         |                 |
| Span (in)           | = 24.0                           | Qtotal (cfs)        | = 25.54         |
| No. Barrels         | = 2                              | Qpipe (cfs)         | = 25.54         |
| n-Value             | = 0.022                          | Qovertop (cfs)      | = 0.00          |
| Culvert Type        | = Circular Corrugate Metal Pipe  | Veloc Dn (ft/s)     | = 4.63          |
| Culvert Entrance    | = Mitered to slope (C)           | Veloc Up (ft/s)     | = 5.30          |
| Coeff. K,M,c,Y,k    | = 0.021, 1.33, 0.0463, 0.75, 0.7 | HGL Dn (ft)         | = 1229.64       |
|                     |                                  | HGL Up (ft)         | = 1230.18       |
| Embankment          |                                  | Hw Elev (ft)        | = 1230.78       |
| Top Elevation (ft)  | = 1232.00                        | Hw/D (ft)           | = 1.02          |
| Top Width (ft)      | = 22.00                          | Flow Regime         | = Inlet Control |
| Crest Width (ft)    | = 50.00                          |                     |                 |

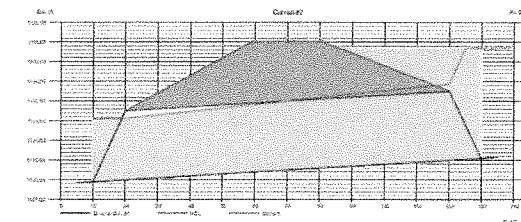


### Culvert Report

Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Dec 10 2020

#### Culvert #3

|                     |                                  |                     |                 |
|---------------------|----------------------------------|---------------------|-----------------|
| Invert Elev Dn (ft) | = 1188.00                        | Calculations        |                 |
| Pipe Length (ft)    | = 100.00                         | Qmin (cfs)          | = 233.54        |
| Slope (%)           | = 1.00                           | Qmax (cfs)          | = 233.54        |
| Invert Elev Up (ft) | = 1189.00                        | Tailwater Elev (ft) | = (dc+D)/2      |
| Rise (in)           | = 42.0                           |                     |                 |
| Shape               | = Circular                       | Highlighted         |                 |
| Span (in)           | = 42.0                           | Qtotal (cfs)        | = 233.54        |
| No. Barrels         | = 3                              | Qpipe (cfs)         | = 233.54        |
| n-Value             | = 0.022                          | Qovertop (cfs)      | = 0.00          |
| Culvert Type        | = Circular Corrugate Metal Pipe  | Veloc Dn (ft/s)     | = 8.58          |
| Culvert Entrance    | = Mitered to slope (C)           | Veloc Up (ft/s)     | = 8.09          |
| Coeff. K,M,c,Y,k    | = 0.021, 1.33, 0.0463, 0.75, 0.7 | HGL Dn (ft)         | = 1191.13       |
|                     |                                  | HGL Up (ft)         | = 1192.87       |
| Embankment          |                                  | Hw Elev (ft)        | = 1194.88       |
| Top Elevation (ft)  | = 1195.00                        | Hw/D (ft)           | = 1.62          |
| Top Width (ft)      | = 22.00                          | Flow Regime         | = Inlet Control |
| Crest Width (ft)    | = 50.00                          |                     |                 |

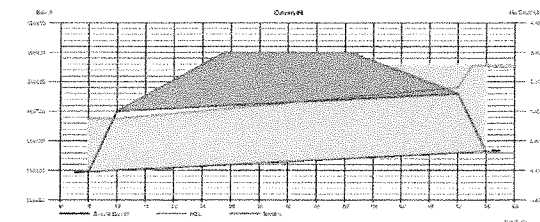


### Culvert Report

Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Dec 10 2020

#### Culvert #4

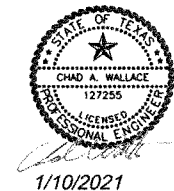
|                     |                                  |                     |                 |
|---------------------|----------------------------------|---------------------|-----------------|
| Invert Elev Dn (ft) | = 1195.00                        | Calculations        |                 |
| Pipe Length (ft)    | = 60.00                          | Qmin (cfs)          | = 52.68         |
| Slope (%)           | = 1.00                           | Qmax (cfs)          | = 52.68         |
| Invert Elev Up (ft) | = 1196.60                        | Tailwater Elev (ft) | = (dc+D)/2      |
| Rise (in)           | = 24.0                           |                     |                 |
| Shape               | = Circular                       | Highlighted         |                 |
| Span (in)           | = 24.0                           | Qtotal (cfs)        | = 52.68         |
| No. Barrels         | = 3                              | Qpipe (cfs)         | = 52.68         |
| n-Value             | = 0.022                          | Qovertop (cfs)      | = 0.00          |
| Culvert Type        | = Circular Corrugate Metal Pipe  | Veloc Dn (ft/s)     | = 6.01          |
| Culvert Entrance    | = Mitered to slope (C)           | Veloc Up (ft/s)     | = 5.59          |
| Coeff. K,M,c,Y,k    | = 0.021, 1.33, 0.0463, 0.75, 0.7 | HGL Dn (ft)         | = 1196.75       |
|                     |                                  | HGL Up (ft)         | = 1197.82       |
| Embankment          |                                  | Hw Elev (ft)        | = 1198.56       |
| Top Elevation (ft)  | = 1199.00                        | Hw/D (ft)           | = 1.48          |
| Top Width (ft)      | = 22.00                          | Flow Regime         | = Inlet Control |
| Crest Width (ft)    | = 50.00                          |                     |                 |



