

# CONSTRUCTION PLANS FOR BRISTOL PARK (PHASE II)

AN ADDITION TO THE CITY OF LUCAS  
COLLIN COUNTY, TEXAS  
20 SINGLE FAMILY LOTS, 39.08 ACRES

**CONTACT INFORMATION:**

City of Lucas - (972) 771-6228  
Engineer - Stanton Foerster, P.E.  
Development Services Director - Joe Hilbourn

Lovejoy ISD - (469) 742-8017  
Dennis Womack

Grayson-Collin Electric - (903) 482-7183  
Michael Lauer

TXU Energy - (214) 812-4600  
Brian Neitzel

North Texas Municipal Water District - (972) 442-5402  
Bob Quinn

Co-Serve - (940) 321-7862  
Lance Ehler



VICINITY MAP  
NOT TO SCALE



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**RECORD DRAWINGS**

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-15  
TODD WINTERS DATE

**CAUTION! EXISTING UTILITIES**

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

SITE BENCHMARK:  
An 'X' cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek elevation: 569.65

OWNER/DEVELOPER  
**LUCAS REAL ESTATE, LLC**  
1221 N INTERSTATE 35E STE 200  
CARROLLTON, TX 75006-3806



ENGINEERING / PROJECT MANAGEMENT /  
CONSTRUCTION SERVICES FIRM REG # F-001145  
201 WINDCO CIR, SUITE 200 WYLIE, TEXAS 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

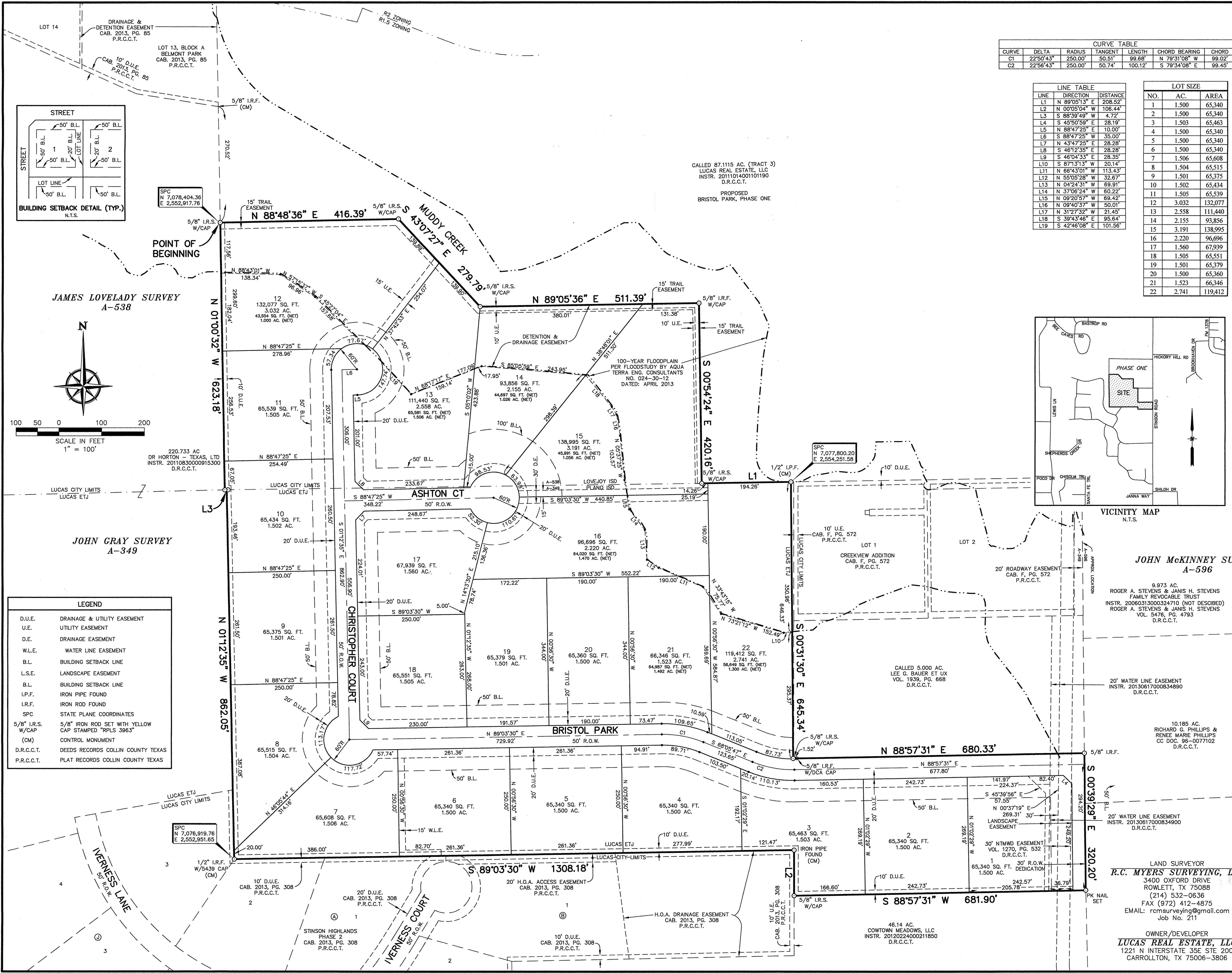
REVISIONS:

DATE:	SEPTEMBER, 2015
PROJECT NO.:	8313
DWG FILE NAME:	20 WATER DETAILS.dwg

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION.

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY TODD D. WINTERS, P.E. 87085



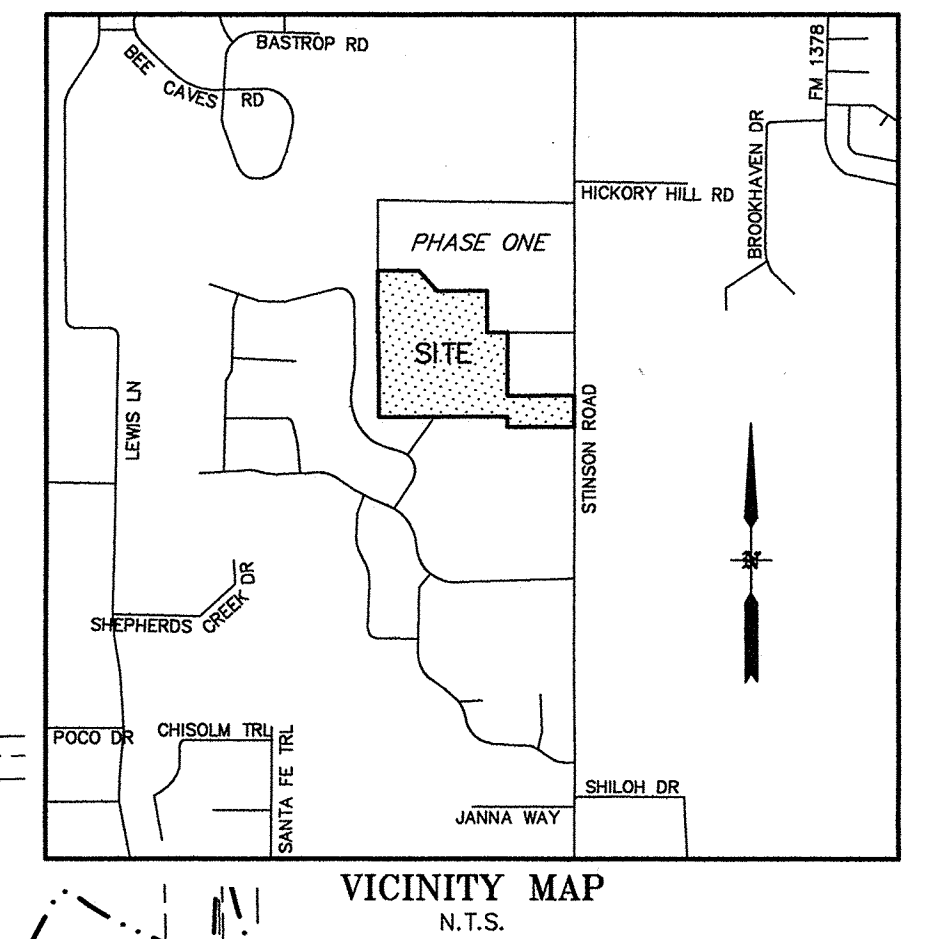


CURVE TABLE						
CURVE	DELTA	RADIUS	TANGENT	LENGTH	CHORD BEARING	CHORD
C1	22°50'43"	250.00'	50.51'	99.68'	N 79°31'08" W	99.02'
C2	22°56'43"	250.00'	50.74'	100.12'	S 79°34'08" E	99.45'

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	N 89°05'36" E	208.52'
L2	N 00°05'04" W	108.44'
L3	S 88°39'49" W	4.72'
L4	S 45°50'59" E	28.19'
L5	N 88°47'25" E	10.00'
L6	S 88°47'25" W	35.00'
L7	N 43°47'25" E	28.28'
L8	S 48°12'35" E	28.28'
L9	S 48°04'33" E	28.35'
L10	S 87°13'13" W	20.14'
L11	N 66°43'01" W	113.43'
L12	N 55°05'28" W	32.67'
L13	N 04°24'31" W	69.91'
L14	N 37°06'24" W	60.22'
L15	N 09°20'57" W	69.42'
L16	N 09°40'37" W	50.01'
L17	N 31°27'32" W	21.45'
L18	S 39°43'46" E	95.64'
L19	S 42°46'08" E	101.56'

LOT SIZE		
NO.	AC.	AREA
1	1.500	65,340
2	1.500	65,340
3	1.503	65,463
4	1.500	65,340
5	1.500	65,340
6	1.500	65,340
7	1.506	65,608
8	1.504	65,515
9	1.501	65,375
10	1.502	65,434
11	1.505	65,539
12	3.032	132,077
13	2.558	111,440
14	2.155	93,856
15	3.191	138,995
16	2.220	96,696
17	1.560	67,939
18	1.505	65,551
19	1.501	65,379
20	1.500	65,360
21	1.523	66,346
22	2.741	119,412

- NOTES:
- By graphical plotting, part of the parcel described herein lies within Zone "A", as delineated on the Collin County, Texas and Incorporated Areas, Flood Insurance Rate Map, Map Number 480850405 J, dated June 02, 2009, as published by the Federal Emergency Management Agency. Zone "A" is defined as "Special flood hazard areas inundated by 100-year flood; No Base flood elevations determined." The Surveyor utilized the above referenced floodplain information for this determination and the Surveyor does not certify that revised floodplain information has or has not been published by the Federal Emergency Management Agency or some other source. This statement shall not create liability on the part of the surveyor.
  - Lots or portions of lots within the floodplain or areas of special flood hazard require a development permit prior to issuance of a building permit or commencement of construction including site grading, on all or part of those lots.
  - Bearings are based on Texas State Plane Coordinates. Projection: State Plane NAD83 Texas North Central Zone 4202, Lambert Conformal Conic, Feet (TX83-NCF).
  - Property owners to maintain property including drainage and utility easements to the edge of pavement.
  - Only wrought iron fences permitted within drainage easements.
  - A 5/8-inch iron rod with yellow cap stamped "RPLS 3963" will be set at all lot corners, points of curvature, points of tangency and angle points in public rights-of-way whenever possible unless otherwise shown or noted in this drawing.
  - Selling a portion of any lot within this addition by metes and bounds is a violation of state law and city ordinance and is subject to fines and withholding of utilities and building permits.
  - Benchmark: An "x" cut in south end of a concrete headwall on the west side of Stinson Road at Muddy Creek. Elev. 569.65'
  - The landscape easements are dedicated to and will be maintained by the Homeowner's Association.



North Texas Municipal Water District (NTMWD) Note:  
 The NTMWD easement restricts construction of permanent structures such as foundations, walls, pools and permanent storage buildings. Items such as driveways, fences, sprinkler systems and normal landscaping plans that encroach on the NTMWD easements are allowed. However, the NTMWD assumes no responsibility for damages resulting from the need to repair or maintain the NTMWD pipelines. Further, any cost for repair for damage to the pipelines resulting from construction by the developer, contractor or owner will be the responsibility of the developer, contractor or owner.

Filed and Recorded  
 Official Public Records  
 Slocum Kemp County Clerk  
 Collin County, TEXAS  
 12/23/2014 02:30:32 PM  
 \$37.50 CHRG.  
 2014122301000410  
 2014-701

EXISTING ZONING: R1.5 AND ETJ  
 PROPOSED ZONING: R1.5  
 22 RESIDENTIAL LOTS  
 DENSITY: 1 LOT PER 2.004 ACRES GROSS  
 AVG. LOT SIZE: 1.819 ACRE  
 MIN. LOT SIZE: 1.500 ACRE

FINAL PLAT  
**BRISTOL PARK  
 PHASE TWO**  
 LOTS 1-22, BLOCK B  
 22 RESIDENTIAL LOTS  
 BEING 44.089 ACRES  
 SITUATED IN THE  
 JOHN GRAY SURVEY, ABSTRACT NO. 349 &  
 JAMES LOVELADY SURVEY, ABSTRACT NO. 538  
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

LAND SURVEYOR  
**R.C. MYERS SURVEYING, LLC**  
 3400 OXFORD DRIVE  
 ROWLETT, TX 75088  
 (214) 532-0636  
 FAX (972) 412-4875  
 EMAIL: rcmsurveying@gmail.com  
 Job No. 211

OWNER/DEVELOPER  
**LUCAS REAL ESTATE, LLC**  
 1221 N INTERSTATE 35E STE 200  
 CARROLLTON, TX 75006-3806

OWNER'S CERTIFICATE & DEDICATION

CITY APPROVAL CERTIFICATE

STATE OF TEXAS
COUNTY OF COLLIN

WHEREAS, LUCAS REAL ESTATE, LLC., BEING the owner of a 44.089 acre tract of land situated in the John Gray Survey, Abstract No. 349 and the James Lovelady Survey, Abstract No. 538, City of Lucas, Collin County, State of Texas, and being part of that certain part of 87.1115 acre tract of land (Tract 3) described in deed to Lucas Real Estate, LLC, as recorded in Instrument 20111014001101190, Deed Records, Collin County, Texas, and all of that certain 5.00 acre tract of land described in deed to Lucas Real Estate, LLC, as recorded in Instrument 20140107000014490 of said Deed Records, said 44.089 acre tract being more particularly described by metes and bounds as follows:

BEGINNING at a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner in the a common boundary line of a 59.030 acre tract and a 86.548 acre tract described in a boundary line agreement, as recorded in Instrument 20061020001510100 of said Deed Records;

THENCE Easterly, with the southerly boundary lines of BRISTOL PARK, Phase One, a proposed addition to the City of Lucas, the following courses:

- North 88 degrees 48 minutes 36 seconds East, a distance of 416.39 feet, to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner;
South 43 degrees 07 minutes 27 seconds East, a distance of 279.79 feet, to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner;
North 89 degrees 05 minutes 36 seconds East, a distance of 511.39 feet, to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner;
South 00 degrees 54 minutes 24 seconds East, a distance of 420.16 feet, to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner;
North 89 degrees 05 minutes 13 seconds East, a distance of 208.52 feet, to a 1/2-inch iron pipe found for an interior ell corner of said 87.1115 acre tract;

THENCE South 00 degrees 31 minutes 30 seconds East, with an easterly boundary line of said 87.1115 acre tract, a distance of 645.34 feet to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for corner at the intersection of the projected north line of said 5.00 acre tract to Lucas Real Estate, LLC, with last mentioned easterly line;

THENCE North 88 degrees 57 minutes 31 seconds East, at 1.52 feet, passing a 5/8-inch iron rod with cap stamped "DCA" found for the northwest corner of said 5.00 acre tract and the southwest corner of a 5.000 acre tract of land described in deed to Lee G. Bauer and Betty A. Bauer, as recorded in Volume 1939, Page 668 of said Deed Records, and continuing with the common boundary line of said 5.00 acre Lucas Real Estate tract and said 5.000 acre Bauer tract, a total distance of 680.33 feet to a 5/8-inch iron rod found for the southeast corner of said 5.000 acre Bauer tract and the northeast corner of said 5.000 acre Lucas Real Estate tract, said corner being in Stinson Road, an undedicated public road;

THENCE South 00 degrees 39 minutes 29 seconds East, with the east boundary line of said 5.00 acre Lucas Real Estate tract, and in Stinson Road, a distance of 320.20 feet to a PK Nail set for the southeast corner of said 5.00 acre Lucas Real Estate tract and the northeast corner of a 46.14 acre tract of land described in deed to Cowtown Meadows, LLC, as recorded in Instrument 20120224000211850 of said Deed Records;

THENCE South 88 degrees 57 minutes 31 seconds West, with the common boundary line of said 5.00 acre tract and said 46.14 acre tract, a distance of 681.90 feet to a 5/8-inch iron rod with yellow cap stamped "RPLS 3963" set for the southwest corner of said 5.00 acre tract and an exterior ell corner of said 46.14 acre tract, said corner being in an east boundary line of a 220.733 acre tract of land described in deed to DR Horton - Texas, Ltd, as recorded in Instrument 20110830000915300 of said Deed Records;

THENCE North 00 degrees 05 minutes 04 seconds West, with the common boundary line of said 5.00 acre tract and said 220.733 acre tract, a distance of 106.44 feet to a 1/2-inch iron rod found for the most southern southeast corner of said 87.1115 acre tract and an exterior ell corner of said 220.733 acre tract;

THENCE South 89 degrees 03 minutes 30 seconds West, with a common boundary line of said 87.1115 acre tract and said 220.733 acre tract, a distance of 1308.18 feet to a 1/2-inch iron rod with cap stamped "5439" found for the southwest corner of said 87.1115 acre tract and an interior ell corner of said 220.733 acre tract;

THENCE North 01 degrees 12 minutes 35 seconds West, with a common boundary line of said 87.1115 acre tract and said 220.733 acre tract, a distance of 862.05 feet to a 5/8-inch iron rod with cap stamped "5439" found in the common boundary line of said 59.030 acre tract and said 86.548 acre tract described in said boundary line agreement;

THENCE South 88 degrees 39 minutes 49 seconds West, with the common agreed boundary line of said 59.030 acre tract and said 86.548 acre tract, a distance of 4.72 feet to a point for corner;

THENCE North 01 degrees 00 minutes 32 seconds West, with the common agreed boundary line of said 59.030 acre tract and said 86.548 acre tract, a distance of 623.18 feet to the POINT OF BEGINNING AND CONTAINING 1,920,526 square feet or 44.089 acres of land.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS:

THAT, LUCAS REAL ESTATE, LLC., does hereby adopt this plat designating the herein described property as BRISTOL PARK, PHASE TWO, an addition to the City of Lucas, Texas, and does hereby dedicate to the City of Lucas, the roads, rights-of-way and easements shown thereon. The streets and alleys are dedicated for street purposes. The Easements and public use areas, as shown, are dedicated, to the City of Lucas forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon, over or across the Easements as shown. In addition, Utility Easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the Public's and City of Lucas's use thereof. The City of Lucas and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs or other improvements or growths which may in any way endanger or interfere with the systems in said Easements. The City of Lucas and public utility entities shall at all times have the full right of ingress and Egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, and adding to or removing all or parts of their respective systems without the necessity at any time procuring the permission from anyone.

This plat approved subject to all platting ordinances, rules, regulations and resolution of the City of Lucas, Texas.

FOR: LUCAS REAL ESTATE, LLC.

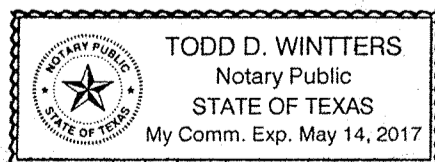
BY: [Signature] BRADFORD PHILLIPS

STATE OF TEXAS
COUNTY OF COLLIN

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Bradford Phillips, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office, this 13 day of December, 2014.

[Signature]
Notary Public in and for the State of Texas
My Commission Expires: 5-14-17



This plat is hereby approved by the Planning and Zoning Commission of the City of Lucas, Texas.

[Signature]
Chairman, Planning and Zoning Commission
Date: 12/11/14

ATTEST: [Signature]
Signature
Date: 12-17-14

[Signature]
Name: Donna Bradshaw
Date: 12-17-14

The The Director of Public Works of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances and with engineering construction standards and processes adopted by the City of Lucas, Texas as to which his/her approval is required.

[Signature]
Director of Public Works
Date: 12-18-14

The Director of Planning and Community Development of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances, or as may have been amended or modified, as allowed, by the Planning and Zoning Commission as to which his/her approval is required.

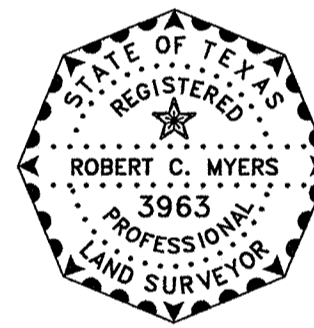
[Signature]
Director of Planning and Community Development
Date: 12/17/14

SURVEYOR'S CERTIFICATION

KNOW ALL MEN BY THESE PRESENTS:

That I, Robert C. Myers, hereby certify, that I prepared this plat was made from an actual on the ground survey of the land as described and that the corner monuments shown thereon were properly placed under my personal supervision in accordance with the Platting Rules and Regulations of the City of Lucas Planning and Zoning Commission

[Signature]
ROBERT C. MYERS
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 3963



STATE OF TEXAS
COUNTY OF COLLIN

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Robert C. Myers, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purpose and considerations therein expressed.

Given under my hand and seal of office, this 24th day of November, 2014.

[Signature]
Notary Public in and for the State of Texas
My Commission Expires: 02/14/2015



On-Site Sewage Facilities (OSSF) Notes:

- 1. All lots must utilize alternative type On-Site Sewage Facilities.
2. All lots must maintain state-mandated setback of all On-Site Sewage Facility components from any/all easements and drainage areas, water distribution lines, sharp breaks and/or creeks/rivers/ponds, etc. (Per State regulations).
3. A portion of lots 12, 13, 14, 15, 16, 21, and 22 are located within the 100-year flood plain:
- Any OSSF that is located within the 100-year flood plain is subject to special planning requirements.
- All electrical/mechanical appurtenances located within the 100-year flood plain must be elevated at least 1' above base flood elevation.
- A certificate of elevation establishing base flood elevation and proving that the finished floor will be at least 2' above base flood elevation must accompany any permit application for a structure that is proposed to be located within the curvilinear line of the 100-year flood plain.
4. Tree removal and/or grading for OSSF may be required on individual lots.
5. Individual site evaluations and OSSF design plans (meeting all State and County requirements) must be submitted to and approved by Collin County for each lot prior to construction of any OSSF system.

HEALTH DEPARTMENT CERTIFICATION:

I hereby certify that the on-site sewage facilities described on this plat conform to the applicable OSSF laws of the State of Texas, that site evaluations have been submitted representing the site conditions in the area in which on-site sewage facilities are planned to be used.

[Signature]
Registered Sanitarian or Designated Representative
Collin County Development Services

Filed and Recorded
Official Public Records
Stacey Kemp, County Clerk
Collin County, TEXAS
12/23/2014 02:30:32 PM
\$37.00 CASH
20141223010004410



FINAL PLAT
BRISTOL PARK
PHASE TWO

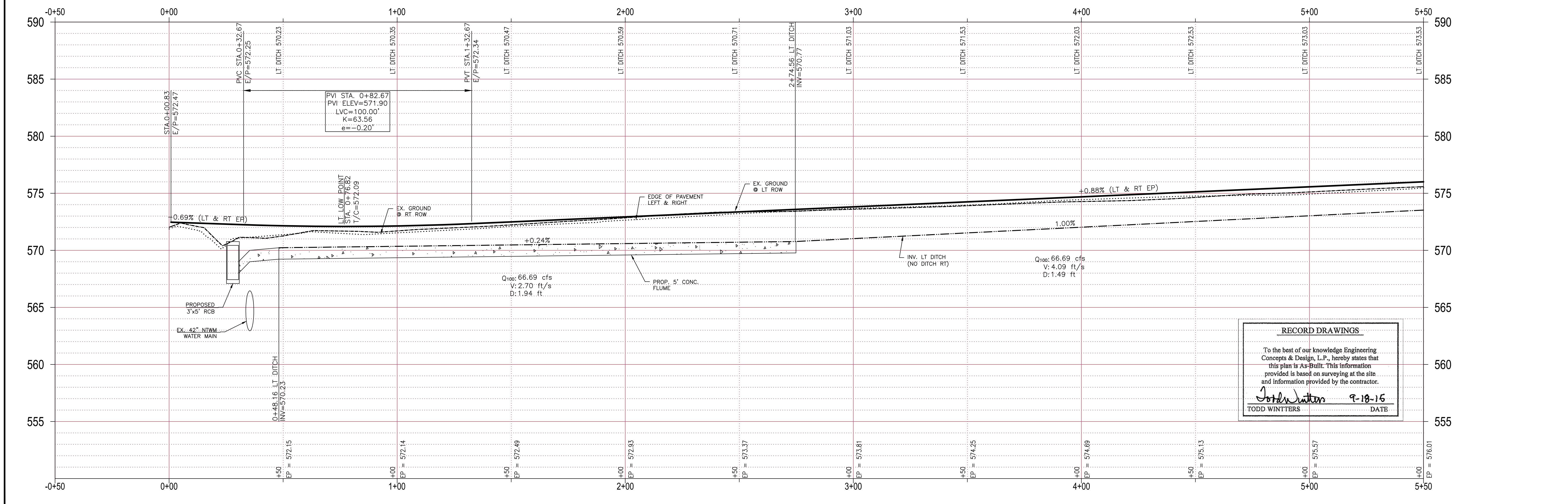
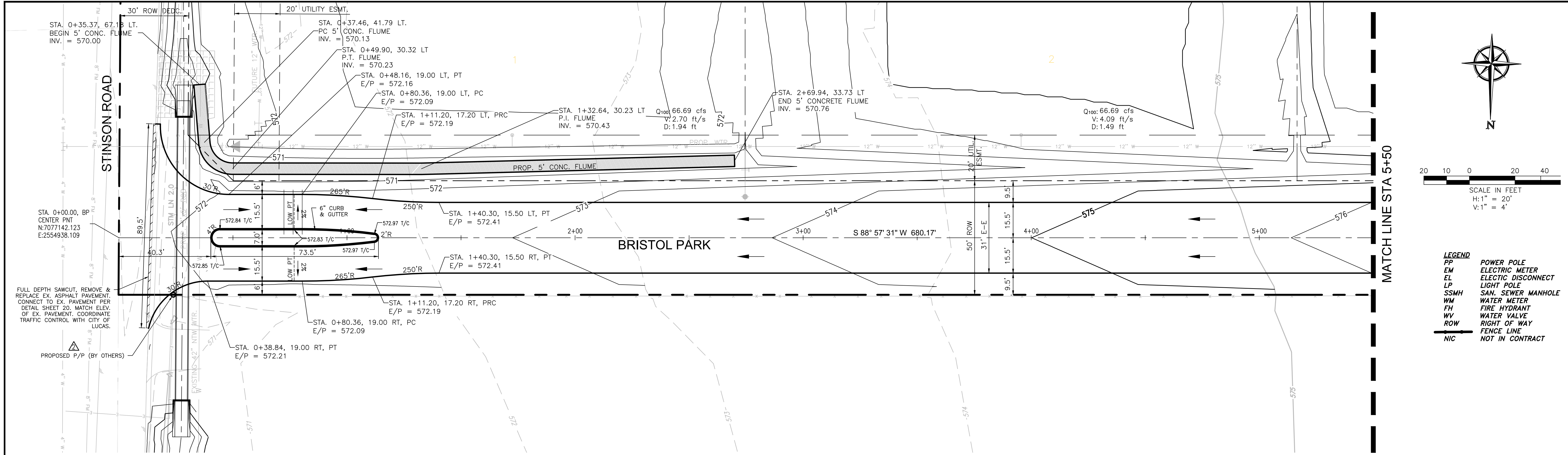
LAND SURVEYOR
R.C. MYERS SURVEYING, LLC
3400 OXFORD DRIVE
ROWLETT, TX 75088
(214) 532-0636
FAX (972) 412-4875
EMAIL: rcmsurveying@gmail.com
Job No. 211

OWNER/DEVELOPER
LUCAS REAL ESTATE, LLC
1221 N INTERSTATE 35E STE 200
CARROLLTON, TX 75006-3806

LOTS 1-22, BLOCK B
22 RESIDENTIAL LOTS
BEING 44.089 ACRES
JOHN GRAY SURVEY, ABSTRACT NO. 349 &
JAMES LOVELADY SURVEY, ABSTRACT NO. 538
CITY OF LUCAS, COLLIN COUNTY, TEXAS

ENGINEERING CONCEPTS & DESIGN, L.P.
ENGINEERING/PROJECT MANAGEMENT/CONSTRUCTION SERVICES
TEXAS FIRM REG. NO. 001145
201 WINDCO CIRCLE, SUITE 200, WYLE TEXAS 75098
(972) 941-8400 FAX (972) 941-8401





BENCHMARK:  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'

**ENGINEERINGCONCEPTS**  
& DESIGN, L.P.

ENGINEERING / PROJECT MANAGEMENT /  
CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
5/02/14	REVISED CULVERT (STM LN 2.0) ADDED 5' CONC. FLUME
9/17/14	ADDED POWER POLE
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
DWG FILE NAME: CHERRYWOOD LANE PAVING.DWG	

THIS DOCUMENT IS RELEASED FOR THE  
PURPOSE OF CONSTRUCTION. THE SEAL  
APPEARING ON THIS DOCUMENT WAS  
AUTHORIZED BY  
TODD D. WINTTERS, P.E. 87085



**PAVING PLAN & PROFILE**  
**BRISTOL PARK STA. 0+00 TO 5+50**  
**BRISTOL PARK**  
(PHASE II)

**RECORD DRAWINGS**

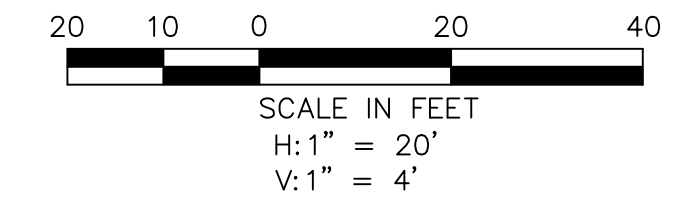
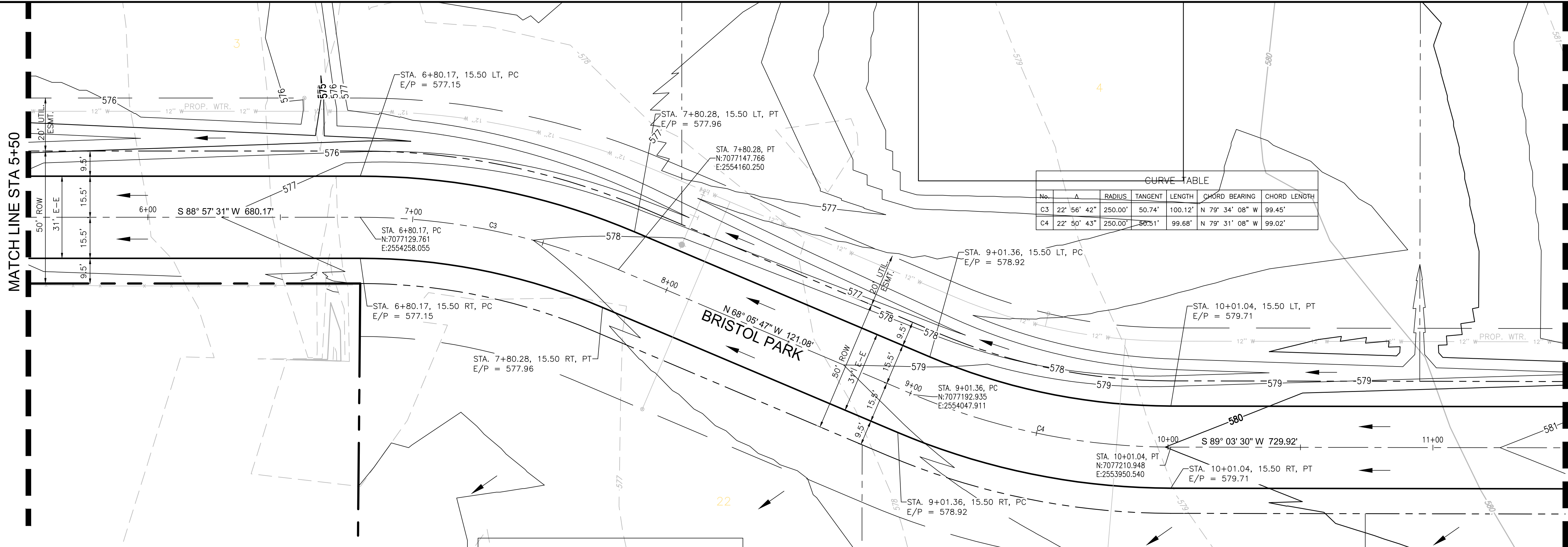
To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-15  
TODD WINTTERS DATE

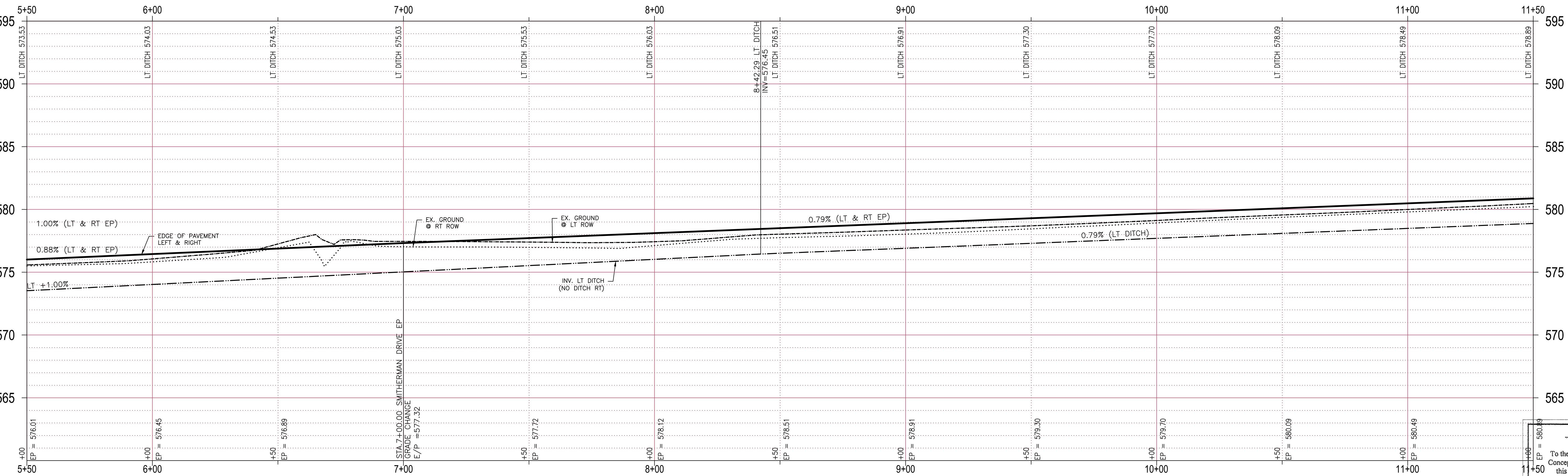
SHEET  
**5**  
OF  
**22**

MATCH LINE STA 5+50

MATCH LINE STA 11+50



- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN. SEWER MANHOLE
  - WM WATER METER
  - WH FIRE HYDRANT
  - WV WATER VALVE
  - ROW RIGHT OF WAY
  - FENCE LINE
  - NIC NOT IN CONTRACT



**RECORD DRAWINGS**

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-16  
TODD WINTERS DATE

**BENCHMARK:**  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'

**ENGINEERINGCONCEPTS & DESIGN, L.P.**

ENGINEERING / PROJECT MANAGEMENT /  
CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

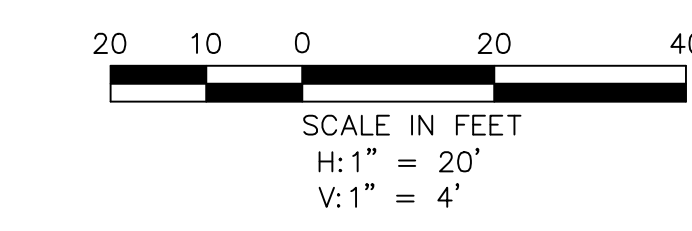
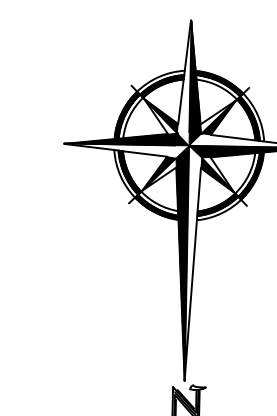
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
DWG FILE NAME: CHERRYWOOD LANE PAVING.DWG	

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY  
TODD D. WINTERS, P.E. 87085



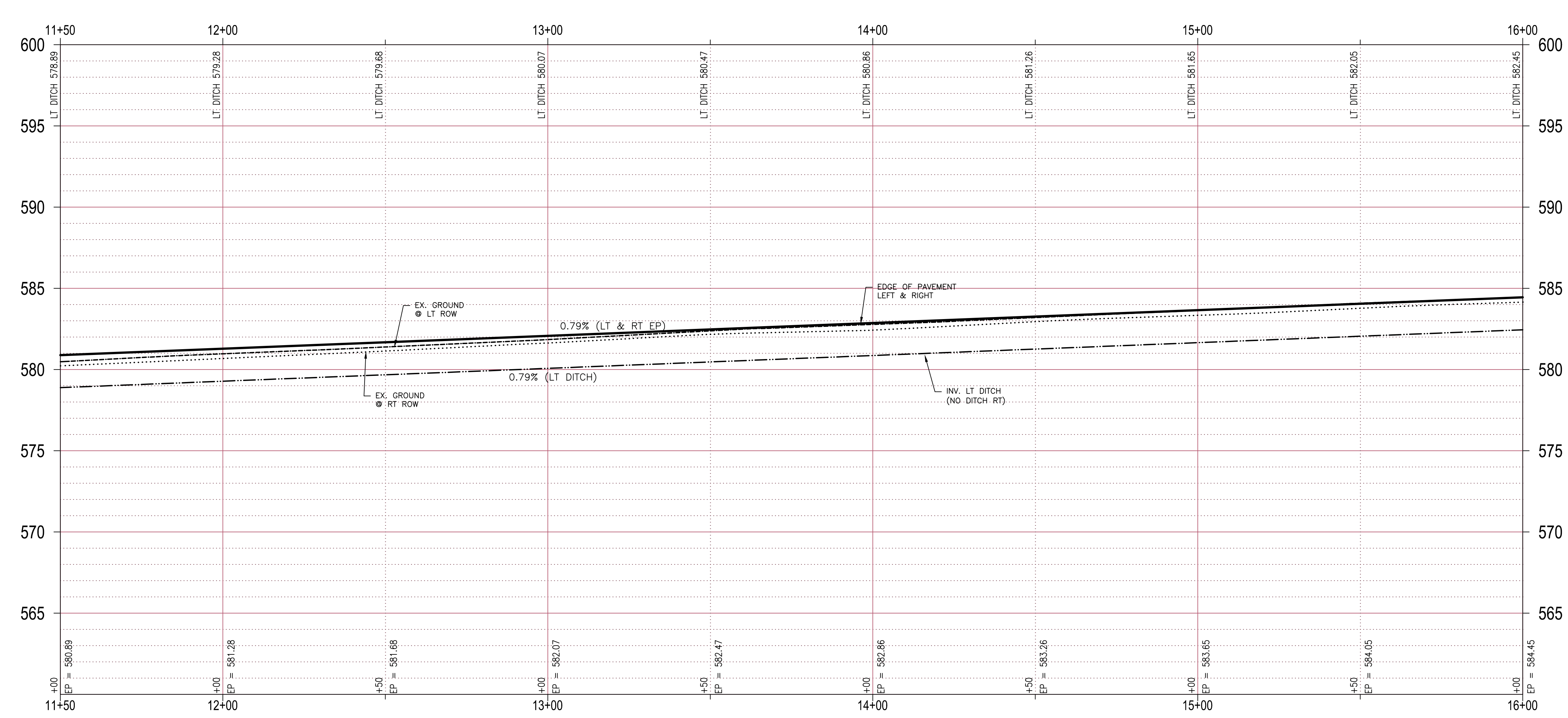
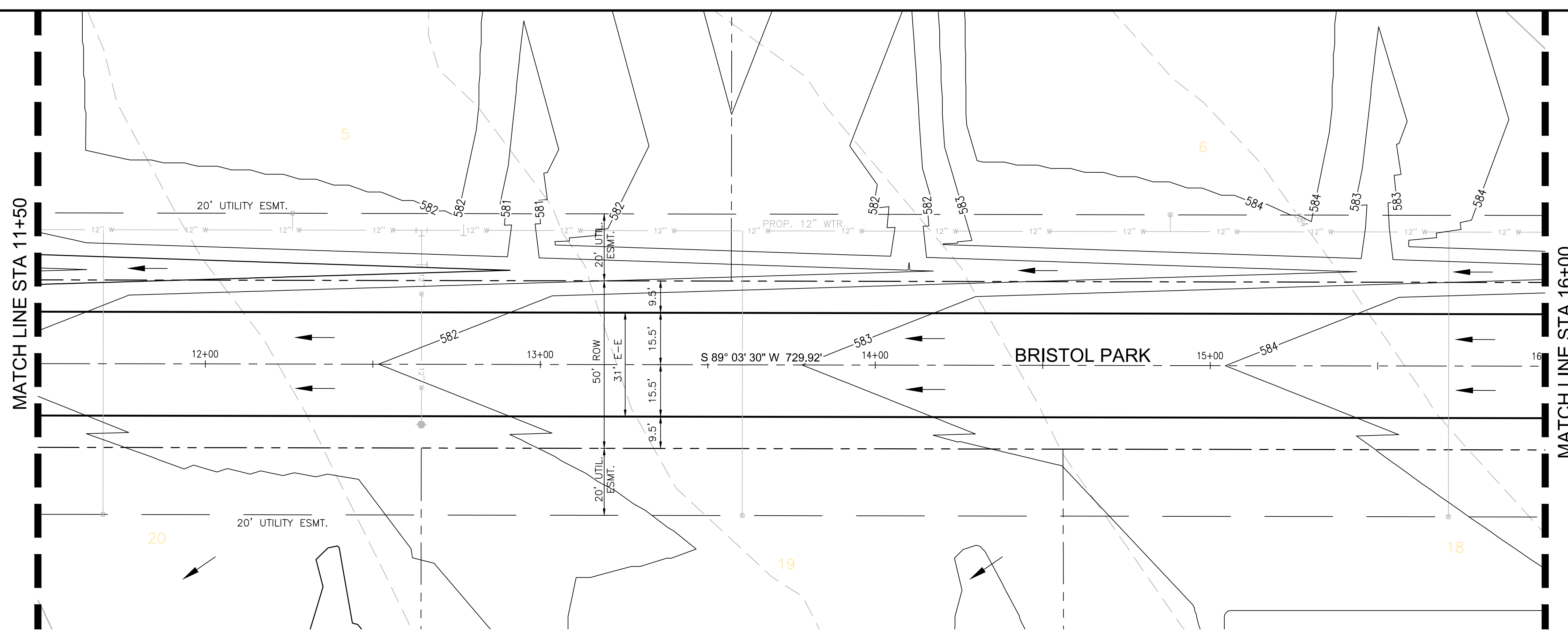
**PAVING PLAN & PROFILE**  
**BRISTOL PARK STA. 5+50 TO 11+50**  
**BRISTOL PARK**  
(PHASE II)

SHEET  
**6**  
OF  
**22**



**LEGEND**

PP	POWER POLE
EM	ELECTRIC METER
EL	ELECTRIC DISCONNECT
LP	LIGHT POLE
SSMH	SAN. SEWER MANHOLE
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
ROW	RIGHT OF WAY
—	FENCE LINE
NIC	NOT IN CONTRACT