## DRAINAGE CALCULATIONS

NO. DESCRIPTION DATE

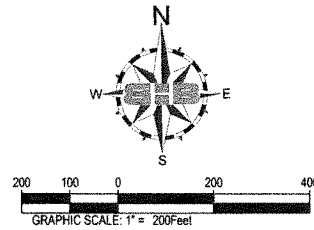
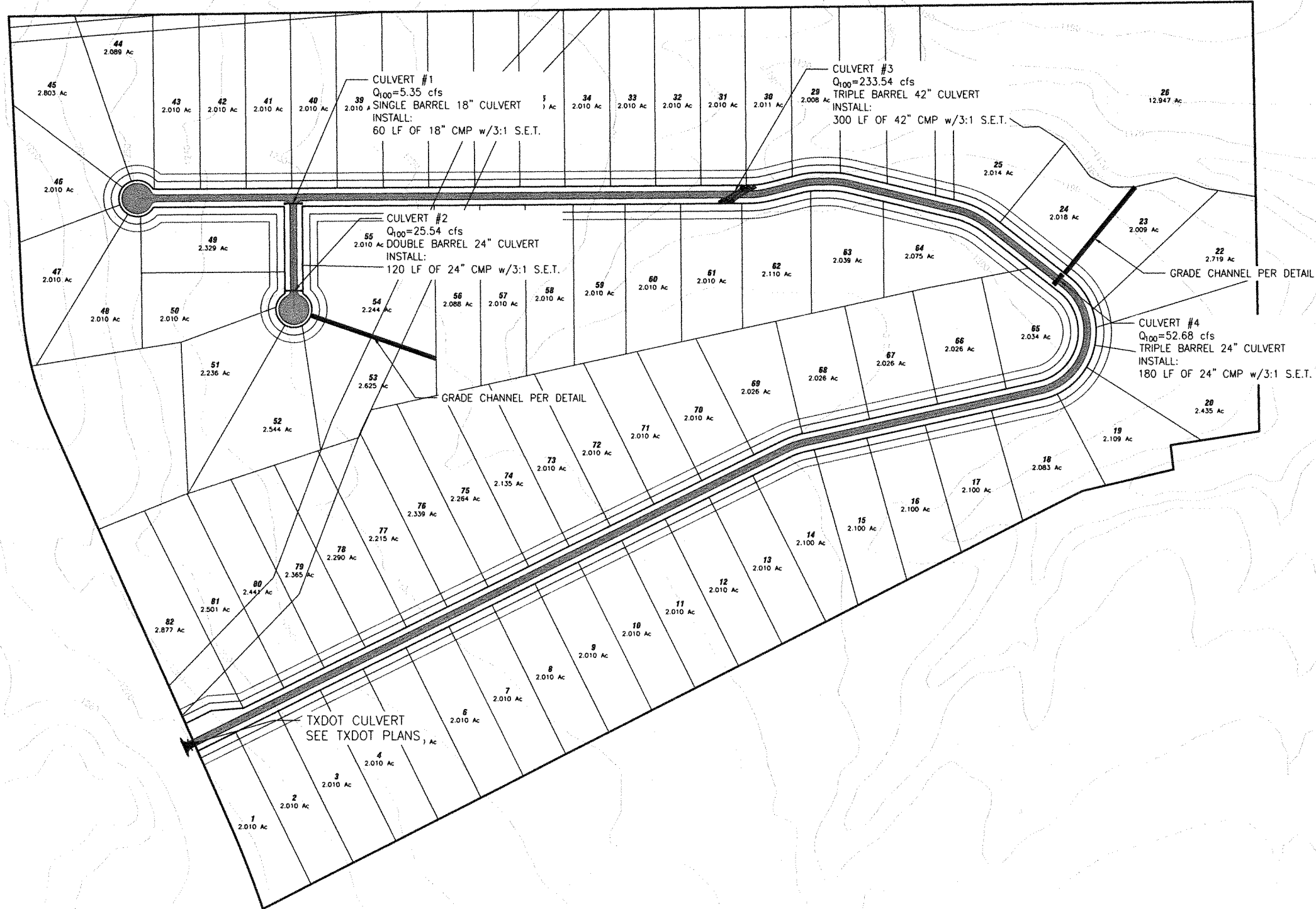
NATIONAL LAND PARTNERS  
PARADISE MEADOWS  
A RESIDENTIAL DEVELOPMENT  
PARKER COUNTY, TEXAS



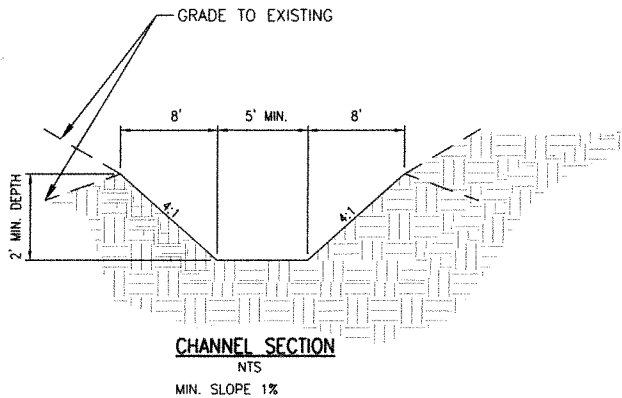
PROJECT NUMBER: 2020.172.000  
DATE: 1/10/2021 DRAWN BY: MJD  
DESIGN BY: CW CHECKED BY: CW

**B=B**  
BAIRD, HAMPTON & BROWN  
engineering and surveying  
6300 Ridgeview Place, Suite 700 Fort Worth, TX 76116  
mb@bhbnc.com • 817.338.1277 • bhbnc.com  
TBPES Firm #44 • TBPES FIRM #1001300

2021 3:14PM E:\2020 000 000\2020 172 000 - Paradise Meadows\01 BIM\02 AutoCAD\03 Civil\172CULVERT PLAN.dwg CULVERT PLAN



- CULVERT NOTES:
1. ALL CULVERTS SHALL BE INSTALLED IN ACCORDANCE WITH "PARKER COUNTY SUBDIVISION REGULATIONS AND CONSTRUCTION STANDARDS."
  2. ALL CULVERTS SHALL HAVE A MINIMUM 2 FEET OF COVER.



**BAIRD, HAMPTON & BROWN**  
engineering and surveying

6300 Ridge Plaza, Suite 700, Fort Worth, TX 76116  
mhampton@bahb.com • 817.338.1277 • bhba.com  
TSP# Firm #44 • TSP#S Firm #1001300

NATIONAL LAND PARTNERS

**PARADISE MEADOWS**  
A RESIDENTIAL DEVELOPMENT

PARKER COUNTY, TEXAS

CULVERT PLAN

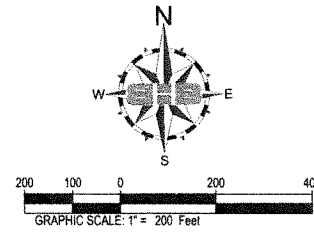
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|     |             |      |
|     |             |      |
|     |             |      |

CHAD A. WALLACE  
127255  
1/10/2021

PROJECT NUMBER: 2020 172 000  
DATE: 1/10/2021  
DESIGN BY: CW  
DRAWN BY: MJD  
CHECKED BY: CW

SHEET  
3

2021 3:14PM E:\2020 000 000\2020 172.000 - Paradise Meadows\01 BIM\02 AutoCAD\03 Civil\17 SITE PLAN.dwg SITE PLAN



ROADWAY NOTES:

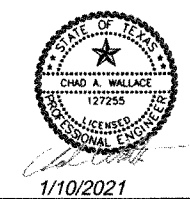
1. ALL ROADWAY CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH "PARKER COUNTY SUBDIVISION REGULATIONS AND CONSTRUCTION STANDARDS."