**BENCHMARK:**  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'

**ENGINEERINGCONCEPTS & DESIGN, L.P.**  
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

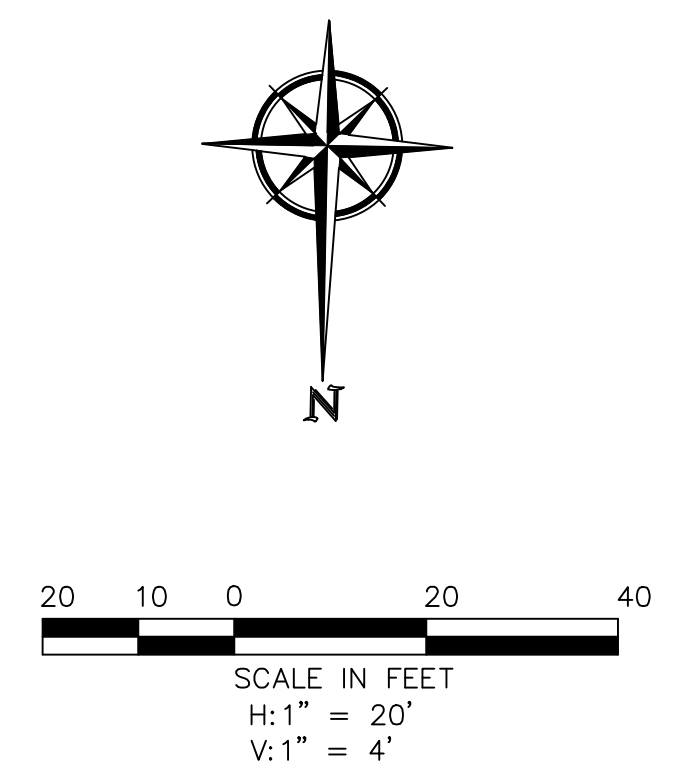
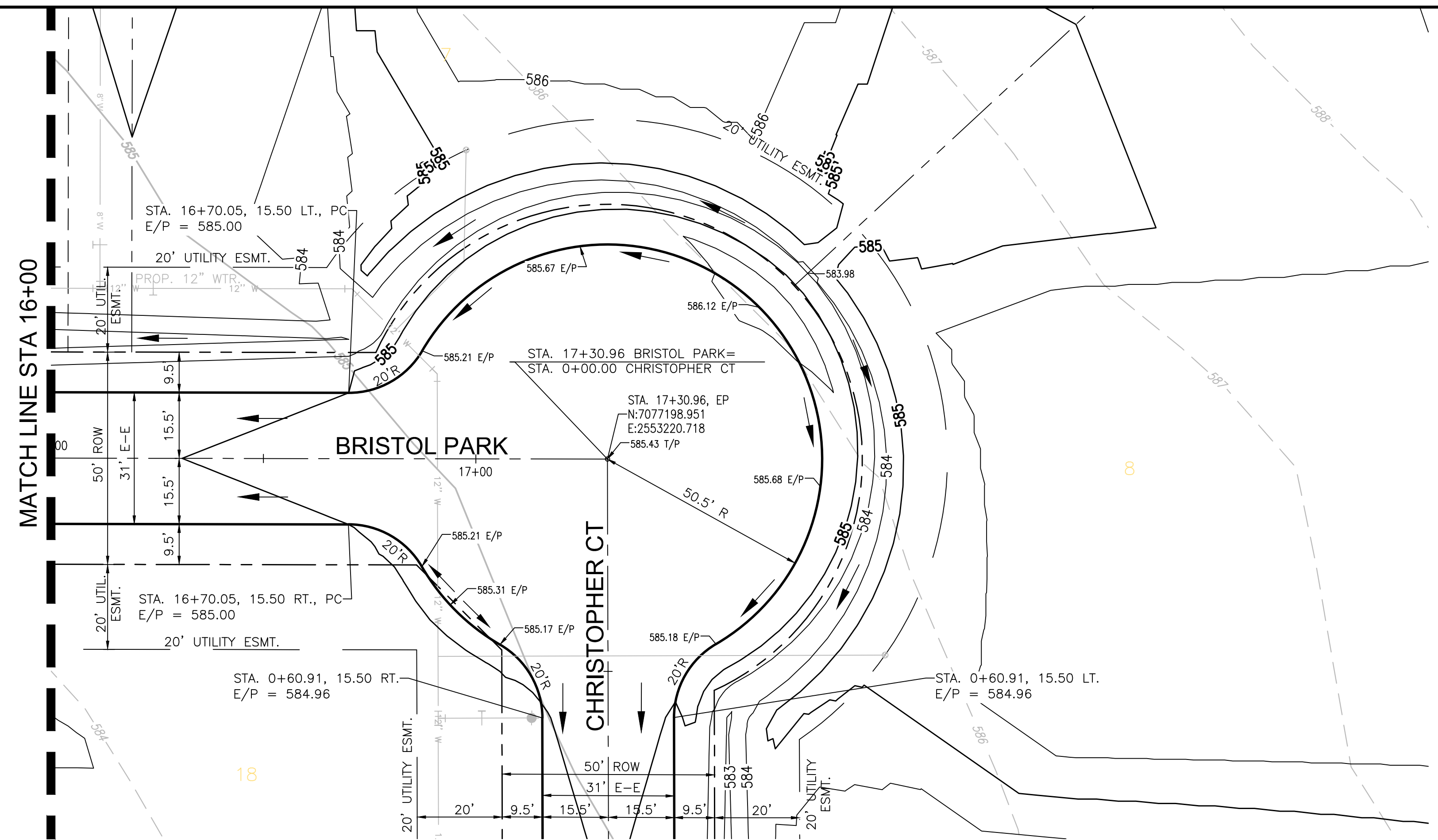
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CHECKED: JW	DATE: 21-Sep-15
PROJECT NO: 8313	
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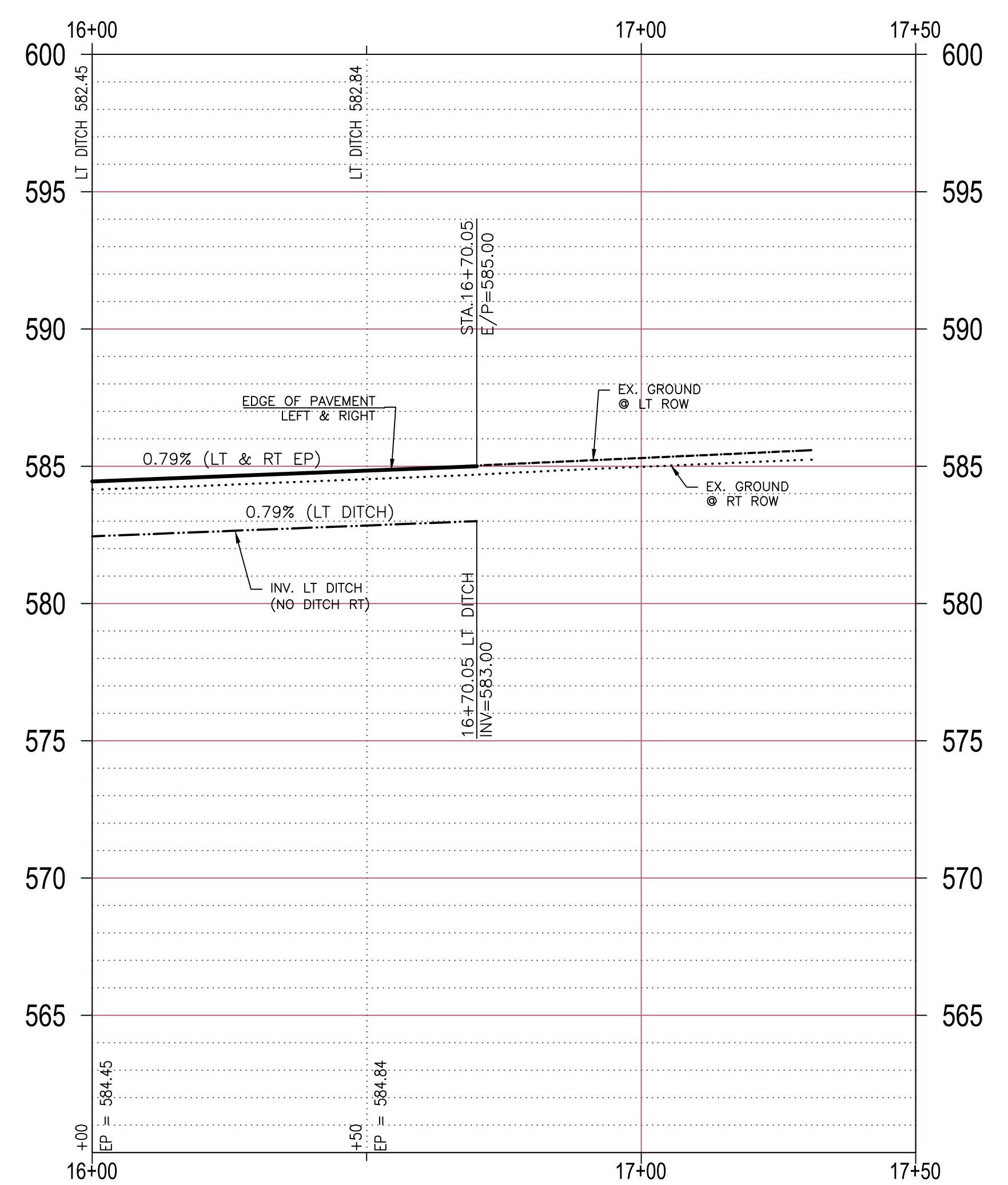


**PAVING PLAN & PROFILE**  
**BRISTOL PARK STA. 11+50 TO 16+00**  
**BRISTOL PARK**  
(PHASE II)

**RECORD DRAWINGS**  
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TODD WINTTERS 9-18-15  
DATE



- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN. SEWER MANHOLE
  - WM WATER METER
  - FH FIRE HYDRANT
  - WV WATER VALVE
  - ROW RIGHT OF WAY
  - FL FENCE LINE
  - NIC NOT IN CONTRACT



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*Todd Winters* 9-18-16  
TODD WINTTERS DATE

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REVISIONS:	
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO.: 8313	
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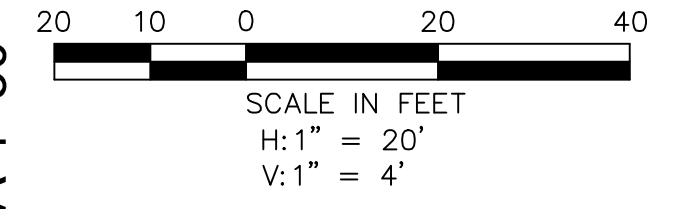
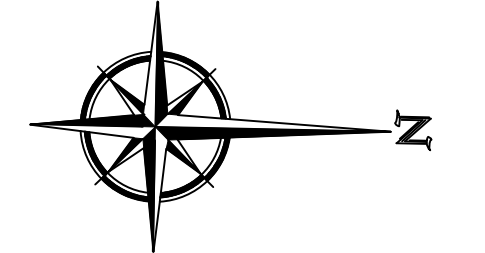
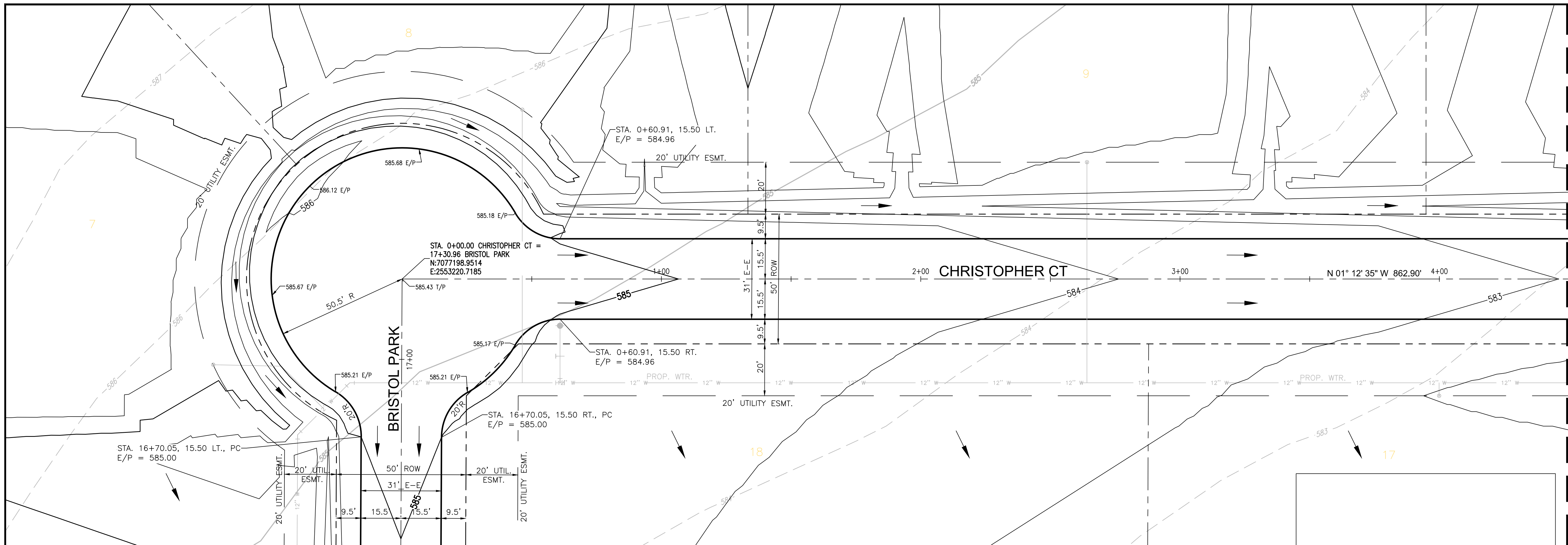
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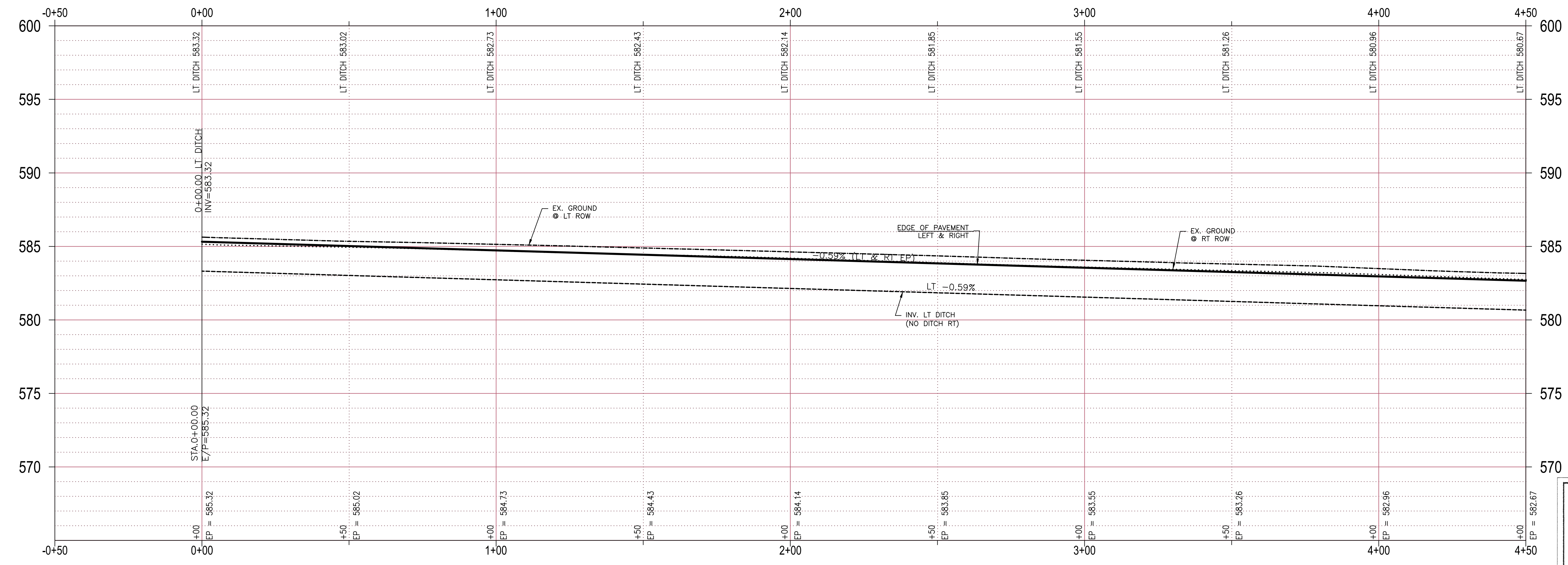
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**BRISTOL PARK STA. 16+00 TO END**  
**BRISTOL PARK**  
(PHASE II)

SHEET  
**8**  
OF  
**22**





- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN. SEWER MANHOLE
  - WM WATER METER
  - FH FIRE HYDRANT
  - WV WATER VALVE
  - ROW RIGHT OF WAY
  - FL FENCE LINE
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 972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
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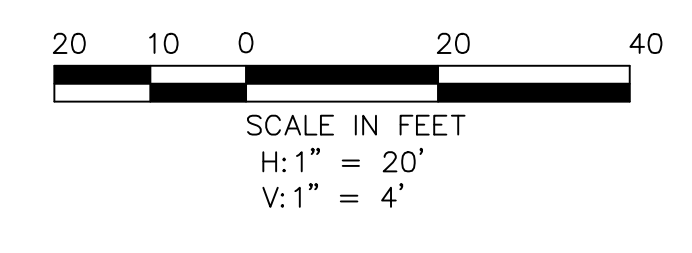
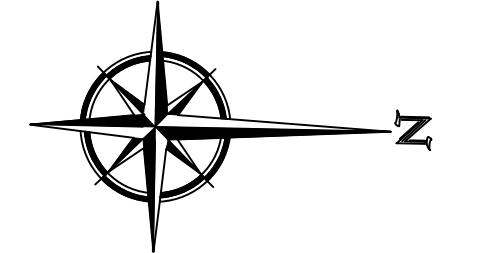
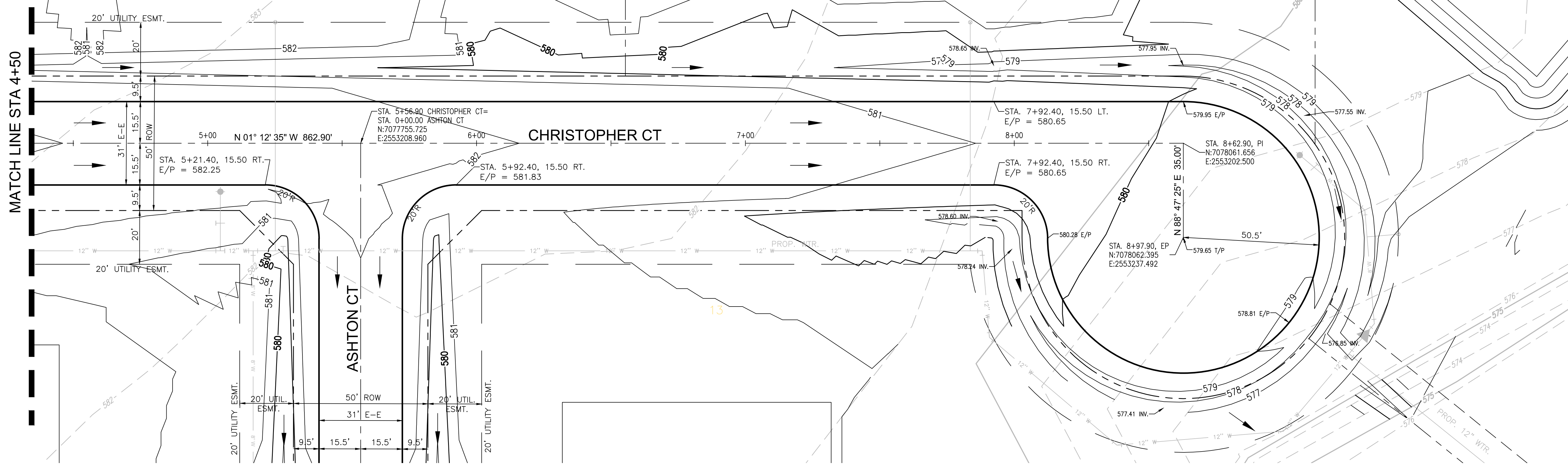
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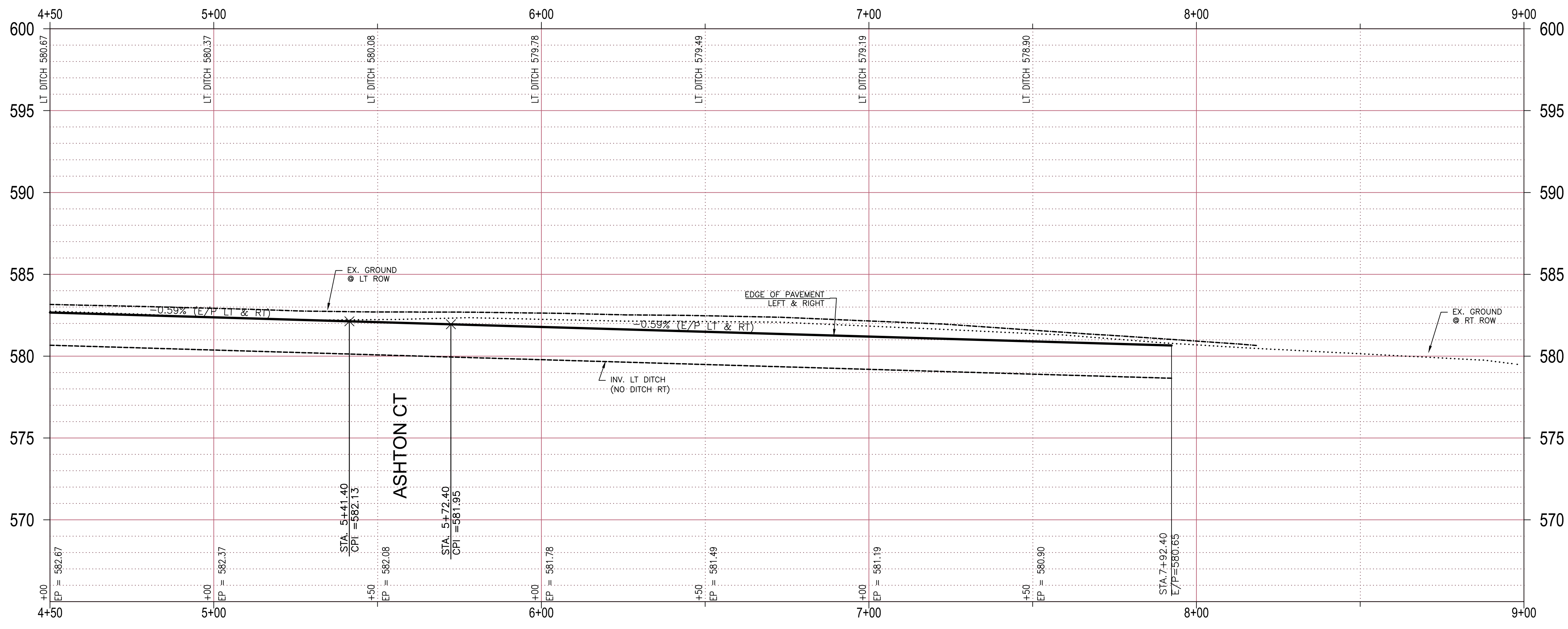
**PAVING PLAN & PROFILE**  
**CHRISTOPHER CT STA. 0+00 TO 4+50**  
**BRISTOL PARK**  
 (PHASE II)

SHEET  
**9**  
 OF  
**22**

MATCH LINE STA 4+50



- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN. SEWER MANHOLE
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  - FH FIRE HYDRANT
  - WV WATER VALVE
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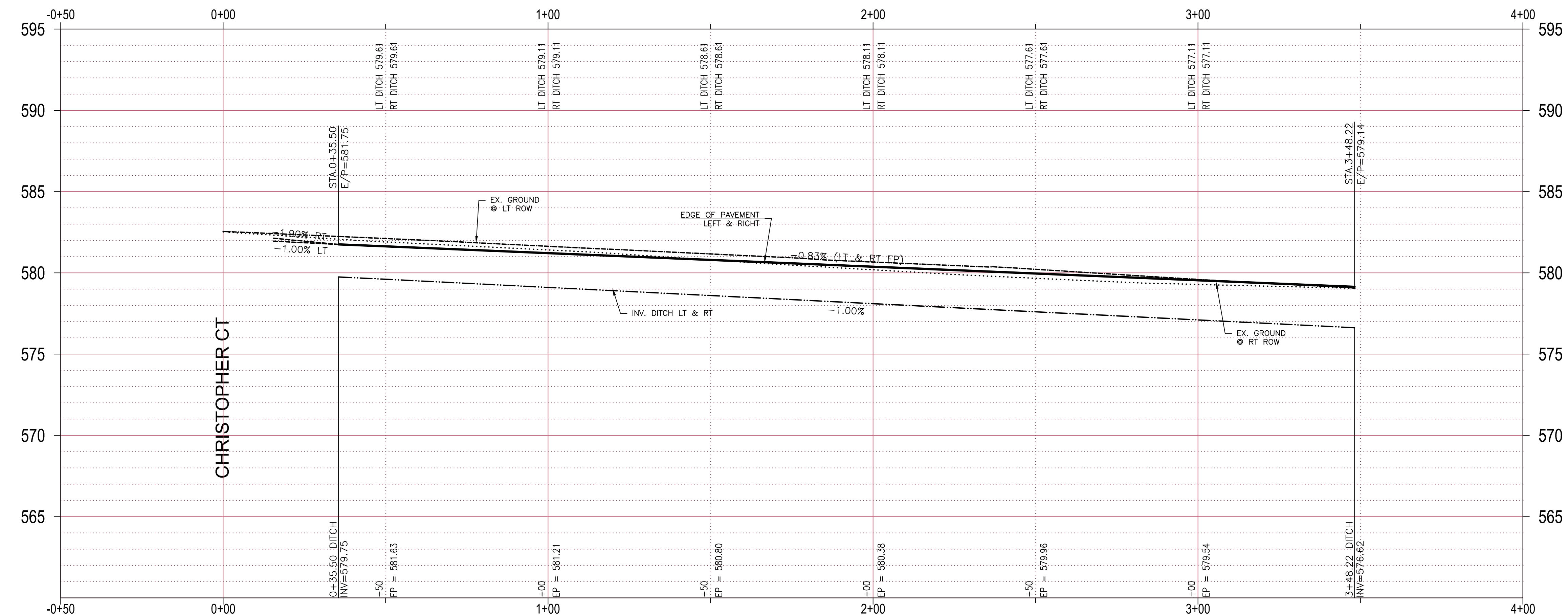
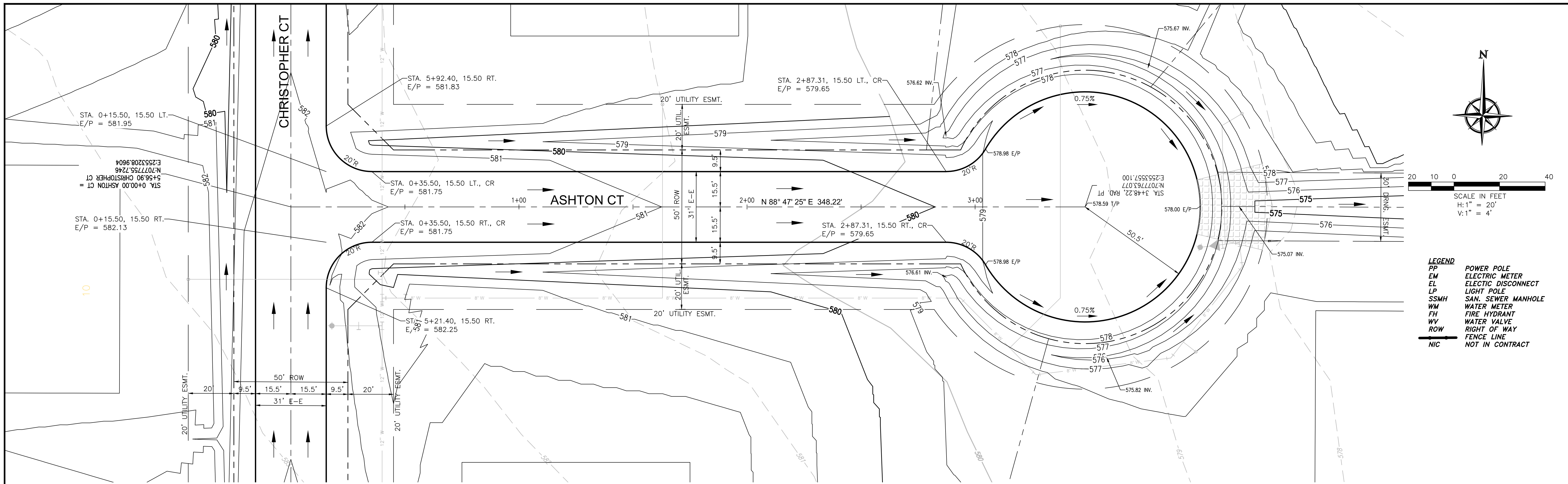
REVISIONS:	
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
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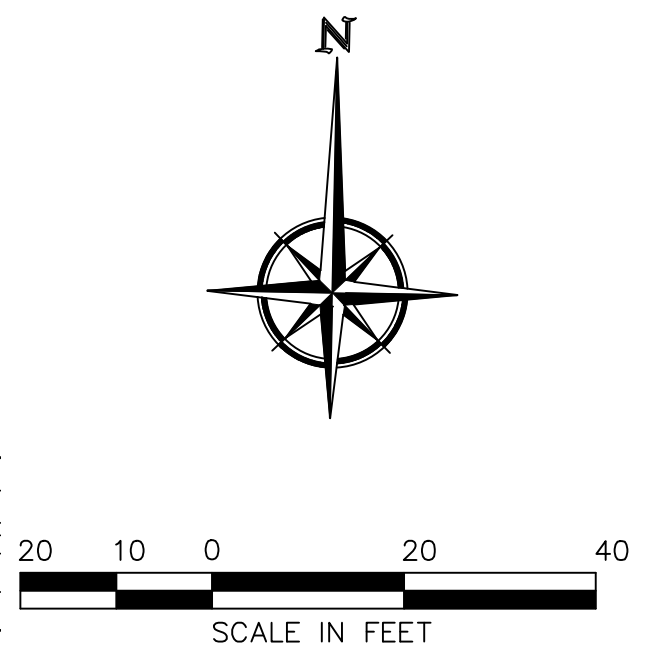


**PAVING PLAN & PROFILE**  
**CHRISTOPHER CT STA. 4+50 TO END**  
**BRISTOL PARK**  
(PHASE II)

SHEET  
**10**  
OF  
**22**



- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
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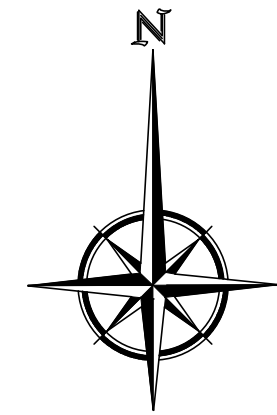
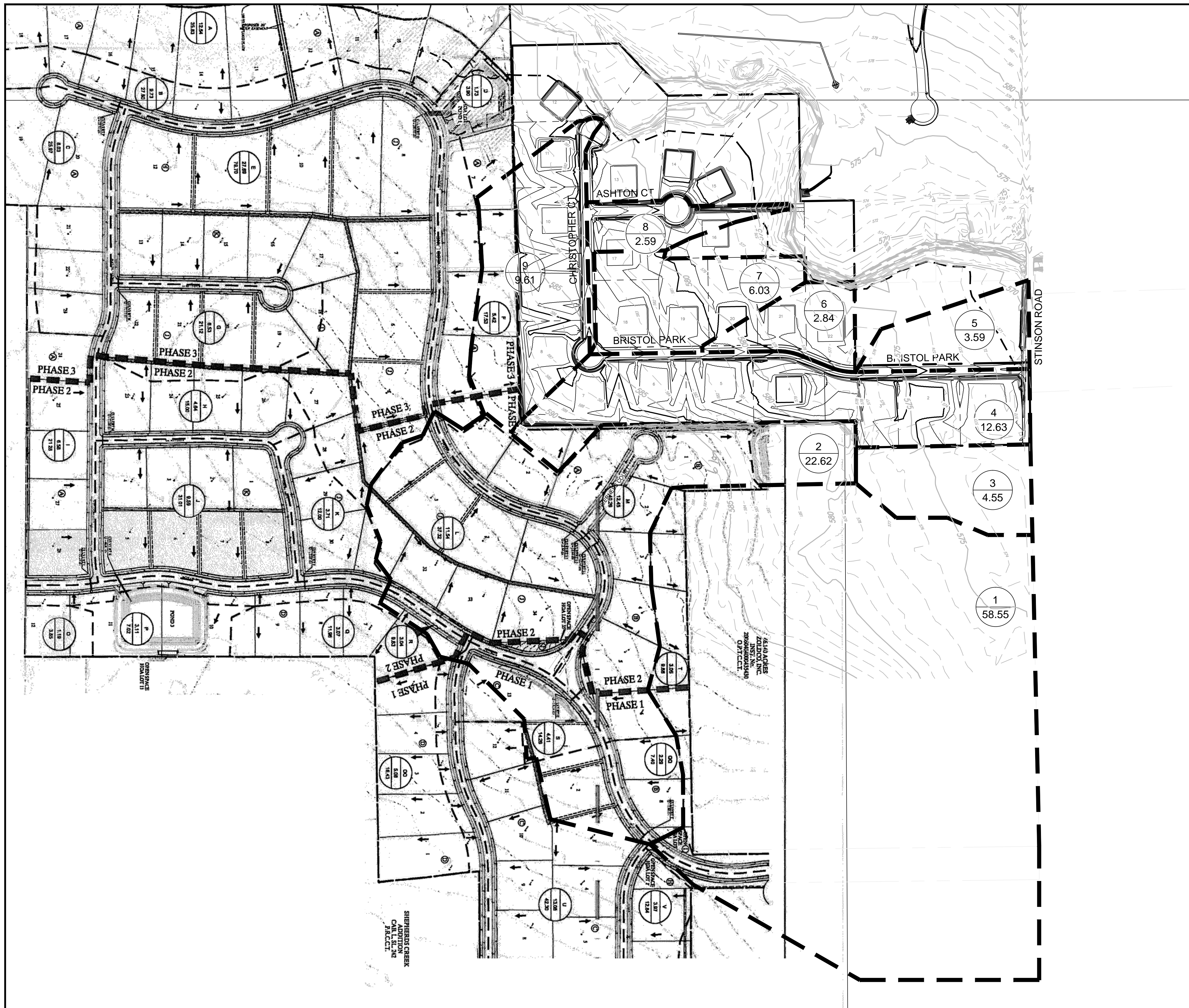
REVISIONS:	
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CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
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**PAVING PLAN & PROFILE**  
**ASHTON CT STA 0+00 TO END**  
**BRISTOL PARK**  
(PHASE II)

**RECORD DRAWINGS**  
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TODD WINTTERS 9-18-15  
DATE



LEGEND:



DRAINAGE CALCULATIONS						
AREA NO.	AREA (ACRES)	C	T <sub>C</sub> (MIN)	I <sub>100</sub> (IN/HR)	Q <sub>100</sub> (CFS)	COMMENTS
1	58.55	0.35	60	4.21	86.27	SOUTH TO EX. 24" RCP UNDER STINSON RD
2	22.62	N/A	N/A	N/A	31.11	RELEASE FROM POND 2
3	4.55	0.35	20	8.3	13.22	TO DITCH ALONG STINSON RD
4	12.63	0.55	15	9.60	66.69	TO DITCH ALONG STINSON RD
4a	12.63	0.55	20	8.3	57.66	(AREA 4) AT 20 MIN. T <sub>c</sub>
5	3.59	0.35	20	8.3	10.43	
6	2.84	0.55	15	9.60	15.00	SWALE ALONG LOT LINE TO MUDDY CREEK
7	6.03	0.55	15	9.60	31.84	
8	2.59	0.55	15	9.60	13.68	
9	9.61	0.55	15	9.60	50.74	

\*NOTE:  
 Q<sub>100</sub> OF 101.99 cfs FLOWING TO 3'x5' BOX CULVERT UNDER SMITHERMAN DRIVE WAS DERIVED BY USING A 20 min. T<sub>C</sub> FOR AREAS 3 & 4 AND ADDING THE ALLOWABLE RELEASE (31.11cfs) FROM "POND 2" PER KIMLEY-HORN AS-BUILT PLANS DATED 4-14-2014.

DRIVEWAY CULVERT TABLE

LOT	Q <sub>25</sub>	SIZE
1	48.6 cfs	2-2'x3' RCB
2	42.2 cfs	2'x4' RCB
3	36.8 cfs	2-24" RCP
4	26.5 cfs	2-24" RCP
5	20.9 cfs	2-21" RCP
6	14.4 cfs	21" RCP
7	1.0 cfs	12" RCP
8	1.0 cfs	12" RCP
9	18.8 cfs	2-18" RCP
10	32.0 cfs	2-2'x3' RCB
11	38.5 cfs	2-2'x3' RCB
12	40.7 cfs	2-2'x3' RCB
13	1.0 cfs	12" RCP
14	3.7 cfs	12" RCP
15	4.8 cfs	18" RCP
16	8.9 cfs	18" RCP
17	3.6 cfs	12" RCP
18	1.0 cfs	12" RCP
19	1.0 cfs	12" RCP
20	1.0 cfs	12" RCP
21	1.0 cfs	12" RCP
22	2.0 cfs	12" RCP

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 201 WINDCO CIR, STE 200, WYLIE, TX 75098  
 972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:  
 05/02/2014 REVISED OFFSITE DRAINAGE AREAS 1, 2, & 3

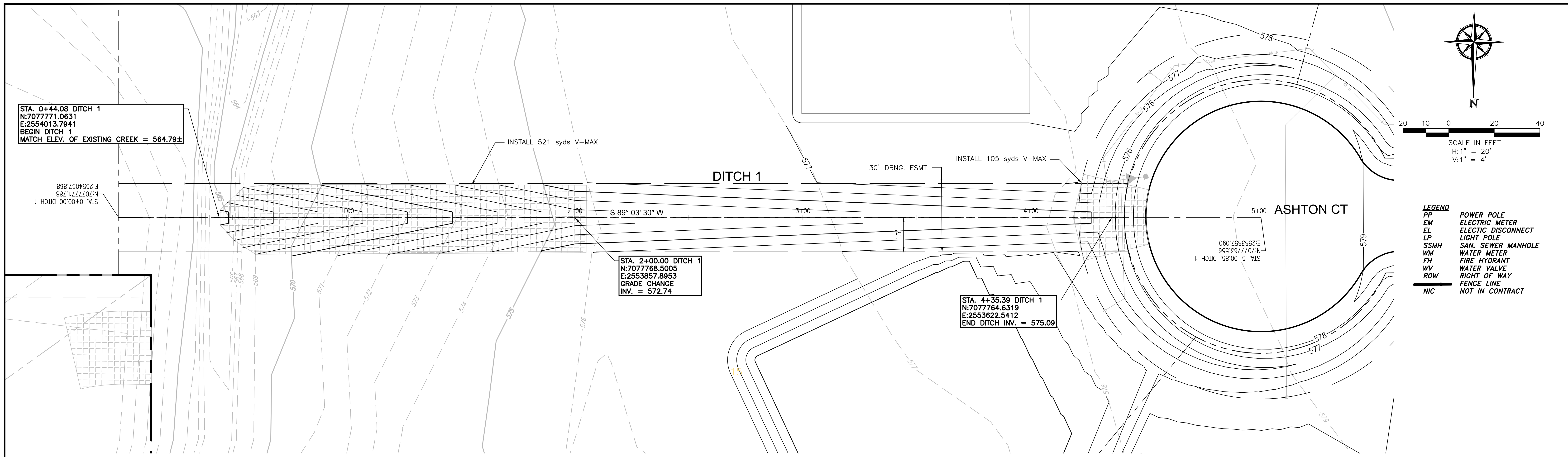
DRAWN: JIM	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE:
PROJECT NO: 8313	
DWG FILE NAME: 10 DRAINAGE AREA MAP.DWG	

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**DRAINAGE AREA MAP**  
**BRISTOL PARK**  
**(PHASE II)**  
 8313

SHEET  
 12  
 OF  
 22

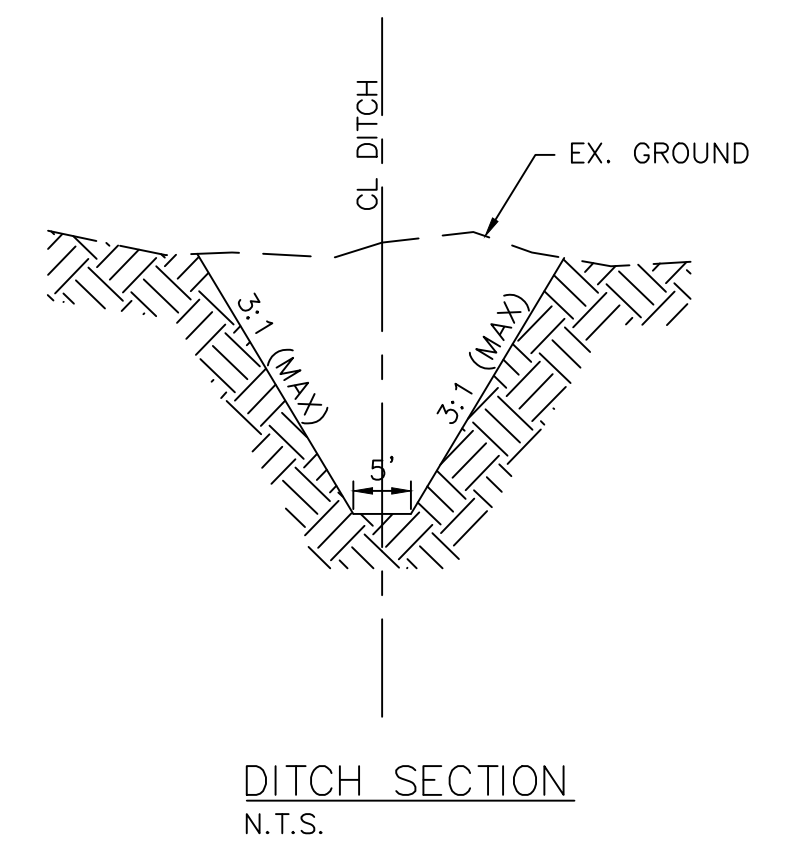
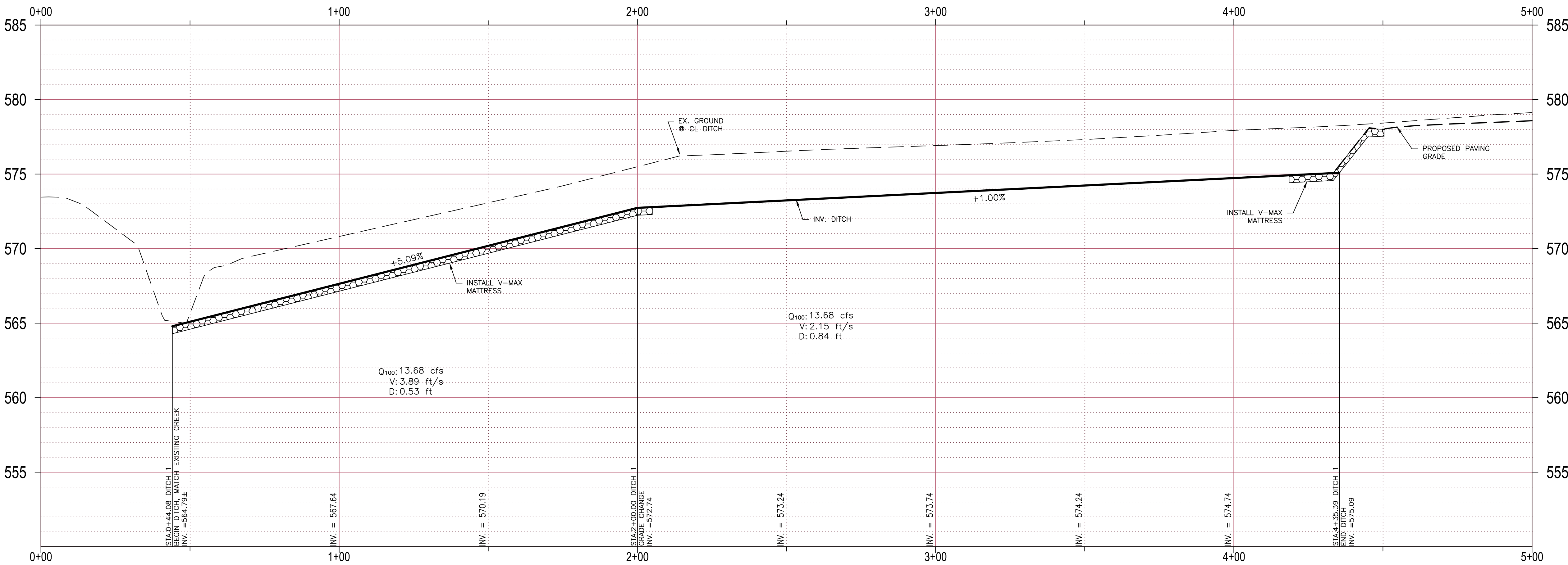