OVERALL ROAD PLAN

NATIONAL LAND PARTNERS

PARADISE MEADOWS  
A RESIDENTIAL DEVELOPMENT

PARKER COUNTY, TEXAS



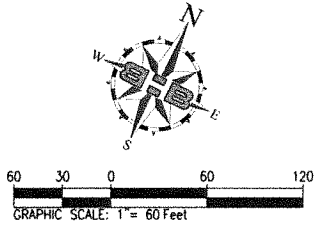
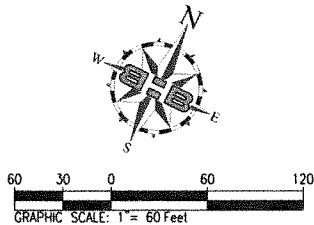
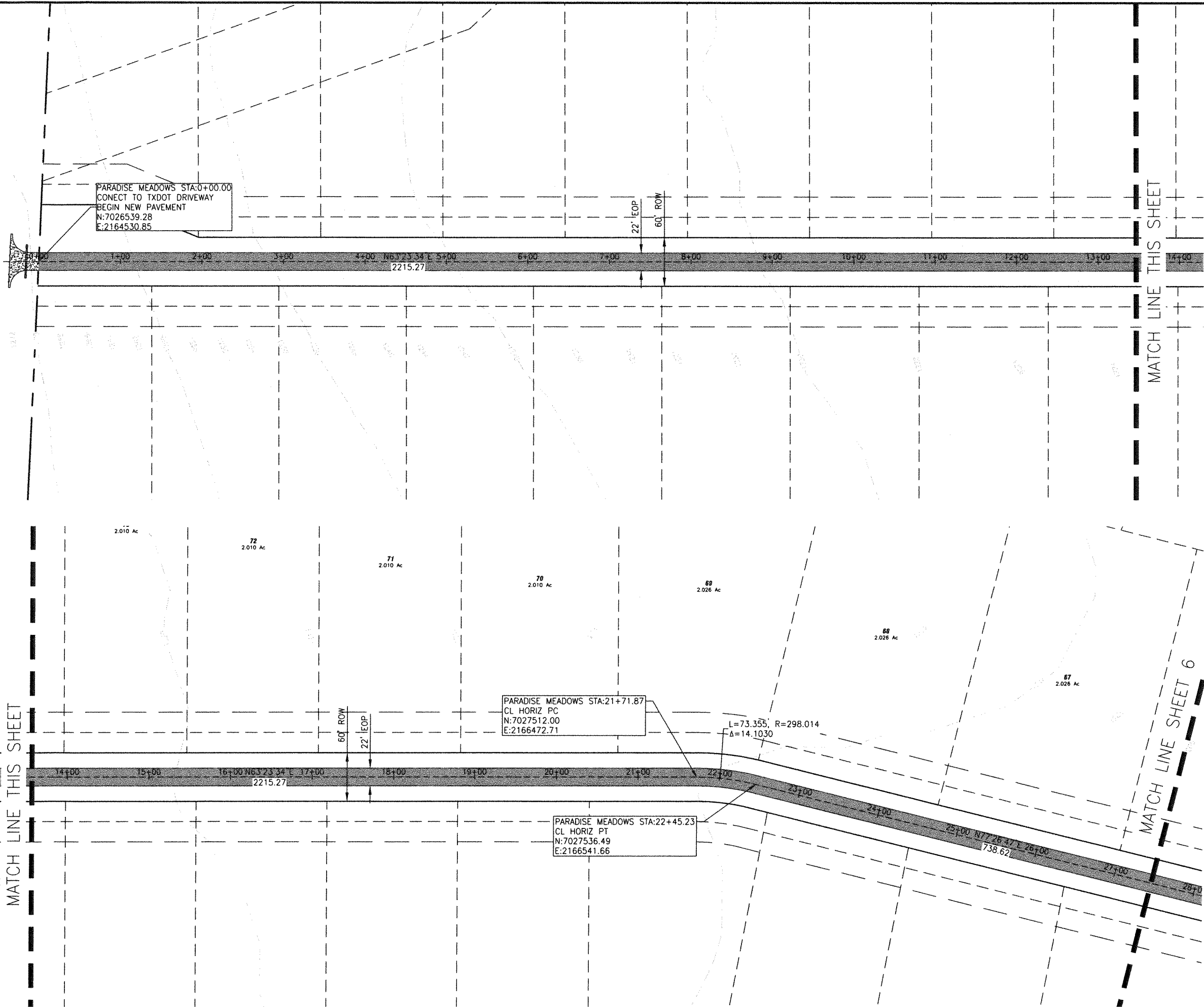
PROJECT NUMBER: 2020.172.000  
DATE: 1/10/2021  
DESIGN BY: CW  
DRAWN BY: MJD  
CHECKED BY: CW

**BHB**  
BAIRD, HAMPTON & BROWN  
engineering and surveying

6300 Ridgely Place, Suite 700 Fort Worth, TX 76116  
ms@bhbnc.com • 817.336.1277 • bhbnc.com  
TBP# Firm #44 • TBP# Firm #1001300



2021 3:28PM E:\2020.000\2020.172.000 - Paradise Meadows\01 BIM\03 AutoCAD\03 Civil\172ROADWAY PLAN.dwg STREET A



**BHB**  
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TSP# E Firm #44 • TSP#S Firm #10011300

NATIONAL LAND PARTNERS  
**PARADISE MEADOWS**  
A RESIDENTIAL DEVELOPMENT  
PARKER COUNTY, TEXAS

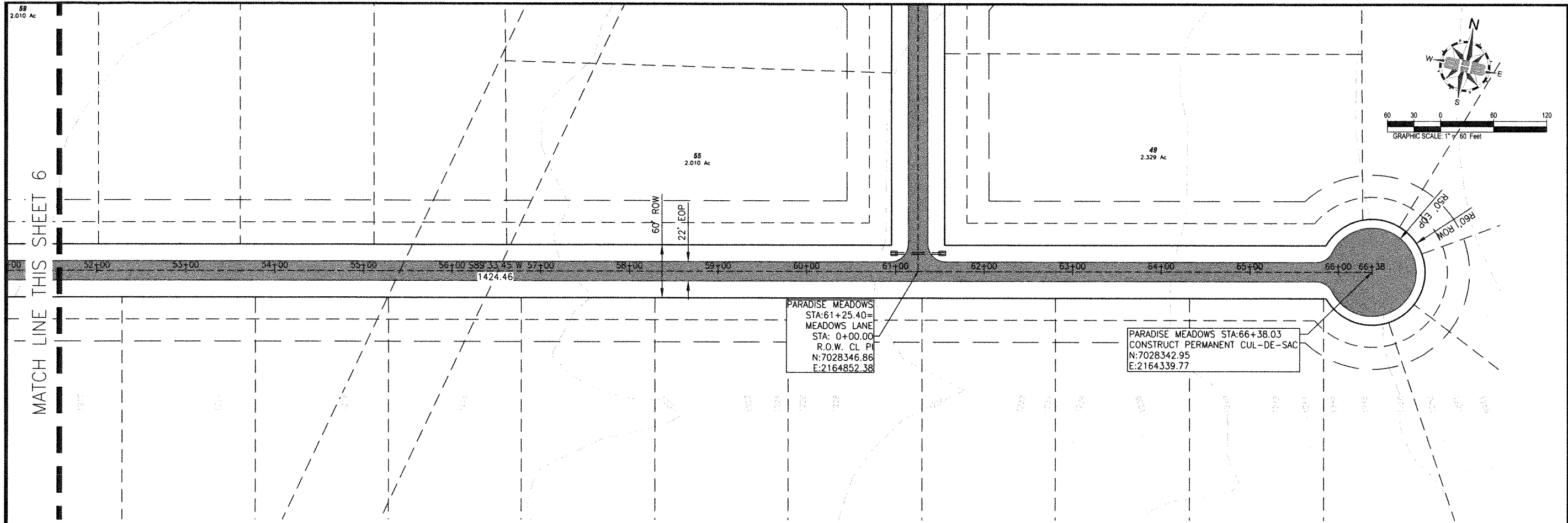
| ROADWAY LAYOUT 1 OF 3 |             | DATE |
|-----------------------|-------------|------|
| NO.                   | DESCRIPTION |      |
|                       |             |      |
|                       |             |      |
|                       |             |      |