STA. 0+44.08 DITCH 1  
 N:7077771.0631  
 E:2554013.7941  
 BEGIN DITCH 1  
 MATCH ELEV. OF EXISTING CREEK = 564.79±

STA. 2+00.00 DITCH 1  
 N:7077768.5005  
 E:2553857.8953  
 GRADE CHANGE  
 INV. = 572.74

STA. 4+35.39 DITCH 1  
 N:7077764.6319  
 E:2553622.5412  
 END DITCH INV. = 575.09

- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN SEWER MANHOLE
  - WM WATER METER
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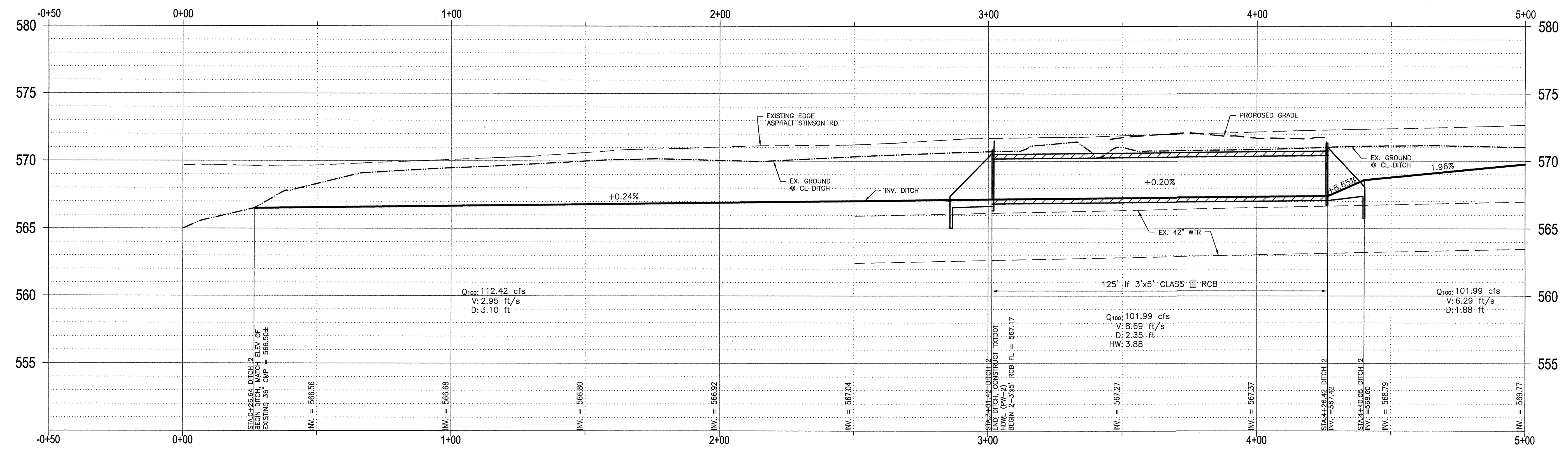
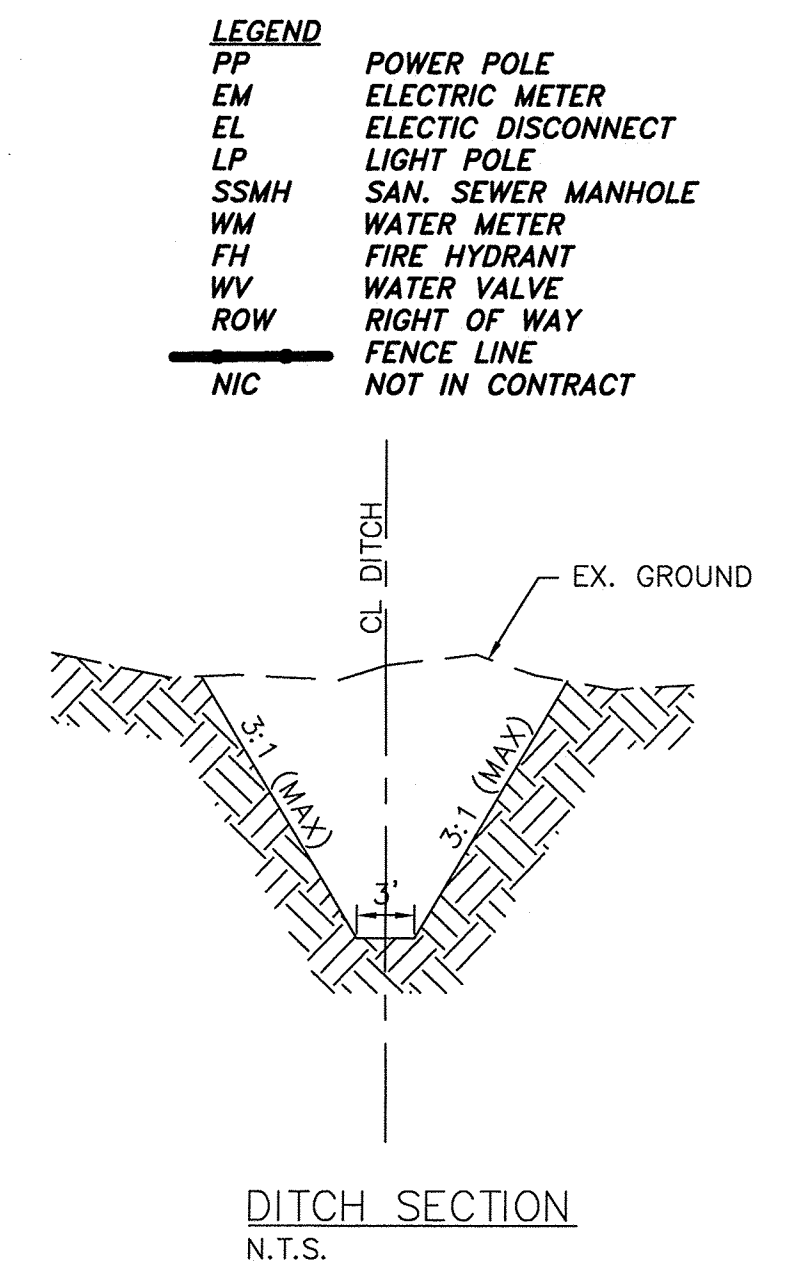
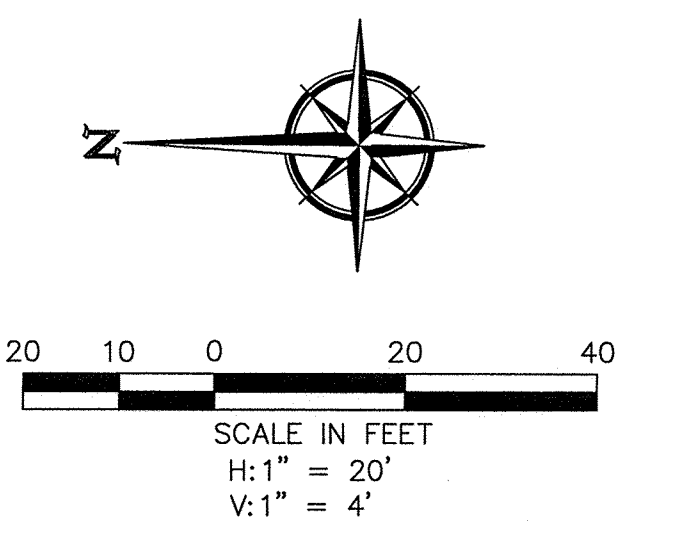
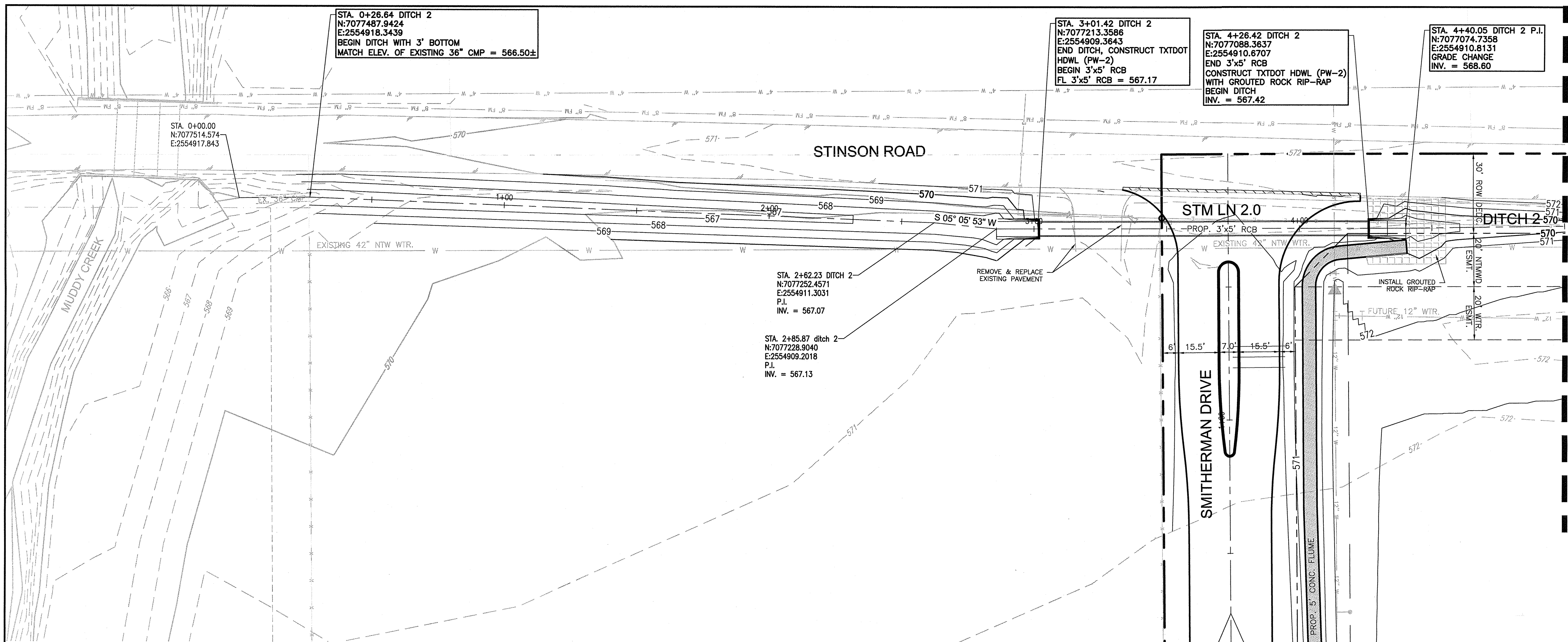
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CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
DWG FILE NAME: DITCH 1.DWG	

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**STORM SEWER PLAN & PROFILE**  
 DITCH 1 STA. 0+00 TO 5+00  
 BRISTOL PARK  
 (PHASE II)

SHEET  
 13  
 OF  
 22



**RECORD DRAWINGS**

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REVISIONS:

05/02/2014	REVISED STM LN 2.0
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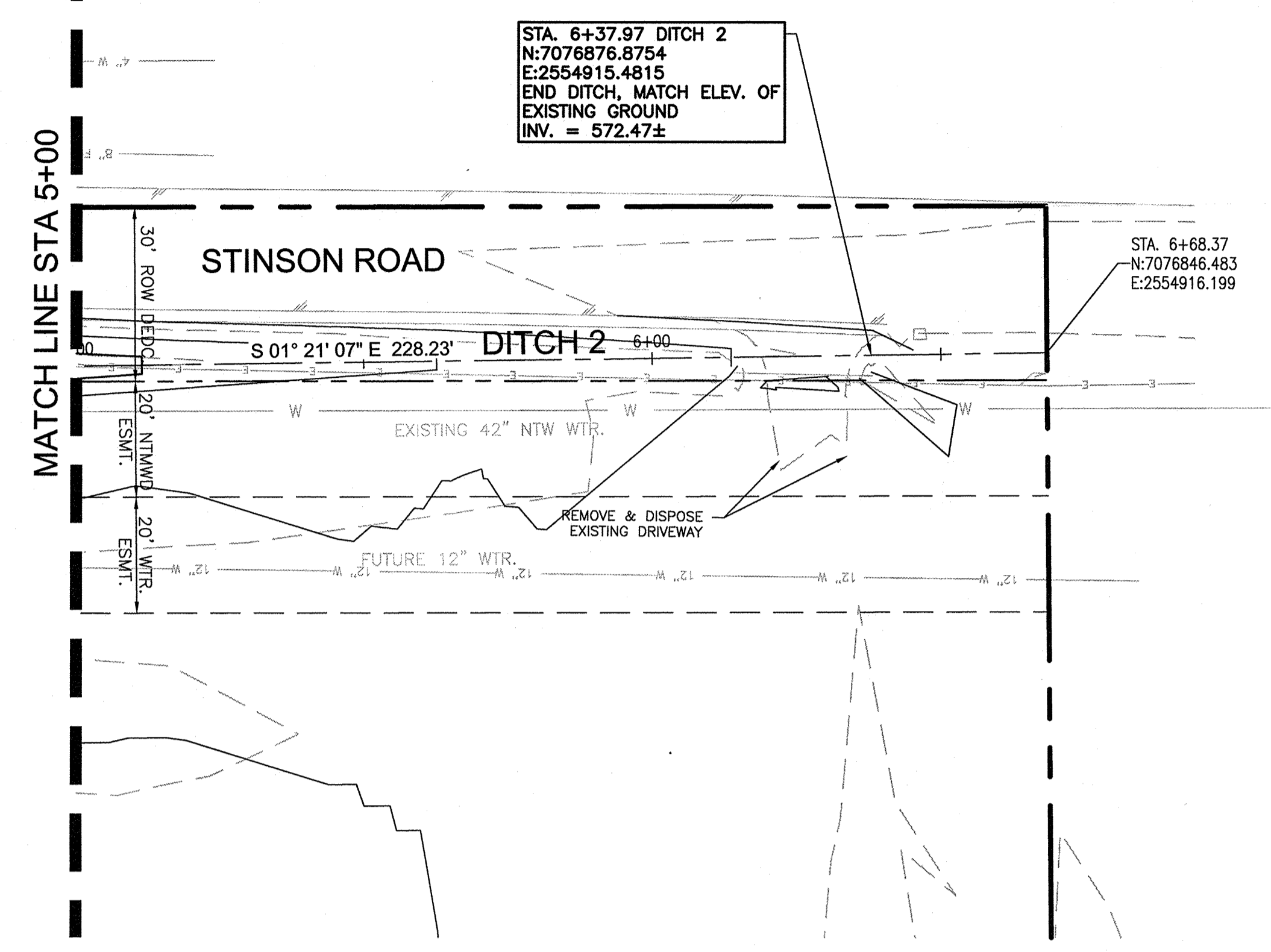
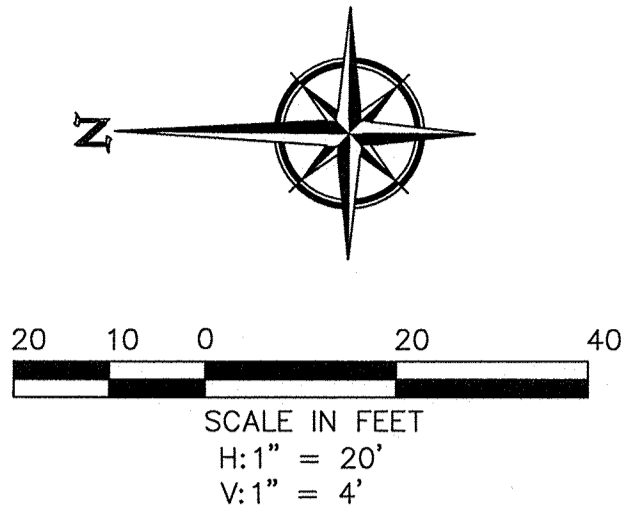
DRAWN: JIM DATE: MAY, 2014  
CHECKED: TW DATE: 7-Jan-15  
PROJECT NO.: 8313  
DWG FILE NAME: DITCH 2.DWG

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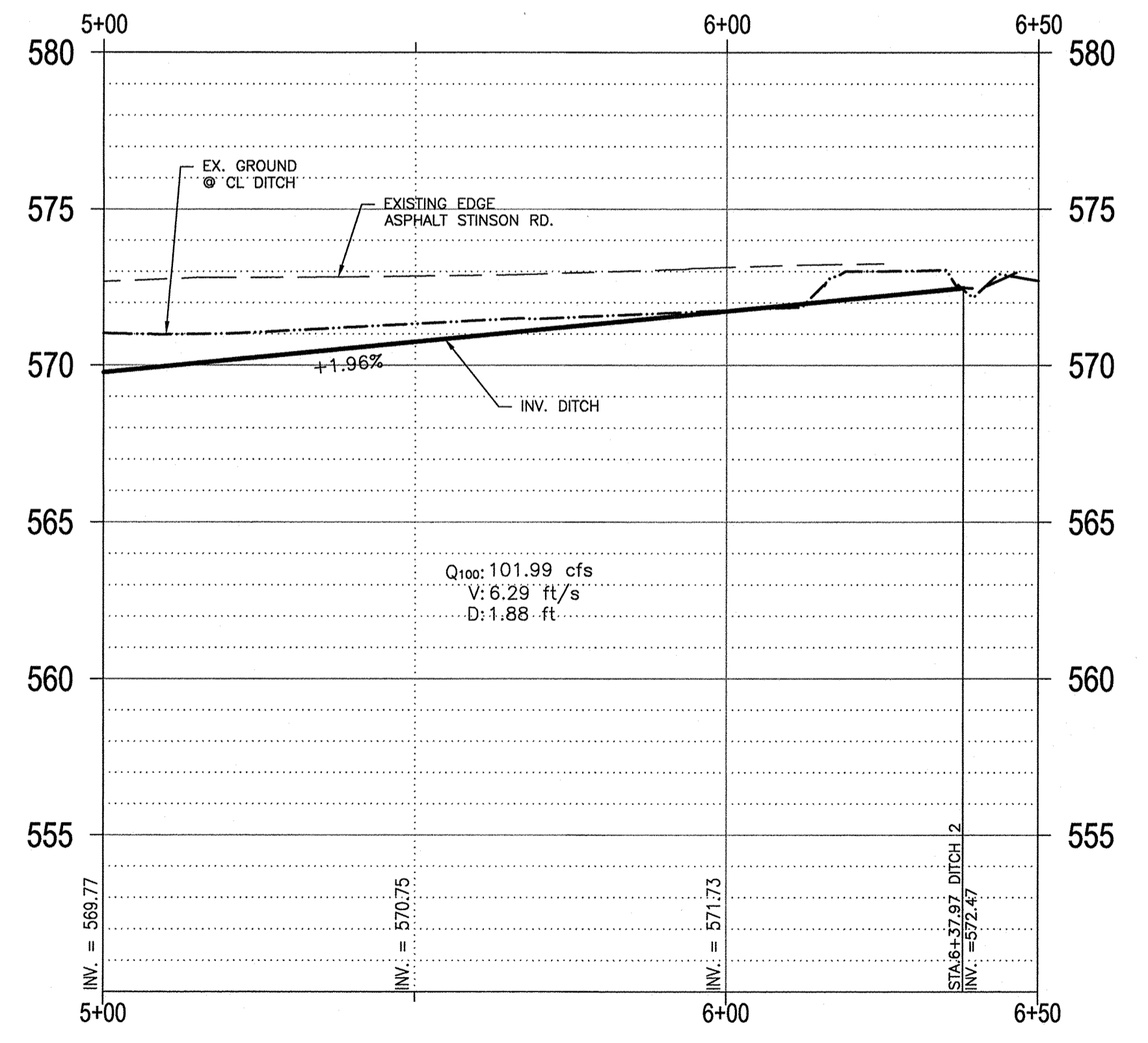
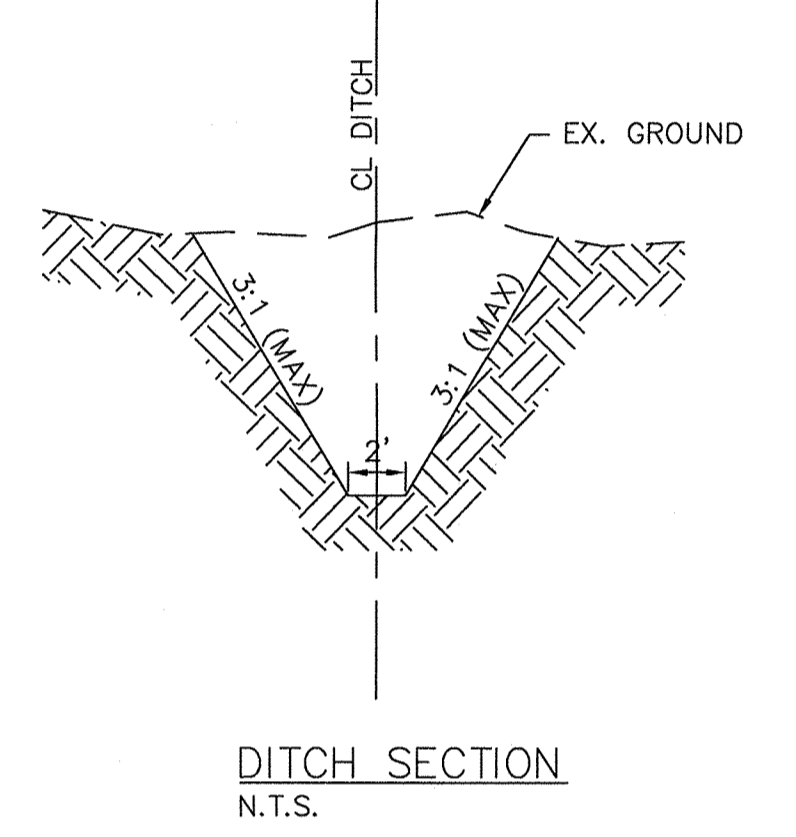


**STORM SEWER PLAN & PROFILE**  
DITCH 2 STA. 0+00 TO 5+00  
OAK BROOK ESTATES  
PHASE II

SHEET  
14  
OF  
22



- LEGEND**
- PP POWER POLE
  - EM ELECTRIC METER
  - EL ELECTRIC DISCONNECT
  - LP LIGHT POLE
  - SSMH SAN. SEWER MANHOLE
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  - FH FIRE HYDRANT
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  - NIC FENCE LINE
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REVISIONS:	
05/02/2014	REVISED Q100
DRAWN: JIM	DATE: MAY, 2014
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**STORM SEWER PLAN & PROFILE**  
**DITCH 2 STA. 5+00 TO END**  
**OAK BROOK ESTATES**  
PHASE II

SHEET  
**15**  
OF  
**22**



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 CONSTRUCTION SERVICES - FIRM REG. #F-001145  
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 972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: JIM	DATE: SEPTEMBER,
CHECKED: TW	DATE: 2015
PROJECT NO: 8313	
DWG FILE NAME: 16A LOT GRADING PLANS.DWG	

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 TODD D. WINTTERS, P.E. 87085