STATE OF TEXAS  
CHAD A. WALLACE  
127255  
LICENSED PROFESSIONAL ENGINEER  
1/10/2021

PROJECT NUMBER: 2020.172.000  
DATE: 1/10/2021 DRAWN BY: MJD  
DESIGN BY: CW CHECKED BY: CW  
SHEET  
5



021 3:14PM E:\2020\000\000\02020\172\000 - Paradise Meadows01 BIM02 AutoCAD\08 Civil\172ROADWAY PLAN.dwg STREET A (3)



MATCH LINE THIS SHEET 6

PARADISE MEADOWS  
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MEADOWS LANE  
STA: 0+00.00  
R.O.W. CL PI  
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E:2164852.38

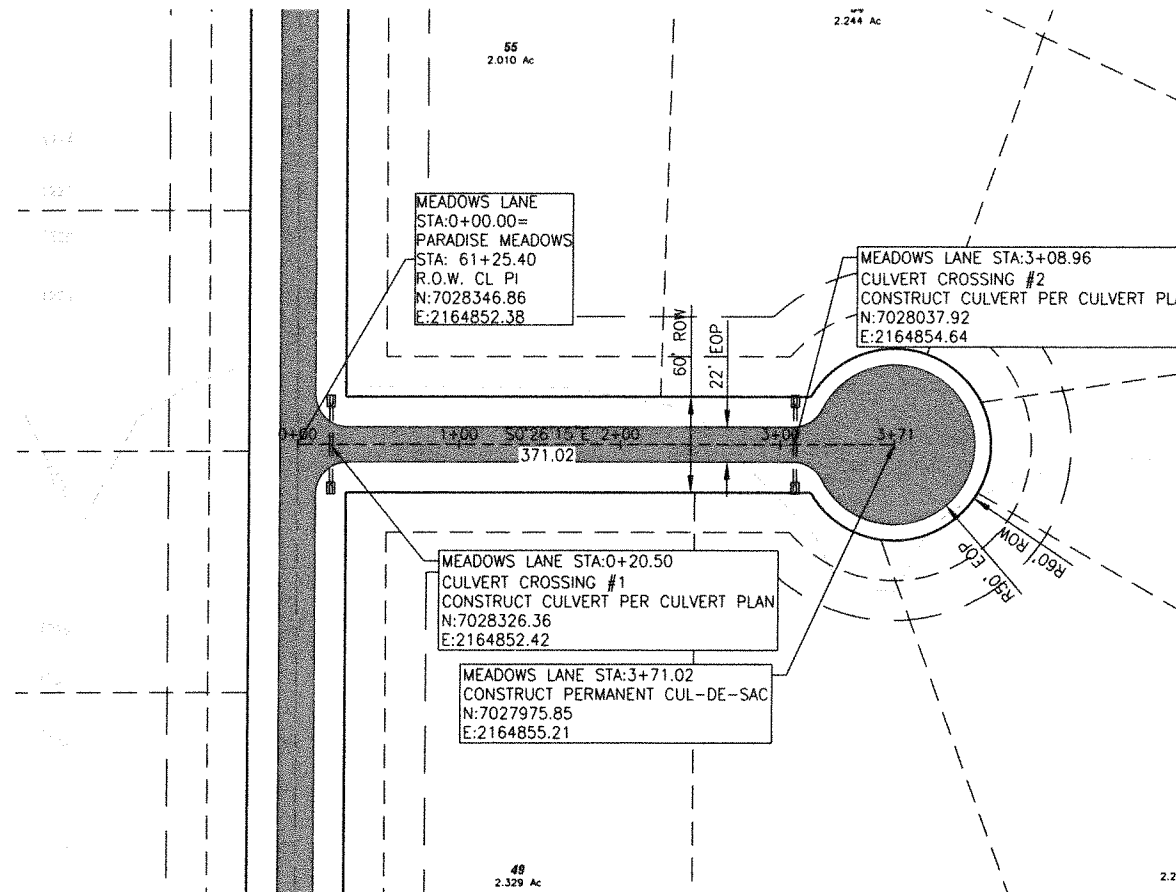
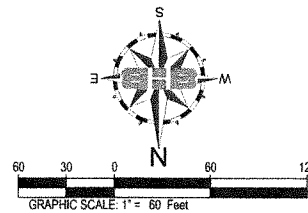
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CONSTRUCT PERMANENT CUL-DE-SAC  
N:7028342.95  
E:2164339.77

#### CONSTRUCTION NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO PARKER COUNTY STANDARD SPECIFICATIONS AND/OR THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WHICHEVER IS MORE RESTRICTIVE.
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE LOCATION.
3. CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD. SOIL/ SEDIMENT THAT IS ERODED FROM THE IMMEDIATE SITE SHALL BE REMOVED BY THE CONTRACTOR.
4. CONTRACTOR SHALL PROTECT ALL EXISTING TREES. PRIOR TO REMOVAL OF ANY TREE, CONTRACTOR SHALL OBTAIN PERMISSION FROM THE OWNER.
5. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DEMOLITION AND RECONSTRUCTION WITH LOCAL SERVICE PROVIDER AS NECESSARY.
6. CONTRACTOR SHALL COORDINATE ALL NATURAL GAS DEMOLITION AND RECONSTRUCTION WITH LOCAL SERVICE PROVIDER AS NECESSARY.