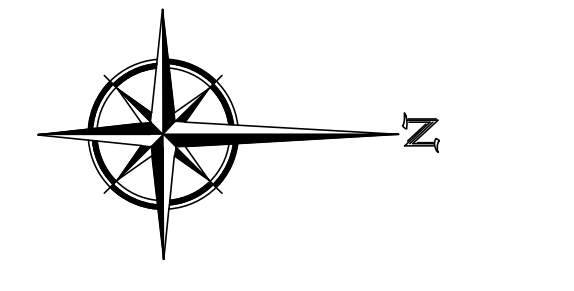


**LOT GRADING PLAN  
 BRISTOL PARK  
 (PHASE II)**

8313

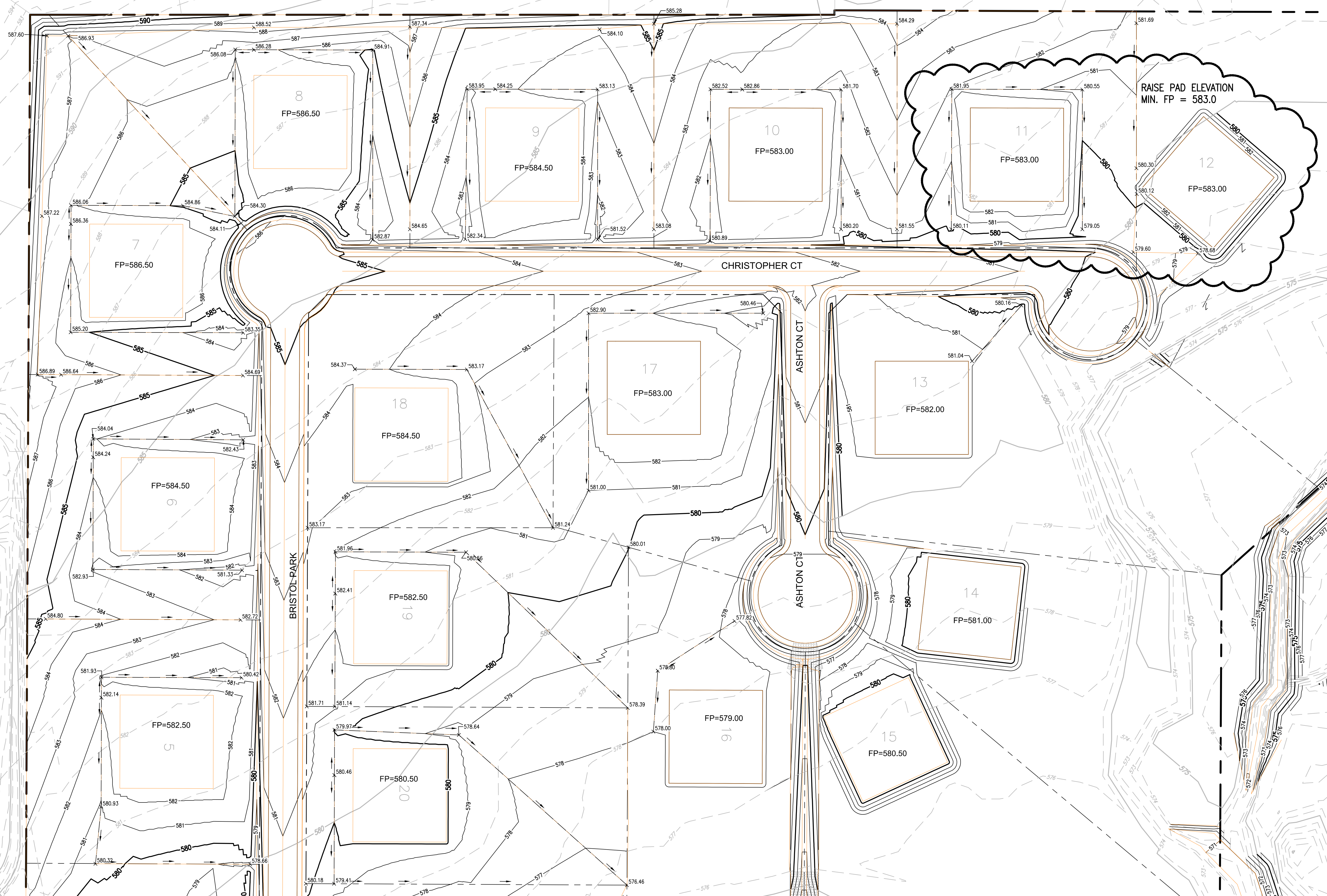
SHEET  
**16A**  
 OF  
**22**





50 25 0 50 100  
SCALE IN FEET  
1" = 50'

RAISE PAD ELEVATION  
MIN. FP = 583.0




**RECORD DRAWINGS**  
To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.  
*Todd Winters* 9-18-16  
TODD WINTTERS DATE

BENCHMARK:  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'  
**ENGINEERING CONCEPTS & DESIGN, L.P.**  
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

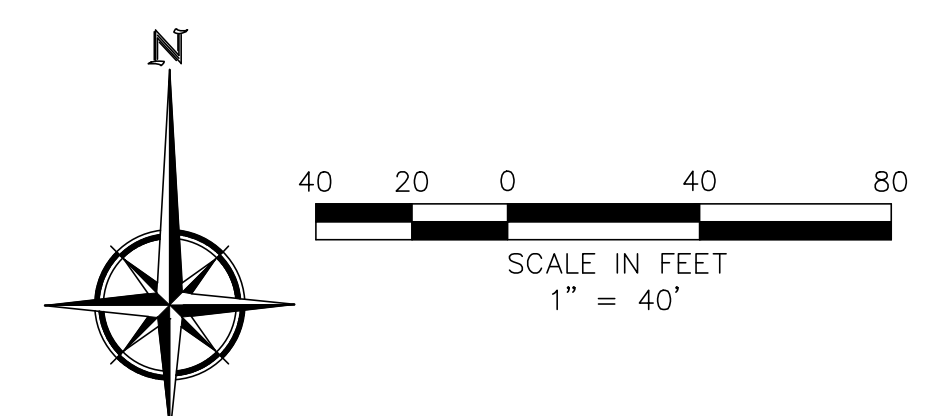
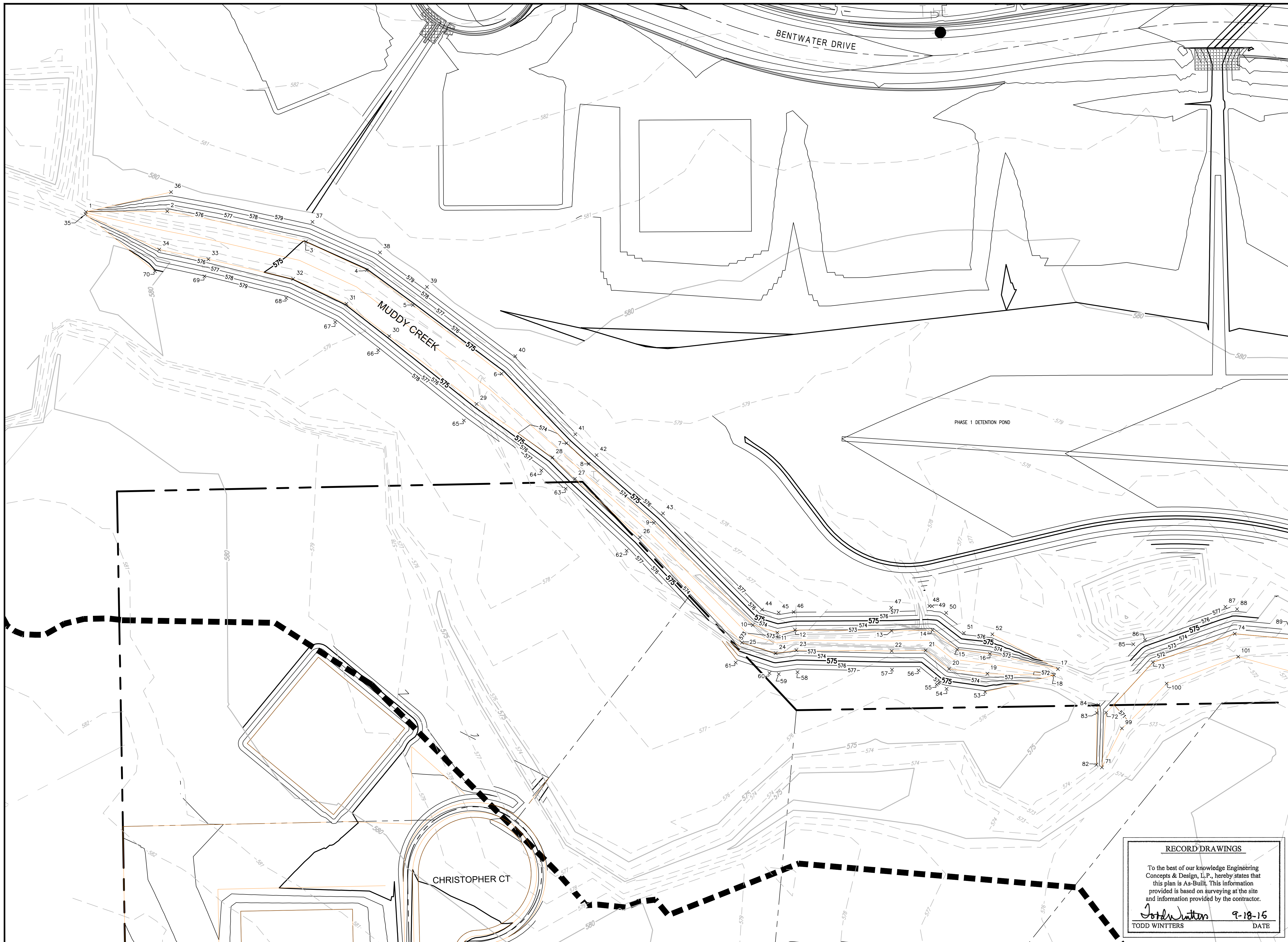
DRAWN: JIM	DATE: SEPTEMBER,
CHECKED: JW	DATE: 2015
PROJECT NO: 8313	
DWG FILE NAME: 16A LOT GRADING PLANS.DWG	

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**LOT GRADING PLAN**  
**BRISTOL PARK**  
**(PHASE II)**  
8313

SHEET  
**16B**  
OF  
**22**



Point Table				
Point #	Description	Elevation	Northing	Easting
1	TOE SLOPE	575.749	7078654.2851	2552889.9629
2	TOE SLOPE	575.433	7078654.8365	2552962.6314
3	TOE SLOPE	574.992	7078627.5698	2553086.6457
4	TOE SLOPE	574.783	7078602.2690	2553140.9751
5	TOE SLOPE	574.603	7078571.0182	2553182.3479
6	TOE SLOPE	574.254	7078509.5548	2553261.6226
7	TOE SLOPE	573.959	7078447.4257	2553319.6395
8	TOE SLOPE	573.864	7078428.8199	2553339.3985
9	TOE SLOPE	573.591	7078376.2562	2553397.8290
10	TOE SLOPE	573.149	7078284.9829	2553486.3433
11	TOE SLOPE	573.069	7078278.0812	2553508.2091
12	TOE SLOPE	573.014	7078280.4111	2553523.9314
13	TOE SLOPE	572.714	7078279.6797	2553610.3938
14	TOE SLOPE	572.587	7078280.3138	2553646.9486
15	TOE SLOPE	572.489	7078262.8659	2553668.9944
16	TOE SLOPE	572.386	7078259.1918	2553698.3042
17	TOE SLOPE	572.169	7078245.5190	2553759.1452
18	TOE SLOPE	571.932	7078239.9050	2553755.6754
19	TOE SLOPE	572.152	7078241.3315	2553696.0653
20	TOE SLOPE	572.279	7078245.6311	2553661.7665
21	TOE SLOPE	572.377	7078262.2048	2553640.8252
22	TOE SLOPE	572.489	7078261.6783	2553610.4737
23	TOE SLOPE	572.803	7078262.3998	2553525.1822
24	TOE SLOPE	572.872	7078259.6677	2553506.7456
25	TOE SLOPE	572.989	7078269.1868	2553476.5879
26	TOE SLOPE	573.471	7078363.2846	2553385.3345
27	TOE SLOPE	573.759	7078415.5761	2553327.2065
28	TOE SLOPE	573.862	7078434.7558	2553307.1050
29	TOE SLOPE	574.167	7078482.5374	2553239.3479
30	TOE SLOPE	574.532	7078543.2229	2553161.0766
31	TOE SLOPE	574.708	7078572.1060	2553122.8384
32	TOE SLOPE	574.902	7078594.3034	2553075.1728
33	TOE SLOPE	575.189	7078611.9249	2552999.3614
34	TOE SLOPE	575.354	7078620.5863	2552955.4110
35	TOE SLOPE	575.623	7078652.2792	2552889.4480
36	TOP SLOPE	579.805	7078671.9930	2552966.0125
37	TOP SLOPE	579.668	7078645.3409	2553092.4883
38	TOP SLOPE	579.725	7078618.0420	2553152.8892
39	TOP SLOPE	579.713	7078587.1722	2553194.8725
40	TOP SLOPE	579.238	7078525.3075	2553273.8361
41	TOP SLOPE	576.770	7078455.4730	2553327.4988
42	TOP SLOPE	576.552	7078436.8116	2553346.5879
43	TOP SLOPE	576.527	7078384.7049	2553405.9754
44	TOP SLOPE	577.003	7078298.6250	2553494.5085
45	TOP SLOPE	577.455	7078296.0431	2553509.3856
46	TOP SLOPE	577.050	7078296.4705	2553522.8156
47	TOP SLOPE	577.870	7078300.3023	2553610.0360
48	TOP SLOPE	578.000	7078301.8877	2553644.1192
49	TOP SLOPE	577.946	7078301.7470	2553646.5768
50	TOP SLOPE	577.521	7078295.7916	2553659.1984
51	TOP SLOPE	576.355	7078277.7574	2553674.9976
52	TOP SLOPE	576.770	7078276.5912	2553700.4853
53	TOP SLOPE	576.253	7078225.0548	2553694.0249
54	TOP SLOPE	576.770	7078227.8062	2553659.5320
55	TOP SLOPE	576.743	7078231.6307	2553650.6860
56	TOP SLOPE	576.819	7078244.4229	2553634.5189
57	TOP SLOPE	576.676	7078244.9350	2553610.7642
58	TOP SLOPE	577.709	7078242.7507	2553526.2560
59	TOP SLOPE	577.588	7078241.0059	2553509.5111
60	TOP SLOPE	577.535	7078241.8820	2553501.1317
61	TOP SLOPE	577.686	7078251.2698	2553470.9326
62	TOP SLOPE	577.688	7078351.3040	2553373.4493
63	TOP SLOPE	576.785	7078406.8211	2553318.8528
64	TOP SLOPE	577.687	7078423.0484	2553297.1878
65	TOP SLOPE	578.853	7078467.7236	2553227.8624
66	TOP SLOPE	578.516	7078530.6271	2553151.3108
67	TOP SLOPE	579.476	7078555.7529	2553112.8022
68	TOP SLOPE	579.413	7078577.2450	2553069.0071
69	TOP SLOPE	579.110	7078596.6381	2552995.8431
70	TOP SLOPE	580.254	7078601.3532	2552951.6207

**RECORD DRAWINGS**

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-15  
 TODD WINTERS DATE

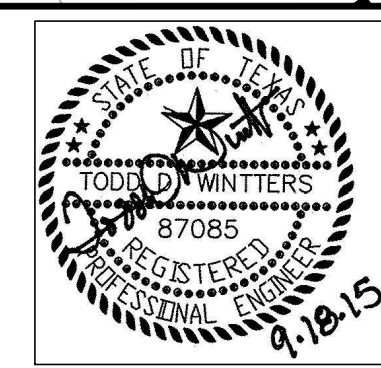
BENCHMARK:  
 An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
 Elevation 569.65'

**ENGINEERINGCONCEPTS & DESIGN, L.P.**

ENGINEERING / PROJECT MANAGEMENT /  
 CONSTRUCTION SERVICES - FIRM REG. #F-001145  
 201 WINDCO CIR, STE 200, WYLIE, TX 75098  
 972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: JOE	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE:
PROJECT NO.: 8313	
DWG FILE NAME: CHANNEL IMPROVEMENTS.DWG	

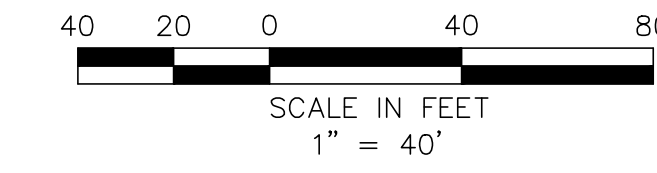
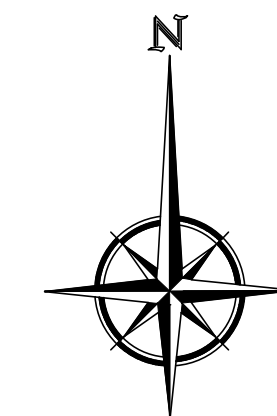
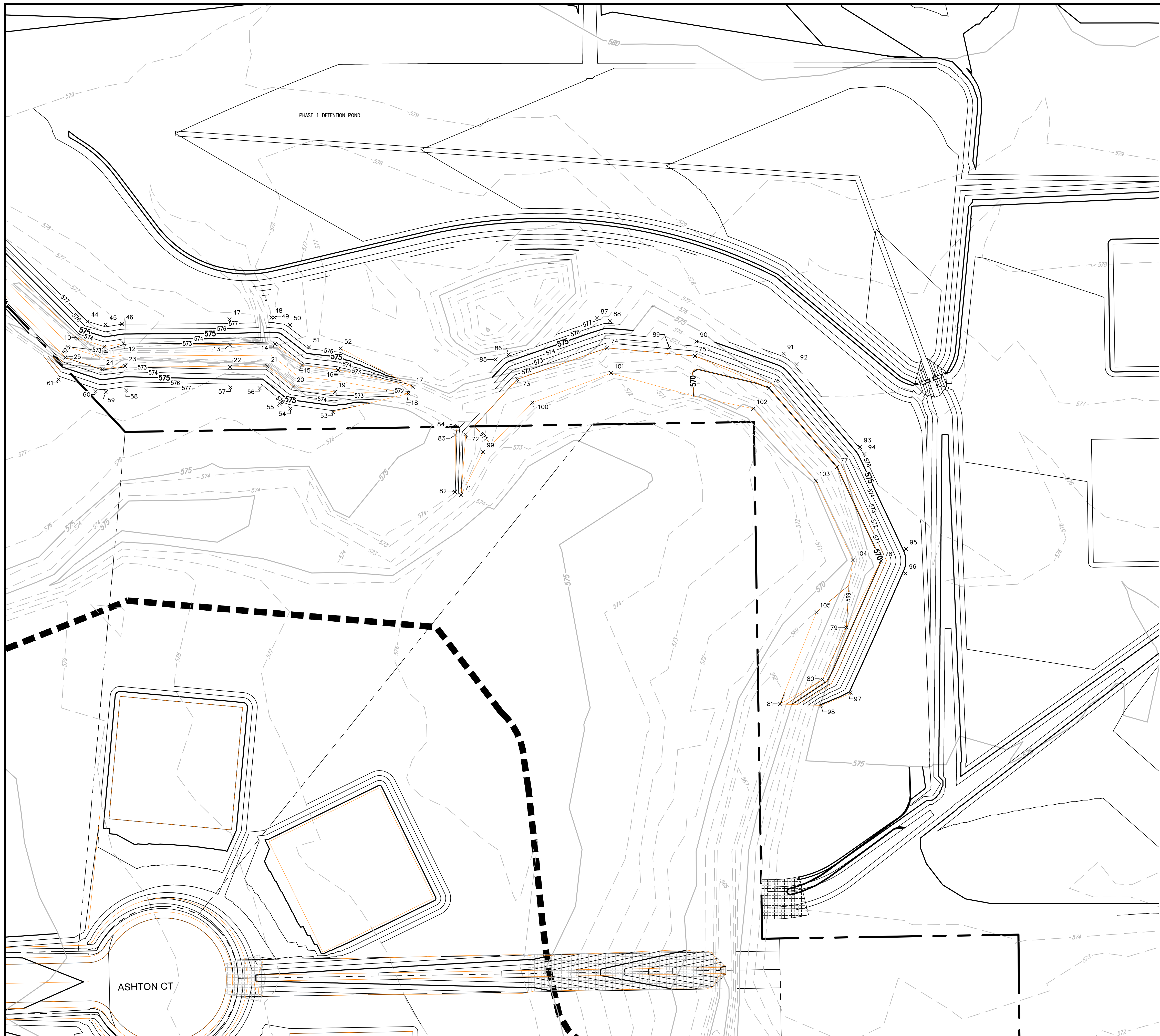
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 TODD D. WINTERS, P.E. 87085



**CHANNEL IMPROVEMENTS SECTION 1  
 BRISTOL PARK  
 (PHASE II)**

8313

SHEET  
**16C**  
 OF  
**22**



Point Table				
Point #	Description	Elevation	Northing	Easting
71	TOE SLOPE	572.040	7078157.5662	2553798.4523
72	TOE SLOPE	571.104	7078206.6022	2553802.2069
73	TOE SLOPE	571.000	7078251.5297	2553844.0941
74	TOE SLOPE	571.000	7078277.0702	2553917.2994
75	TOE SLOPE	571.000	7078270.4687	2553988.6299
76	TOE SLOPE	570.000	7078244.5902	2554048.7332
77	TOE SLOPE	569.999	7078180.1463	2554103.9010
78	TOE SLOPE	570.000	7078103.9826	2554140.0715
79	TOE SLOPE	569.000	7078049.7516	2554111.7595
80	TOE SLOPE	569.000	7078007.3048	2554092.3947
81	TOE SLOPE	567.857	7077987.4482	2554057.6107
82	TOP SLOPE	574.069	7078159.8667	2553793.4923
83	TOP SLOPE	574.501	7078206.2748	2553793.8294
84	TOP SLOPE	573.523	7078213.4369	2553795.3592
85	TOP SLOPE	576.971	7078267.7018	2553826.5178
86	TOP SLOPE	576.364	7078271.7886	2553837.0260
87	TOP SLOPE	577.372	7078301.1370	2553908.9028
88	TOP SLOPE	576.517	7078299.0459	2553919.3332
89	TOP SLOPE	572.208	7078277.2487	2553967.8025
90	TOP SLOPE	573.959	7078282.2529	2553989.7205
91	TOP SLOPE	577.529	7078272.2519	2554060.6434
92	TOP SLOPE	577.413	7078263.9271	2554071.2127
93	TOP SLOPE	576.214	7078196.4509	2554122.9291
94	TOP SLOPE	576.187	7078190.8032	2554126.4669
95	TOP SLOPE	575.581	7078113.5089	2554160.2593
96	TOP SLOPE	575.540	7078093.7278	2554159.7143
97	TOP SLOPE	575.283	7077996.8737	2554115.2592
98	TOP SLOPE	575.301	7077986.3075	2554091.1628
99	TOE SLOPE	571.104	7078192.4735	2553816.3625
100	TOE SLOPE	570.466	7078232.5385	2553856.3514
101	TOE SLOPE	570.925	7078256.5321	2553920.3873
102	TOE SLOPE	569.832	7078227.6188	2554036.1006
103	TOE SLOPE	569.911	7078169.0379	2554086.8560
104	TOE SLOPE	569.833	7078104.3539	2554117.1069
105	TOE SLOPE	569.000	7078062.2216	2554087.4879

BENCHMARK:  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'

**ENGINEERINGCONCEPTS & DESIGN, L.P.**  
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: JOE	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE:
PROJECT NO: 8313	
DWG FILE NAME: CHANNEL IMPROVEMENTS.DWG	