#### GENERAL NOTES

1. ALL LINES, GRADES, CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S AGENT.
3. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF WALL.
4. EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MUNICIPAL AND FRANCHISE UTILITY COMPANIES AND LOCATING ALL UTILITIES IN THE FIELD.
5. ALL LOT LINES BASED ON BEST AVAILABLE DATA. THE CONTRACTOR SHALL NOTIFY ENGINEER IN THE EVENT OF ANY DISCREPANCY THAT WOULD ALTER THE GRADING FLOW AS DESIGNED, OR ANY FEATURE THAT IMPACTS THE ABILITY TO CONSTRUCT THE DESIGN AS SHOWN ON THIS PLAN. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY PARKER COUNTY.

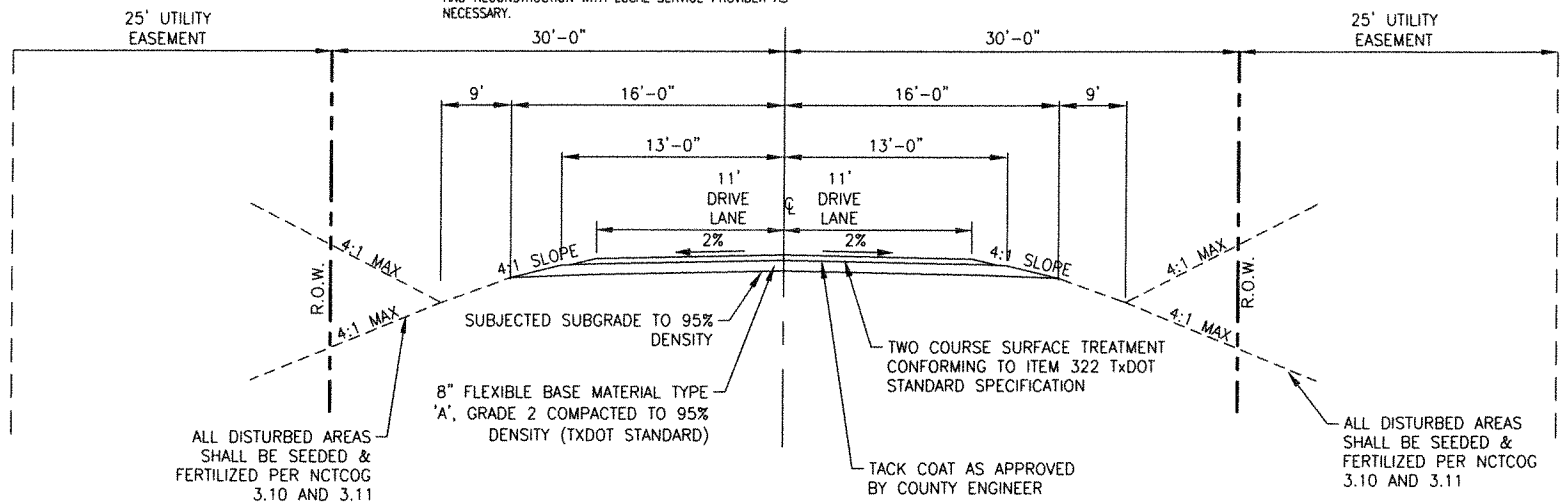


MEADOWS LANE  
STA:0+00.00=  
PARADISE MEADOWS  
STA: 61+25.40  
R.O.W. CL PI  
N:7028346.86  
E:2164852.38

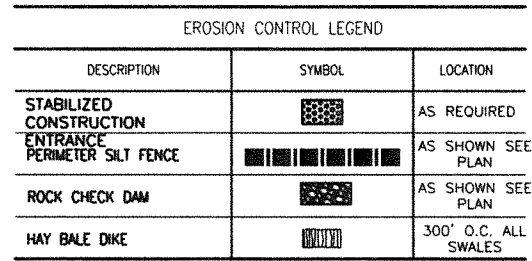
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CONSTRUCT CULVERT PER CULVERT PLAN  
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MEADOWS LANE STA:0+20.50  
CULVERT CROSSING #1  
CONSTRUCT CULVERT PER CULVERT PLAN  
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E:2164852.42

MEADOWS LANE STA:3+71.02  
CONSTRUCT PERMANENT CUL-DE-SAC  
N:7027975.85  
E:2164855.21



PROPOSED TYPICAL SECTION - 60' R.O.W.



| EROSION CONTROL CONSTRUCTION RESPONSIBILITIES         |                             |                               |
|---|-----------------------------|-------------------------------|
| EROSION CONTROL MEASURE                               | INSTALLATION RESPONSIBILITY | MAINTENANCE RESPONSIBILITY    |
| STABILIZED CONSTRUCTION ENTRANCE PERIMETER SILT FENCE | EARTHWORK CONTRACTOR        | EARTHWORK & PAVING CONTRACTOR |
| ROCK CHECK DAM  | EARTHWORK CONTRACTOR        | ALL CONTRACTORS               |
| HAY BALE DIKE   | EARTHWORK CONTRACTOR        | EARTHWORK CONTRACTOR          |

## EROSION CONTROL NOTES

EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.

ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER.

IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.

CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.

SEDIMENT THAT IS ERODED FROM THE SITE AND DEPOSITED INTO ADJACENT PROPERTIES OR PUBLIC RIGHT-OF-WAY SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN AN APPROPRIATE MANNER.

AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE SEEDED WITH AN APPROPRIATE ANNUAL GRASS TO PROVIDE PERMANENT VEGETATIVE STABILIZATION

## EROSION CONTROL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATION FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE WISE COUNTY ENGINEER.
3. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
4. IF OFF-SITE BORROW OR SPOILS SITES ARE USED IN CONJUNCTION WITH THE PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN SWPPP.
5. CONTRACTOR TO CONSTRUCT A 6" DEEP ROCK ENTRANCE, EXTENDING 50' INTO CONSTRUCTION SITE WITH A MINIMUM WIDE OF 30'. LOCATION OF ENTRANCE TO BE DETERMINED BY THE CONTRACTOR.
6. DISTURBED AREA IS 11.0 ACRES

## B.M.P. MAINTENANCE SCHEDULE

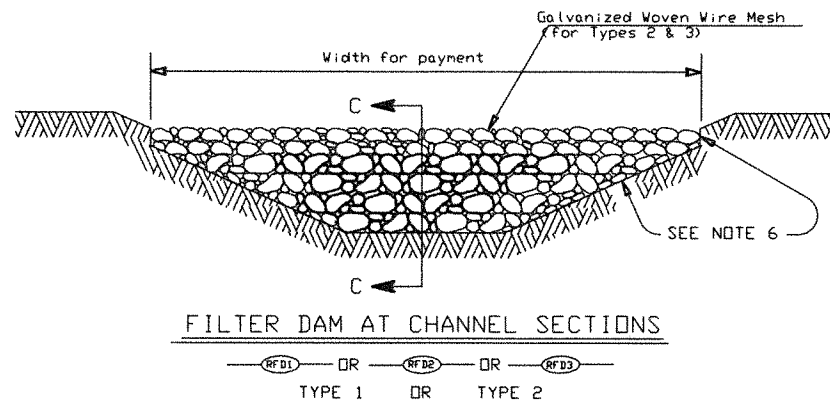
### TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO ENSURE THAT THE FACILITY IS FUNCTIONING PROPERLY. AGGREGATE PAD SHALL BE WASHED DOWN OR REPLACED WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN THE STONES OR MUD IS BEING TRACKED ONTO THE PUBLIC ROADWAY. RUNOFF FROM WASHDOWN OPERATION SHALL BE FILTERED THROUGH ANOTHER B.M.P. PRIOR TO DRAINING OFF-SITE.

### SILT FENCE:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-THIRD THE HEIGHT OF THE FENCE ABOVE GRADE. FENCE SHALL BE INSPECTED FOR GAPS AT BASE. INSPECT SUPPORTING POSTS AND FILTER FABRIC. REPLACE IF REQUIRED.

REFER TO THE NCTCOG AND ISWM EROSION AND SEDIMENT CONTROL MANUALS AVAILABLE ONLINE FOR ADDITIONAL REQUIREMENTS.



### GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND/OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.

2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR "ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL".

3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE SW3P PLANS.

4. SIDE SLOPES SHOULD BE 2:1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDESLOPES OF 6:1 OR FLATTER.

5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.

6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO EXISTING GROUND.

7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.

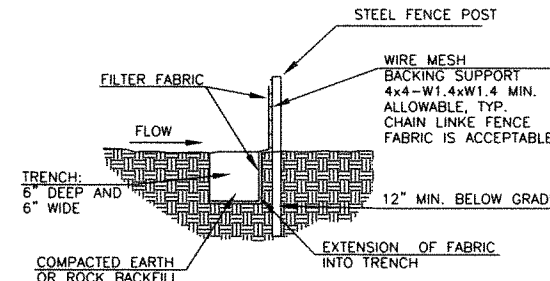
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT & SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.

9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3/4" DIA. REBAR STAKES.

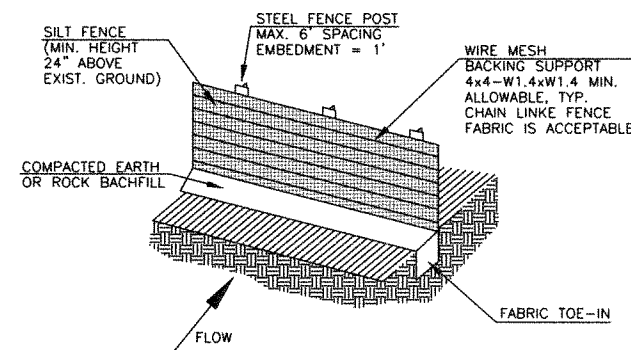
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).

11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

12. ALL MATERIAL INCORPORATED IN THE CONSTRUCTION SHALL BE NEW.

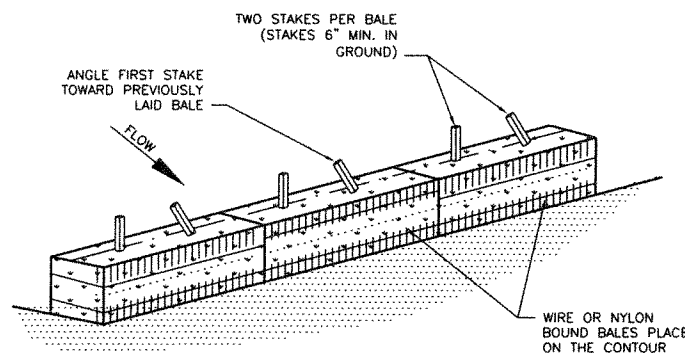


### CROSS SECTION

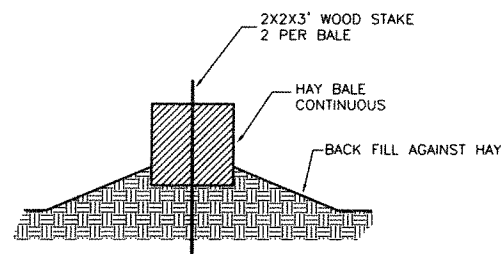


### ISOMETRIC PLAN VIEW

## SILT FENCE



### ANCHORING DETAIL



### HAY BALE DIKE

N.T.S.

### HAY BALE DIKE NOTES:

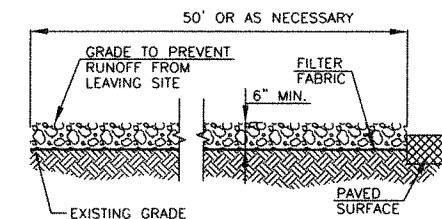
1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR INCHES.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
3. INSPECTION SHALL BE MADE WEEKLY AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
4. WHEN SILT REACHES A DEPTH OF 6 INCHES, IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
5. AFTER THE DEVELOPMENT OF THE SITE IS COMPLETELY STABILIZED, THE BALES SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SPOIL DISPOSAL SITE.

### SILT FENCE GENERAL NOTES:

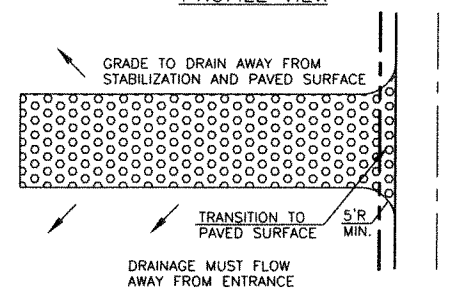
1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS NOT TO CONTRIBUTE TO ADDITIONAL SILTATION.

### STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
2. THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.
3. THE WIDTH SHALL BE NO LESS THAN THE WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
6. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.