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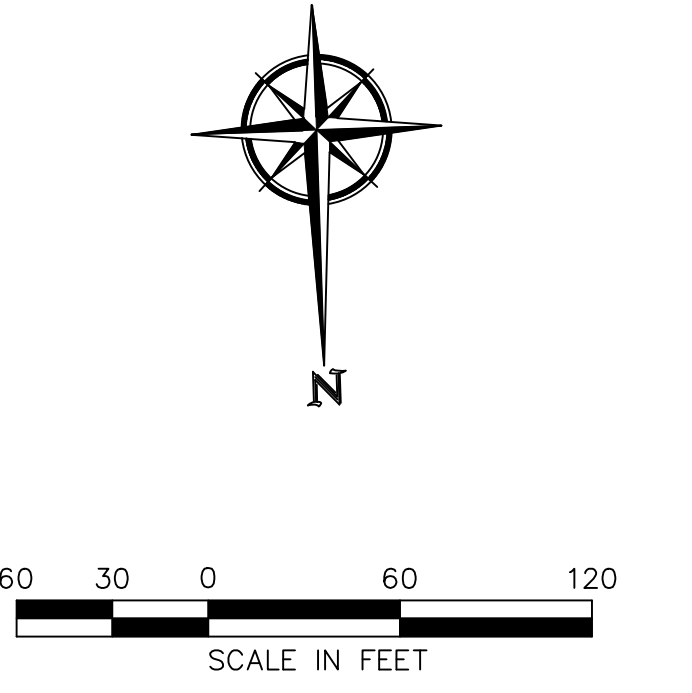
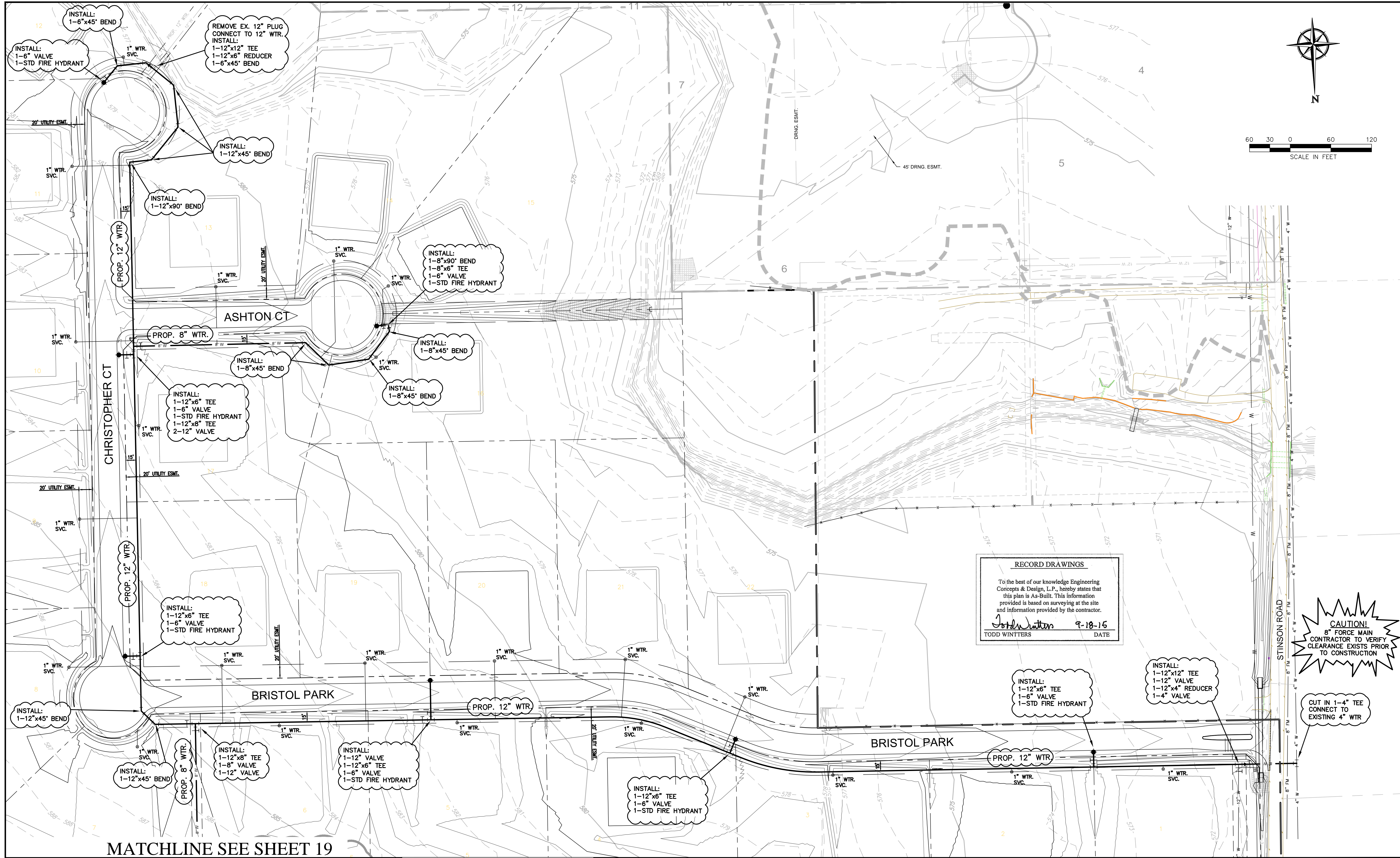


**CHANNEL IMPROVEMENTS SECTION 2  
BRISTOL PARK  
(PHASE II)**

8313

**RECORD DRAWINGS**  
To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.  
*Todd Winters* 9-18-15  
TODD WINTTERS DATE

SHEET  
17  
OF  
22



**RECORD DRAWINGS**  
 To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.  
*Todd Winters* 9-18-16  
 TODD WINTTERS DATE

**CAUTION!**  
 8" FORCE MAIN CONTRACTOR TO VERIFY CLEARANCE EXISTS PRIOR TO CONSTRUCTION

CUT IN 1-4" TEE CONNECT TO EXISTING 4" WTR

MATCHLINE SEE SHEET 19

BENCHMARK:  
 An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
 Elevation 569.65'

**ENGINEERINGCONCEPTS**  
 & DESIGN, L.P.  
 ENGINEERING / PROJECT MANAGEMENT /  
 CONSTRUCTION SERVICES - FIRM REG. #F-001145  
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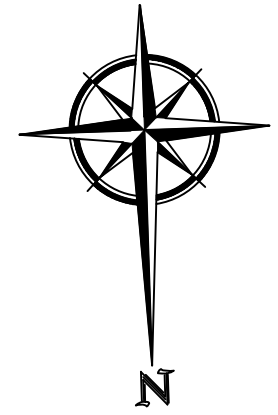
REVISIONS:	
DRAWN: JOE	DATE: September 18, 2015
CHECKED: JW	DATE: 21-Sep-15
PROJECT NO: 8313	
DWG FILE NAME: 18 WATER PLAN.DWG	

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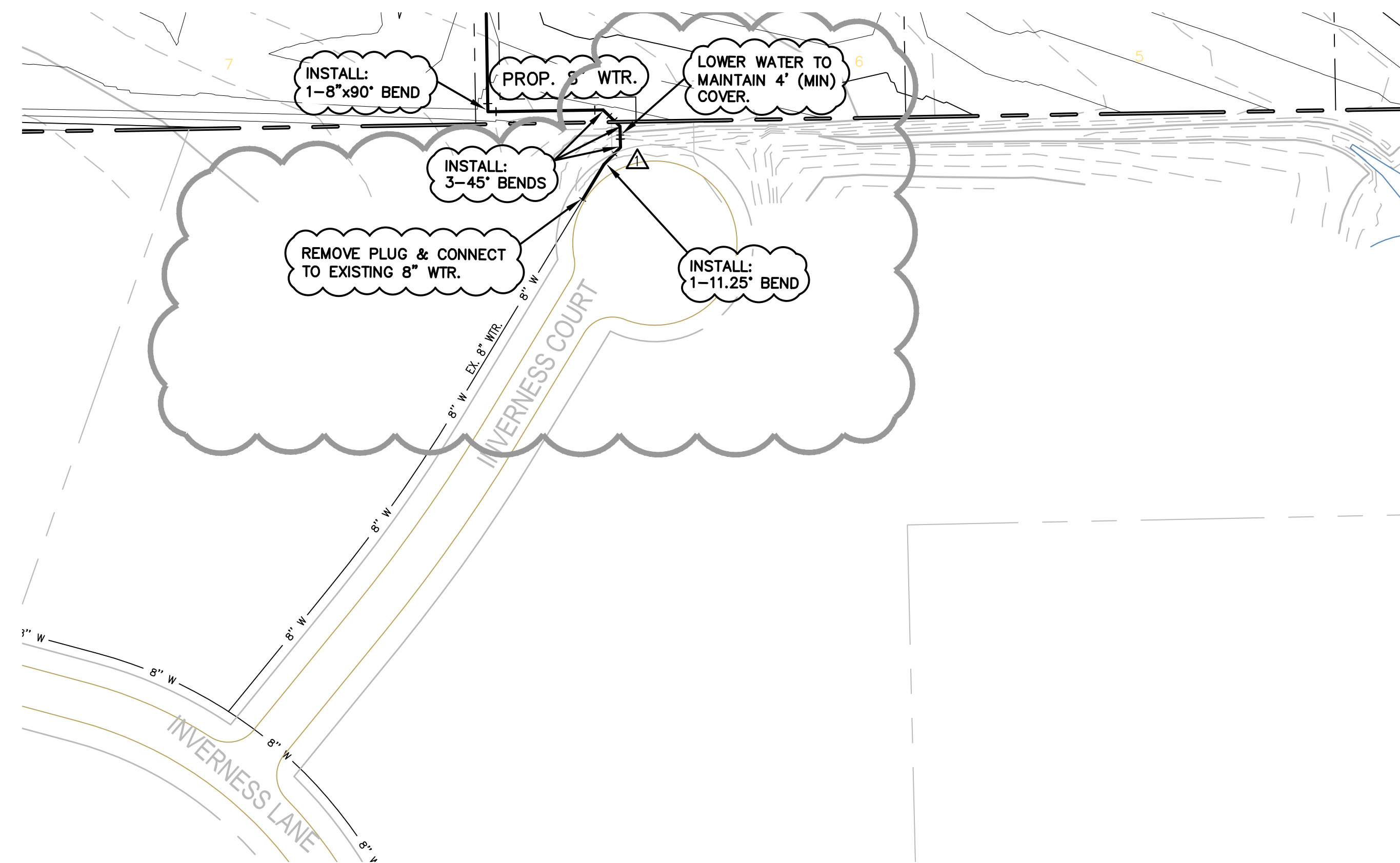


**WATER PLAN**  
**BRISTOL PARK**  
**(PHASE II)**  
 8313

SHEET  
 18  
 OF  
 22



MATCHLINE SEE SHEET 18



**RECORD DRAWINGS**

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-16  
TODD WINTTERS DATE

BENCHMARK:  
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Elevation 569.65'

**ENGINEERINGCONCEPTS**  
& DESIGN, L.P.

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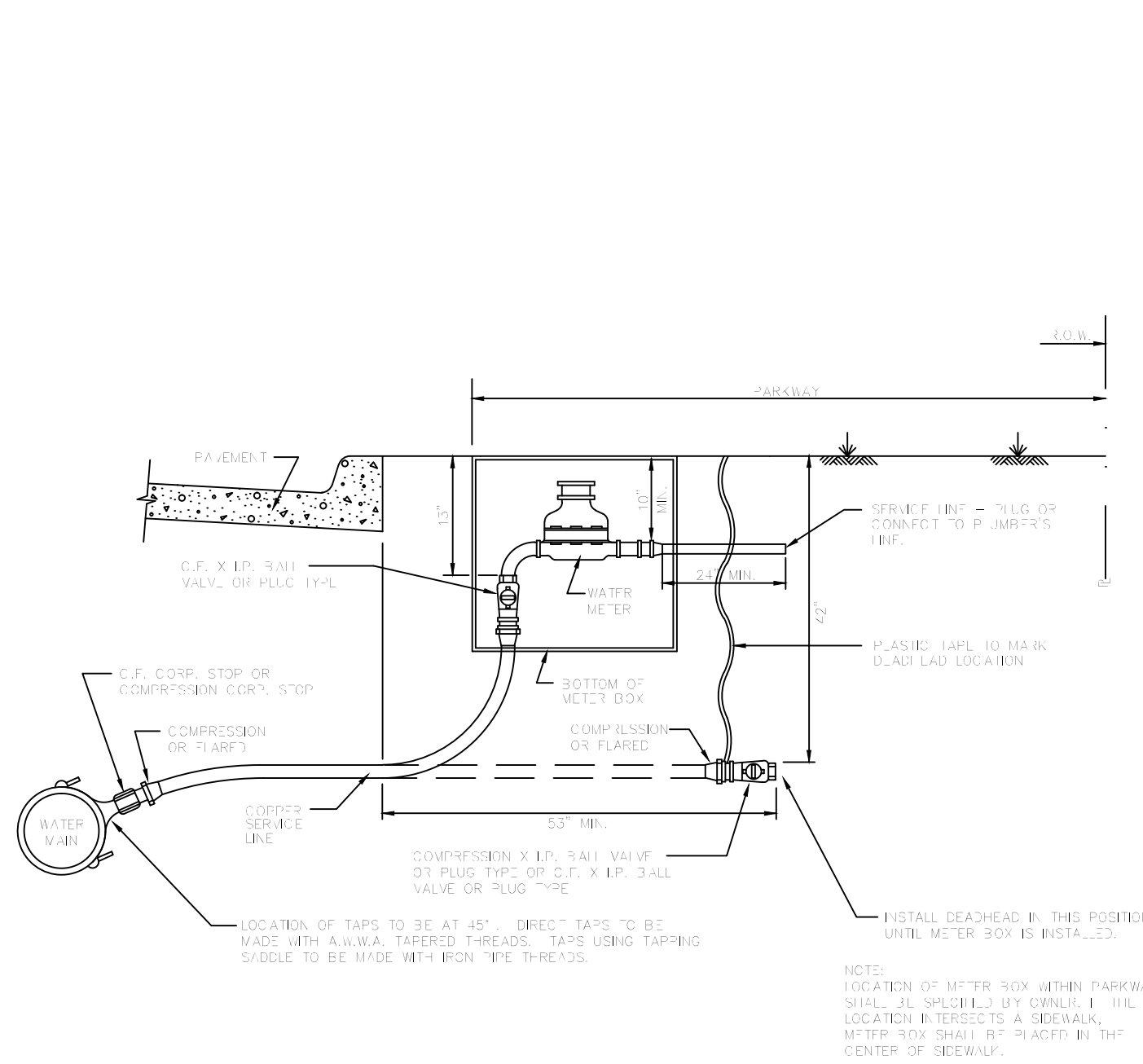
REVISIONS:	
△	5/06/14 LOOPED 8" WTR TO INVERNESS COURT
DRAWN: JOE	DATE: SEPTEMBER, 2015
CHECKED: TW	DATE: 21-Sep-15
PROJECT NO: 8313	
DWG FILE NAME: 18 WATER PLAN.DWG	

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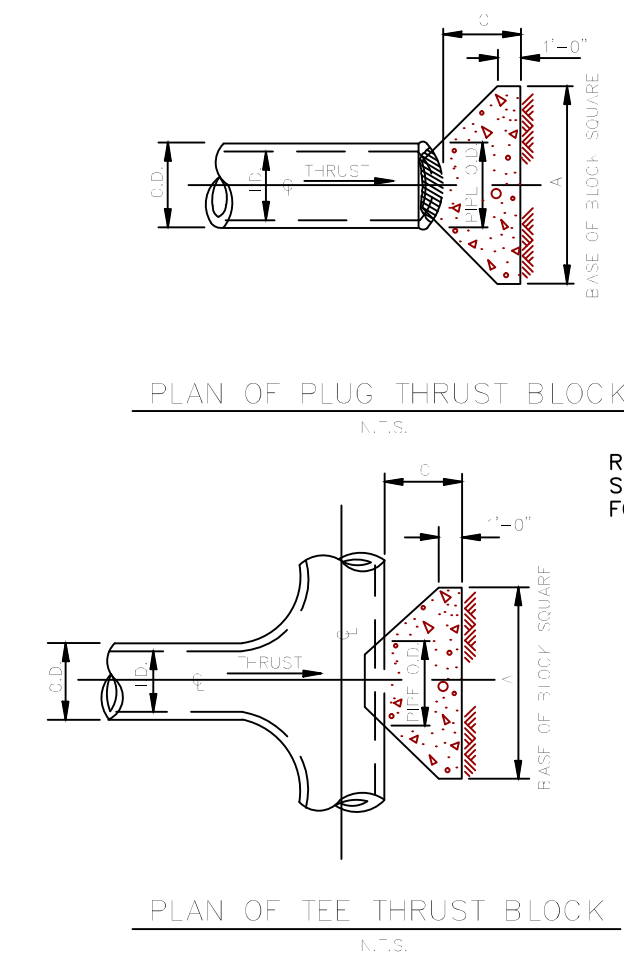


**WATER PLAN**  
**BRISTOL PARK**  
**(PHASE II)**  
8313

SHEET  
**19**  
OF  
**22**



WATER SERVICE INSTALLATION  
3/4" OR 1" LINE



TD (IN.)	1 (IN.)	2 (IN.)	3 (IN.)	4 (IN.)	5 (IN.)	6 (IN.)
10.0	1.0	2.0	3.0	4.0	5.0	6.0
11.0	1.1	2.2	3.3	4.4	5.5	6.6
12.0	1.2	2.4	3.6	4.8	6.0	7.2
13.0	1.3	2.6	3.9	5.2	6.5	7.8
14.0	1.4	2.8	4.2	5.6	7.0	8.4
15.0	1.5	3.0	4.5	6.0	7.5	9.0
16.0	1.6	3.2	4.8	6.4	8.0	9.6
17.0	1.7	3.4	5.1	6.8	8.5	10.2
18.0	1.8	3.6	5.4	7.2	9.0	10.8
19.0	1.9	3.8	5.7	7.6	9.5	11.4
20.0	2.0	4.0	6.0	8.0	10.0	12.0

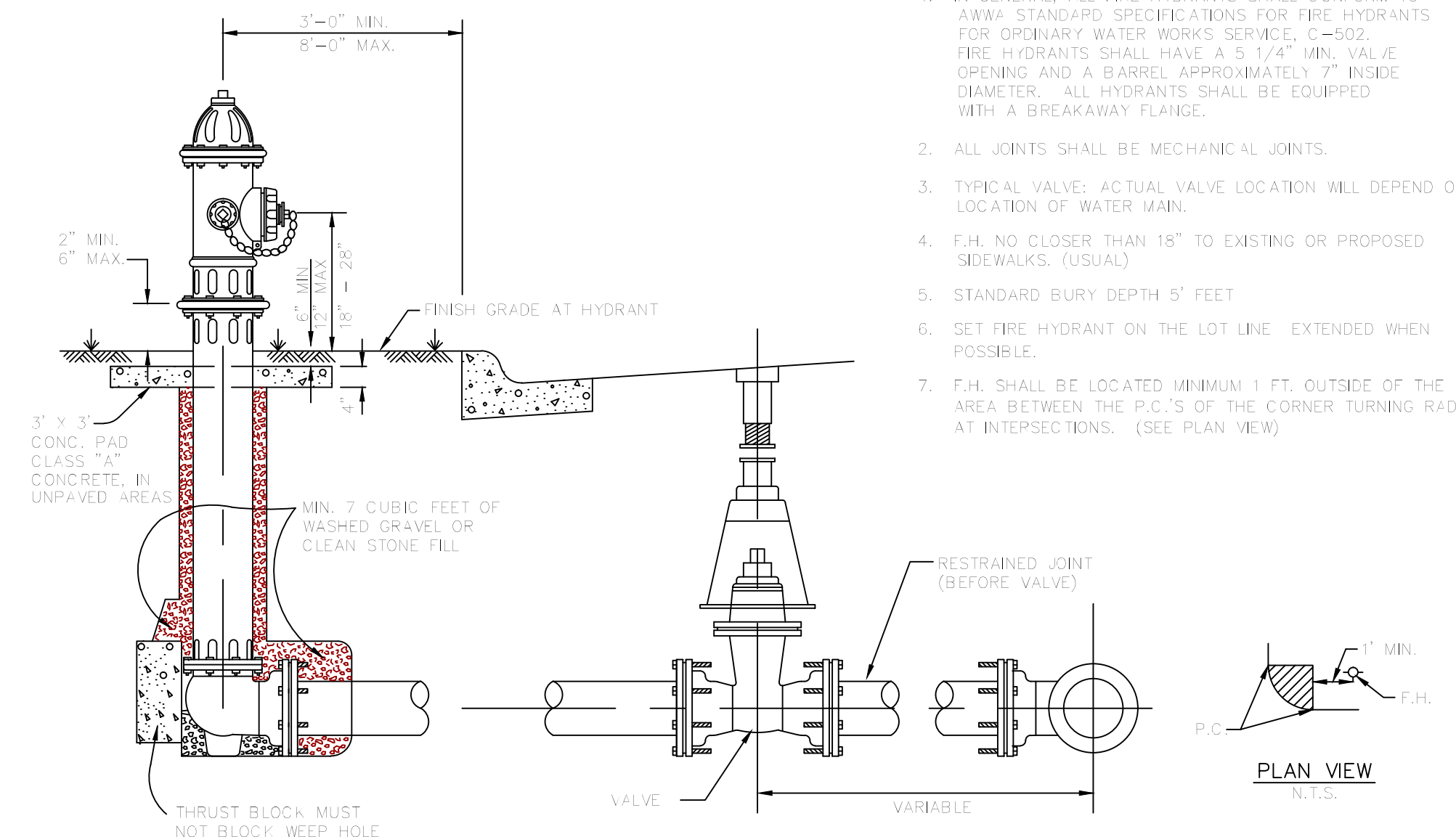
TD (IN.)	1 (IN.)	2 (IN.)	3 (IN.)	4 (IN.)	5 (IN.)	6 (IN.)
10.0	1.0	2.0	3.0	4.0	5.0	6.0
11.0	1.1	2.2	3.3	4.4	5.5	6.6
12.0	1.2	2.4	3.6	4.8	6.0	7.2
13.0	1.3	2.6	3.9	5.2	6.5	7.8
14.0	1.4	2.8	4.2	5.6	7.0	8.4
15.0	1.5	3.0	4.5	6.0	7.5	9.0
16.0	1.6	3.2	4.8	6.4	8.0	9.6
17.0	1.7	3.4	5.1	6.8	8.5	10.2
18.0	1.8	3.6	5.4	7.2	9.0	10.8
19.0	1.9	3.8	5.7	7.6	9.5	11.4
20.0	2.0	4.0	6.0	8.0	10.0	12.0

TD (IN.)	1 (IN.)	2 (IN.)	3 (IN.)	4 (IN.)	5 (IN.)	6 (IN.)
10.0	1.0	2.0	3.0	4.0	5.0	6.0
11.0	1.1	2.2	3.3	4.4	5.5	6.6
12.0	1.2	2.4	3.6	4.8	6.0	7.2
13.0	1.3	2.6	3.9	5.2	6.5	7.8
14.0	1.4	2.8	4.2	5.6	7.0	8.4
15.0	1.5	3.0	4.5	6.0	7.5	9.0
16.0	1.6	3.2	4.8	6.4	8.0	9.6
17.0	1.7	3.4	5.1	6.8	8.5	10.2
18.0	1.8	3.6	5.4	7.2	9.0	10.8
19.0	1.9	3.8	5.7	7.6	9.5	11.4
20.0	2.0	4.0	6.0	8.0	10.0	12.0

TD (IN.)	1 (IN.)	2 (IN.)	3 (IN.)	4 (IN.)	5 (IN.)	6 (IN.)
10.0	1.0	2.0	3.0	4.0	5.0	6.0
11.0	1.1	2.2	3.3	4.4	5.5	6.6
12.0	1.2	2.4	3.6	4.8	6.0	7.2
13.0	1.3	2.6	3.9	5.2	6.5	7.8
14.0	1.4	2.8	4.2	5.6	7.0	8.4
15.0	1.5	3.0	4.5	6.0	7.5	9.0
16.0	1.6	3.2	4.8	6.4	8.0	9.6
17.0	1.7	3.4	5.1	6.8	8.5	10.2
18.0	1.8	3.6	5.4	7.2	9.0	10.8
19.0	1.9	3.8	5.7	7.6	9.5	11.4
20.0	2.0	4.0	6.0	8.0	10.0	12.0