### PROFILE VIEW



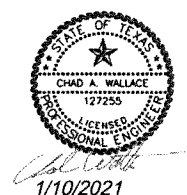
### PLAN VIEW

## STABILIZED CONSTRUCTION ENTRANCE

NATIONAL LAND PARTNERS  
PARADISE MEADOWS  
A RESIDENTIAL DEVELOPMENT  
PARKER COUNTY, TEXAS

EROSION CONTROL DETAILS

NO. DESCRIPTION DATE



PROJECT NUMBER: 2020.172.000  
DATE: 1/10/2021  
DESIGN BY: CW  
DRAWN BY: MJD  
CHECKED BY: CW

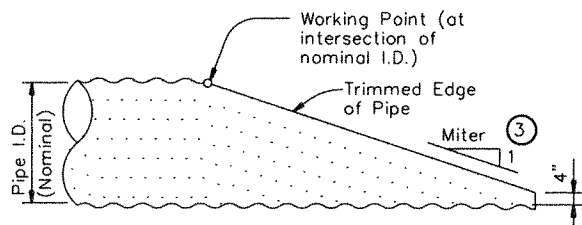
SHEET  
9







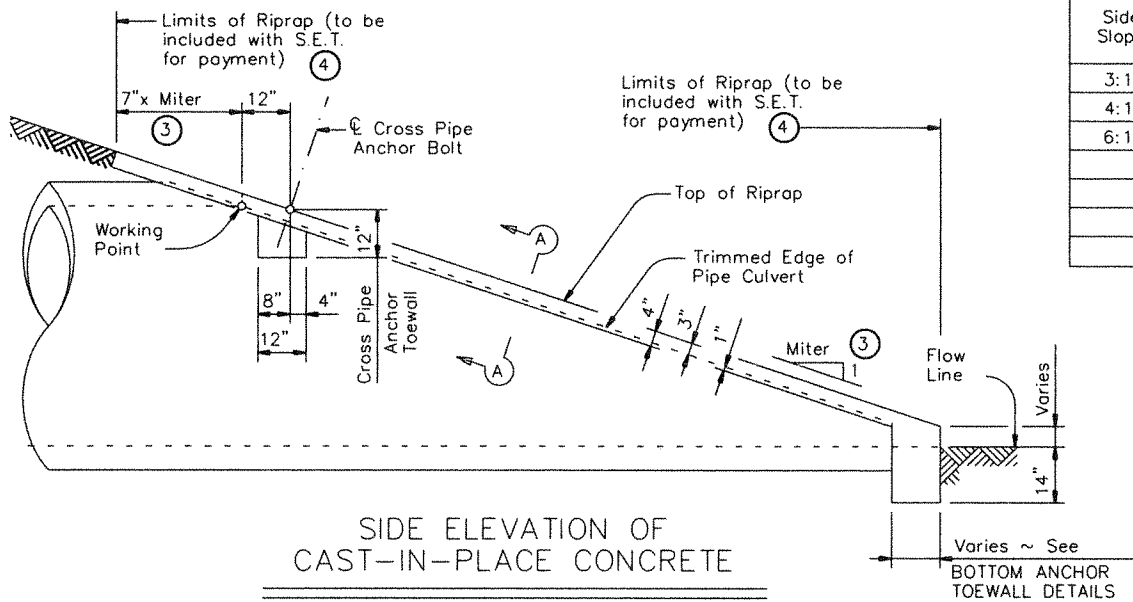
DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

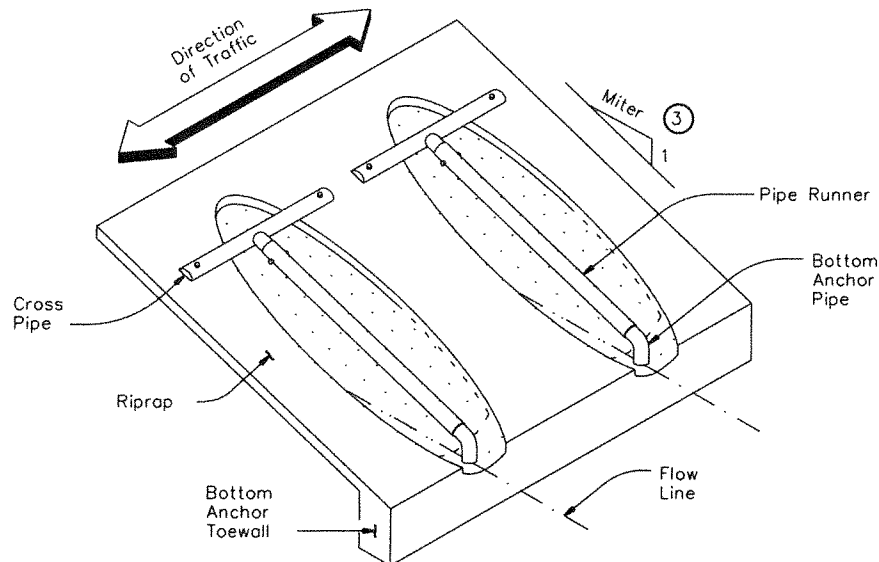
### SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)



### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar. Pipe Runners not shown for clarity.)



### ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

PIPE RUNNERS NOT REQUIRED. CONTRACTOR MAY SUBMIT ALTERNATE S.E.T. DESIGN TO ENGINEER FOR APPROVAL.

### CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS

| Nominal Culvert I.D. | Pipe Culvert Spa ~ G | Cross Pipe Length | Pipe Runner Length |          |          |          |                |          |          |          |                |          |          |          |
|----------------------|----------------------|-------------------|--------------------|----------|----------|----------|----------------|----------|----------|----------|----------------|----------|----------|----------|
|                      |                      |                   | 3:1 Side Slope     |          |          |          | 4:1 Side Slope |          |          |          | 6:1 Side Slope |          |          |          |
|                      |                      |                   | 0° Skew            | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew |
| 24"                  | 1'- 7"               | 3'- 5"            | N/A                | N/A      | N/A      | 5'-10"   | N/A            | N/A      | N/A      | 8'- 1"   | N/A            | N/A      | N/A      | 12'- 9"  |
| 27"                  | 1'- 8"               | 3'- 8"            | N/A                | N/A      | 5'- 5"   | 6'-11"   | N/A            | N/A      | 7'- 7"   | 9'- 7"   | N/A            | N/A      | 11'-11"  | 14'-11"  |
| 30"                  | 1'-10"               | 3'-11"            | N/A                | N/A      | 6'- 4"   | 8'- 0"   | N/A            | N/A      | 8'- 9"   | 11'- 0"  | N/A            | N/A      | 13'- 8"  | 17'- 0"  |
| 33"                  | 1'-11"               | 4'- 2"            | 6'- 2"             | 6'- 5"   | 7'- 3"   | 9'- 1"   | 8'- 6"         | 8'-10"   | 10'- 0"  | 12'- 5"  | 13'- 3"        | 13'- 9"  | 15'- 5"  | 19'- 2"  |
| 36"                  | 2'- 1"               | 4'- 5"            | 6'-11"             | 7'- 3"   | 8'- 2"   | 10'- 2"  | 9'- 6"         | 9'-11"   | 11'- 2"  | 13'-10"  | 14'- 9"        | 15'- 3"  | 17'- 2"  | 21'- 3"  |
| 42"                  | 2'- 4"               | 4'-11"            | 8'- 6"             | 8'-10"   | 9'-11"   | 12'- 4"  | 11'- 7"        | 12'- 0"  | 13'- 6"  | 16'- 8"  | 17'- 9"        | 18'- 5"  | 20'- 8"  | 25'- 7"  |
| 48"                  | 2'- 7"               | 5'- 5"            | 10'- 1"            | 10'- 5"  | 11'- 9"  | N/A      | 13'- 7"        | 14'- 2"  | 15'-10"  | N/A      | 20'- 9"        | 21'- 6"  | 24'- 2"  | N/A      |
| 54"                  | 3'- 0"               | 5'-11"            | 11'- 8"            | 12'- 1"  | N/A      | N/A      | 15'- 8"        | 16'- 3"  | N/A      | N/A      | 23'-10"        | 24'- 8"  | N/A      | N/A      |
| 60"                  | 3'- 3"               | 6'- 5"            | 13'- 3"            | N/A      | N/A      | N/A      | 17'- 9"        | N/A      | N/A      | N/A      | 26'-10"        | N/A      | N/A      | N/A      |

### TYPICAL PIPE CULVERT MITERS

| Side Slope | 0° Skew | 15° Skew | 30° Skew | 45° Skew |
|------------|---------|----------|----------|----------|
| 3:1        | 3:1     | 3.106:1  | 3.464:1  | 4.243:1  |
| 4:1        | 4:1     | 4.141:1  | 4.619:1  | 5.657:1  |
| 6:1        | 6:1     | 6.212:1  | 6.928:1  | 8.485:1  |

### CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED

| Nominal Culvert I.D. | Single Pipe Culvert | Multiple Pipe Culverts |
|----------------------|---------------------|------------------------|
| 12" thru 21"         | Skews thru 45°      | Skews thru 45°         |
| 24"                  | Skews thru 45°      | Skews thru 30°         |
| 27"                  | Skews thru 30°      | Skews thru 15°         |
| 30"                  | Skews thru 15°      | Skews thru 15°         |
| 33"                  | Skews thru 15°      | Always required        |
| 36"                  | Normal(No Skew)     | Always required        |
| 42" to 60"           | Always required     | Always required        |

### STANDARD PIPE SIZES & MAX PIPE RUNNER LENGTHS

| Pipe Size | Pipe O.D. | Pipe I.D. | Max Pipe Runner Length |
|-----------|-----------|-----------|------------------------|
| 2" STD    | 2.375"    | 2.067"    | N/A                    |
| 3" STD    | 3.500"    | 3.068"    | 10'- 0"                |
| 4" STD    | 4.500"    | 4.026"    | 19'- 8"                |
| 5" STD    | 5.563"    | 5.047"    | 34'- 2"                |

### ESTIMATED CONCRETE RIPRAP QUANTITIES (CY)

| Nominal Culvert I.D. | 3:1 Side Slope |          |          |          | 4:1 Side Slope |          |          |          | 6:1 Side Slope |          |          |          |
|----------------------|----------------|----------|----------|----------|----------------|----------|----------|----------|----------------|----------|----------|----------|
|                      | 0° Skew        | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew |
| 12"                  | 0.4            | 0.4      | 0.5      | 0.5      | 0.5            | 0.5      | 0.5      | 0.6      | 0.7            | 0.7      | 0.7      | 0.8      |
| 15"                  | 0.5            | 0.5      | 0.5      | 0.6      | 0.6            | 0.6      | 0.6      | 0.7      | 0.7            | 0.7      | 0.8      | 0.9      |
| 18"                  | 0.5            | 0.5      | 0.6      | 0.6      | 0.6            | 0.7      | 0.7      | 0.8      | 0.8            | 0.8      | 0.9      | 1.0      |
| 21"                  | 0.6            | 0.6      | 0.6      | 0.7      | 0.7            | 0.7      | 0.8      | 0.9      | 0.9            | 0.9      | 1.0      | 1.2      |
| 24"                  | 0.6            | 0.7      | 0.7      | 0.8      | 0.8            | 0.8      | 0.8      | 1.0      | 1.0            | 1.0      | 1.1      | 1.3      |
| 27"                  | 0.7            | 0.7      | 0.8      | 0.9      | 0.8            | 0.9      | 0.9      | 1.1      | 1.1            | 1.1      | 1.2      | 1.4      |
| 30"                  | 0.8            | 0.8      | 0.8      | 0.9      | 0.9            | 0.9      | 1.0      | 1.2      | 1.2            | 1.2      | 1.3      | 1.6      |
| 33"                  | 0.8            | 0.8      | 0.9      | 1.0      | 1.0            | 1.0      | 1.1      | 1.3      | 1.3            | 1.4      | 1.5      | 1.7      |
| 36"                  | 0.9            | 0.9      | 0.9      | 1.1      | 1.1            | 1.1      | 1.2      | 1.4      | 1.4            | 1.5      | 1.6      | 1.8      |
| 42"                  | 1.0            | 1.0      | 1.1      | 1.3      | 1.2            | 1.3      | 1.3      | 1.6      | 1.6            | 1.7      | 1.8      | 2.1      |
| 48"                  | 1.1            | 1.1      | 1.2      | N/A      | 1.4            | 1.4      | 1.5      | N/A      | 1.9            | 1.9      | 2.1      | N/A      |
| 54"                  | 1.3            | 1.3      | N/A      | N/A      | 1.6            | 1.6      | N/A      | N/A      | 2.1            | 2.1      | N/A      | N/A      |
| 60"                  | 1.4            | N/A      | N/A      | N/A      | 1.7            | N/A      | N/A      | N/A      | 2.3            | N/A      | N/A      | N/A      |

- ① Size of Pipe Runner shall be as shown in the tables. Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out and Bottom Anchor Pipe shall be the next smaller size pipe as shown in the STANDARD PIPE SIZES table.

- ② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°.  
For 54" culvert pipes, the skew must not exceed 15°.  
For 48" culvert pipes, the skew must not exceed 30°.  
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Roadway Design Manual".

- ③ Miter = Slope of Mitered Pipe Culvert End

- ④ Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

- ⑤ Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple Pipe Culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.



Texas Department of Transportation

Bridge Division Standard

### SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA

PIPE CULVERTS

TYPE II ~ CROSS DRAINAGE

SETP-CD

|                                     |         |         |         |           |
|-------------------------------------|---------|---------|---------|-----------|
| FILE: setpcdse.dgn                  | DN: GAF | CK: CAT | DN: JRP | CK: GAF   |
| ©TxDOT February 2010                | CDT     | SECT    | JOB     | HIGHWAY   |
| REVISIONS                           |         |         |         |           |
| 11-10 Add note for synthetic fibers | DIST    | COUNTY  |         | SHEET NO. |

NATIONAL LAND PARTNERS

PARADISE MEADOWS

A RESIDENTIAL DEVELOPMENT

PARKER COUNTY, TEXAS

CONSTRUCTION DETAILS 2 OF 2

DATE

NO. DESCRIPTION



PROJECT NUMBER: 2020.172.000  
DATE: 1/10/2021  
DESIGN BY: CW  
DRAWN BY: MJD  
CHECKED BY: CW

SHEET 11