TABLES OF DIMENSIONS AND QUANTITIES

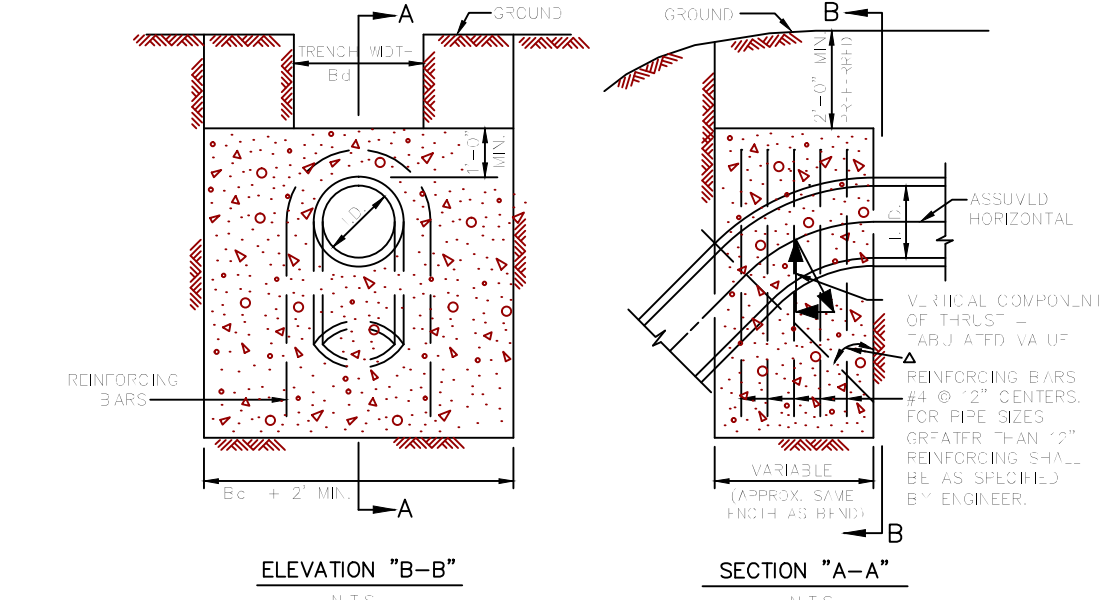
TABLES OF DIMENSIONS AND QUANTITIES



FIRE HYDRANT INSTALLATION

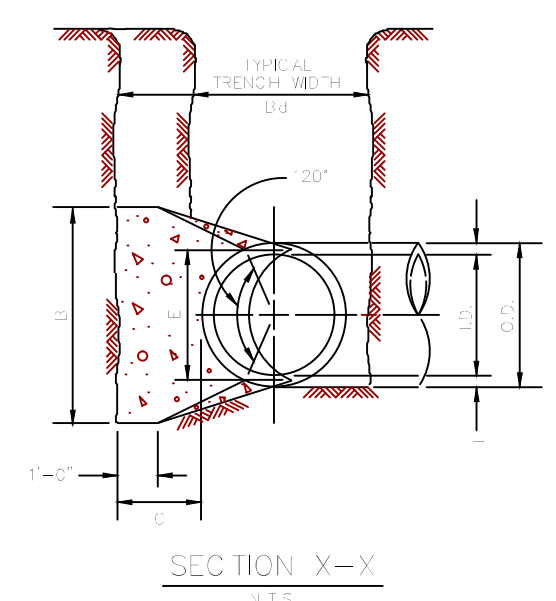
- NOTES:**
1. IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR PRIMARY WATER WORKS SERVICE, C-402. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
  2. ALL JOINTS SHALL BE MECHANICAL JOINTS.
  3. TYPICAL VALVE ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
  4. F.H. NO CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS (USUAL).
  5. STANDARD BURY DEPTH 5' FEET.
  6. SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.
  7. F.H. SHALL BE LOCATED MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADIUS AT INTERSECTIONS. (SEE PLAN VIEW)

**NOTE:**  
IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.

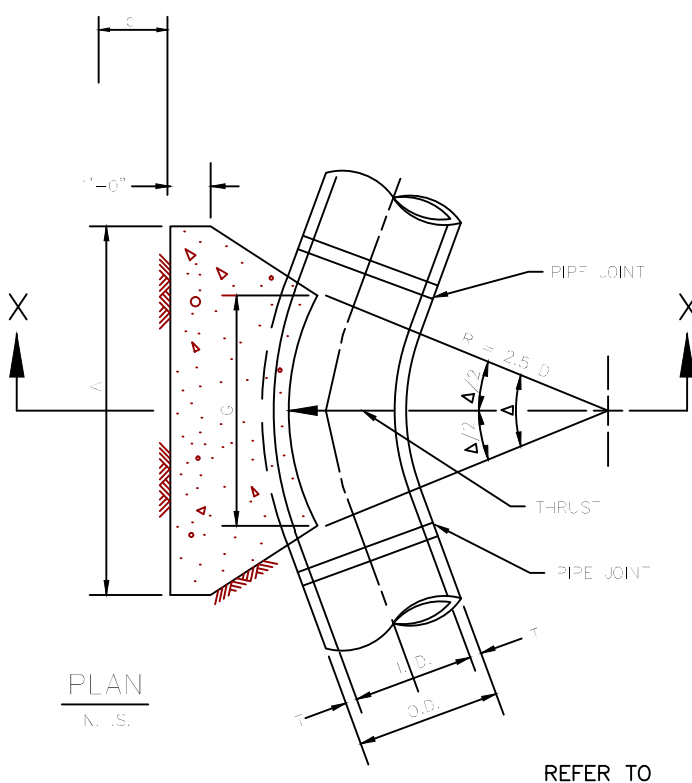


VERTICAL THRUST BLOCK AT PIPE BEND

TD (IN.)	1 (IN.)	2 (IN.)	3 (IN.)	4 (IN.)	5 (IN.)	6 (IN.)
10.0	1.0	2.0	3.0	4.0	5.0	6.0
11.0	1.1	2.2	3.3	4.4	5.5	6.6
12.0	1.2	2.4	3.6	4.8	6.0	7.2
13.0	1.3	2.6	3.9	5.2	6.5	7.8
14.0	1.4	2.8	4.2	5.6	7.0	8.4
15.0	1.5	3.0	4.5	6.0	7.5	9.0
16.0	1.6	3.2	4.8	6.4	8.0	9.6
17.0	1.7	3.4	5.1	6.8	8.5	10.2
18.0	1.8	3.6	5.4	7.2	9.0	10.8
19.0	1.9	3.8	5.7	7.6	9.5	11.4
20.0	2.0	4.0	6.0	8.0	10.0	12.0



SECTION X-X

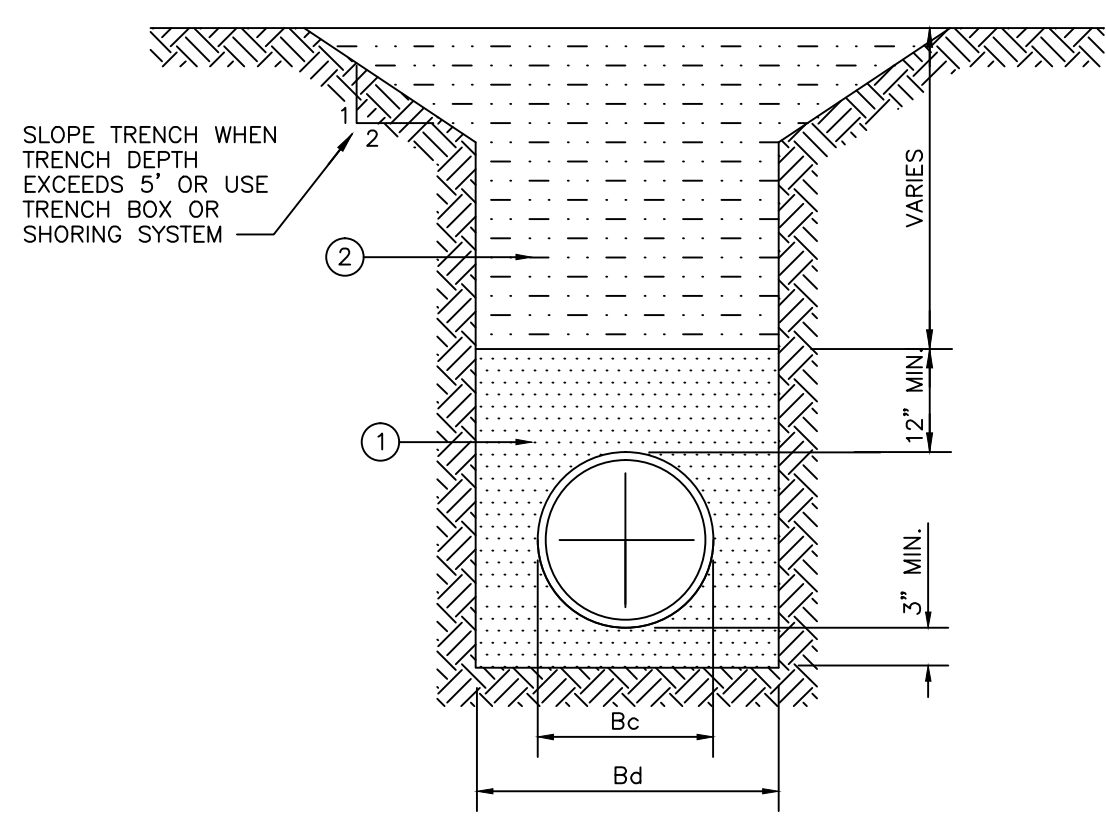


PLAN

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

**GENERAL NOTES FOR ALL THRUST BLOCKS:**

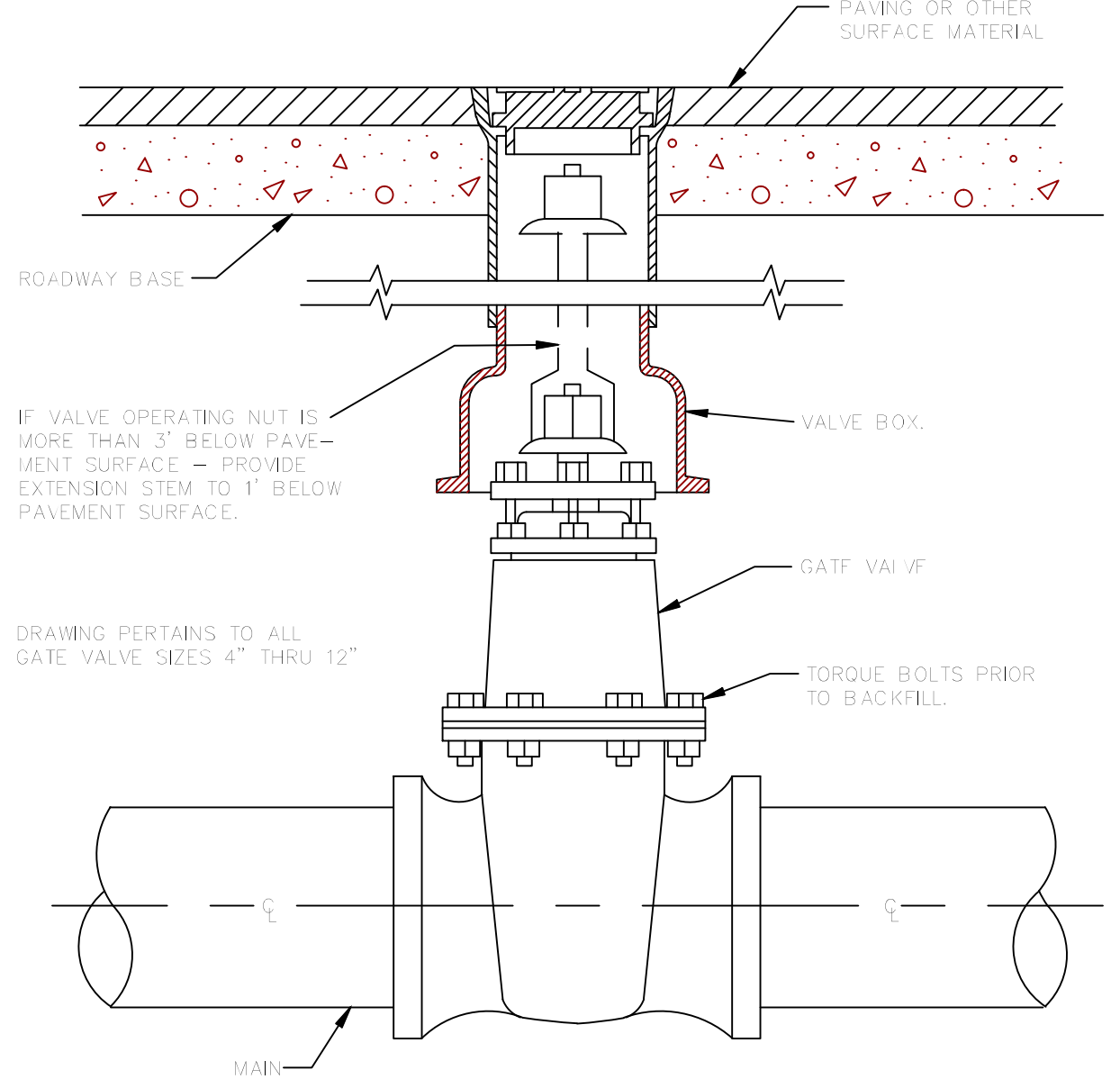
1. CONCRETE FOR BLOCKING SHALL BE CLASS "B".
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
3. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
8. USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.



1. GRANULAR MATERIAL (SAND) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
2. SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 90% STANDARD PROCTOR DENSITY UNDER STRUCTURES, ROADWAYS AND PAVEMENT. EXCLUDE MATERIAL WITH LL >50 COMPACT TO 95% STANDARD PROCTOR DENSITY. GRANULAR MATERIAL MUST BE WELL GRADED.

SIZE OF PIPE IN INCHES DIA.	KIND OF PIPE	EXTERNAL DIA. (Bc) IN INCHES	TRENCH WIDTH (Bd) IN INCHES
6"	PVC SEWER PIPE	6.28	24
8"	PVC SEWER PIPE	8.16	24
10"	PVC SEWER PIPE	10.2	26

WATER EMBEDMENT  
CLASS "B+"



GATE VALVE BOX AND EXTENSION STEM

**RECORD DRAWINGS**

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

*Todd Winters* 9-18-16  
TODD WINTERS DATE

BENCHMARK:  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65

**ENGINEERINGCONCEPTS & DESIGN, L.P.**

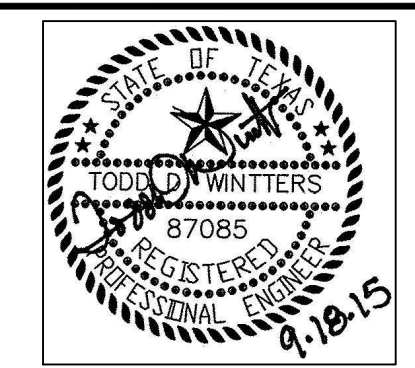
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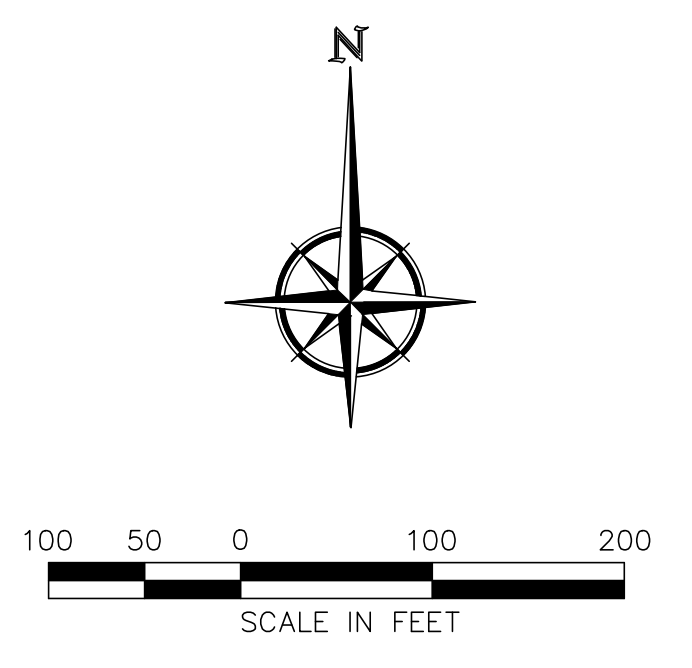
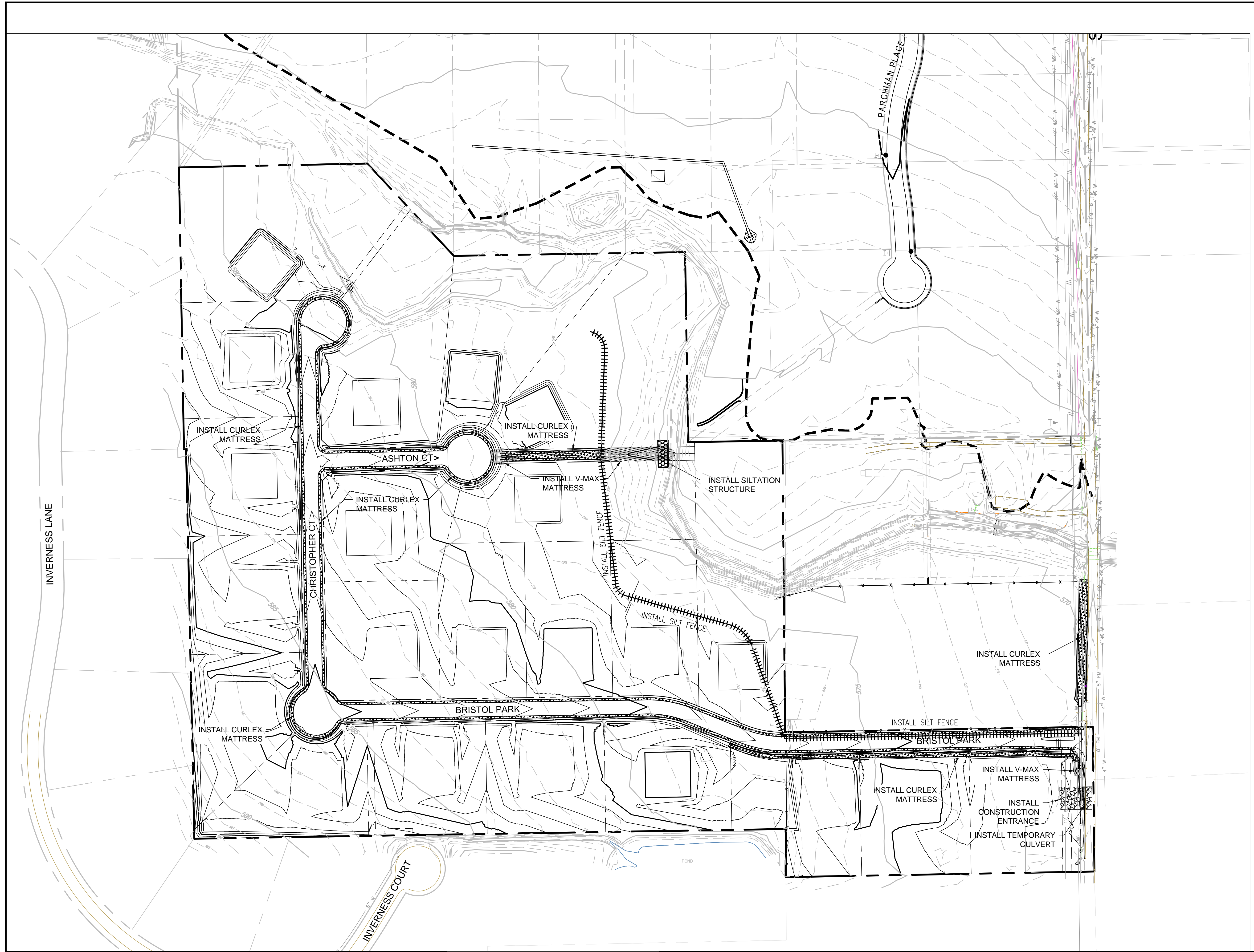
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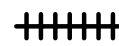



DRAWN: JIM DATE: Sep. 18, 15  
CHECKED: TW DATE: 21-Sep-15  
PROJECT NO.: 8313  
DWG FILE NAME: 20 WATER DETAILS.DWG

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TODD D. WINTERS, P.E. 87085




**WATER DETAILS  
BRISTOL PARK  
(PHASE II)**



- LEGEND:**
-  CURLEX MATTRESS
  -  SILT FENCE
  -  STONE SILTATION STRUCTURE
  -  CONSTRUCTION ENTRANCE
  -  V-MAX MATTRESS

BENCHMARK:  
An "X" cut in south end of a concrete headwall on the east side of Stinson Road at Muddy Creek  
Elevation 569.65'



**ENGINEERINGCONCEPTS**  
& DESIGN, L.P.

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CONSTRUCTION SERVICES - FIRM REG. #F-001145  
201 WINDCO CIR, STE 200, WYLIE, TX 75098  
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

NO.	DESCRIPTION	DATE

DRAWN: JOE DATE: SEPTEMBER, 2015  
CHECKED: TW  
PROJECT NO: 8313  
DWG FILE NAME: 21 EROSION CONTROL.DWG

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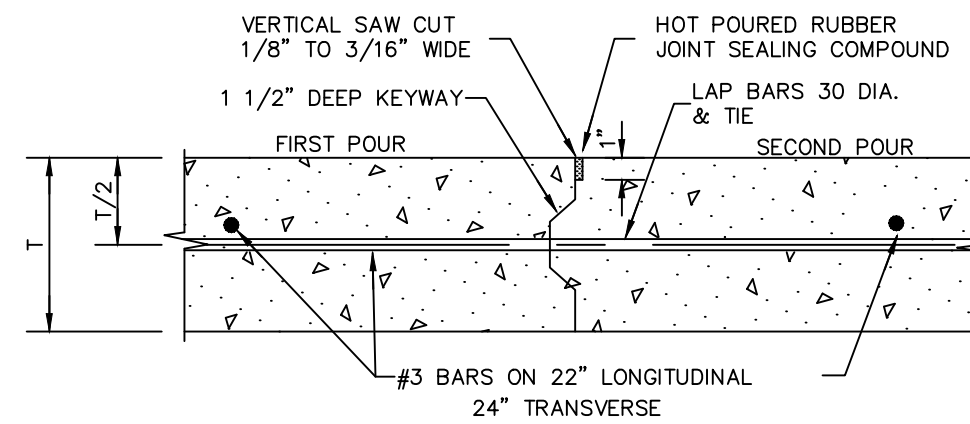
**EROSION CONTROL  
BRISTOL PARK  
(PHASE II)**  
8313

**RECORD DRAWINGS**

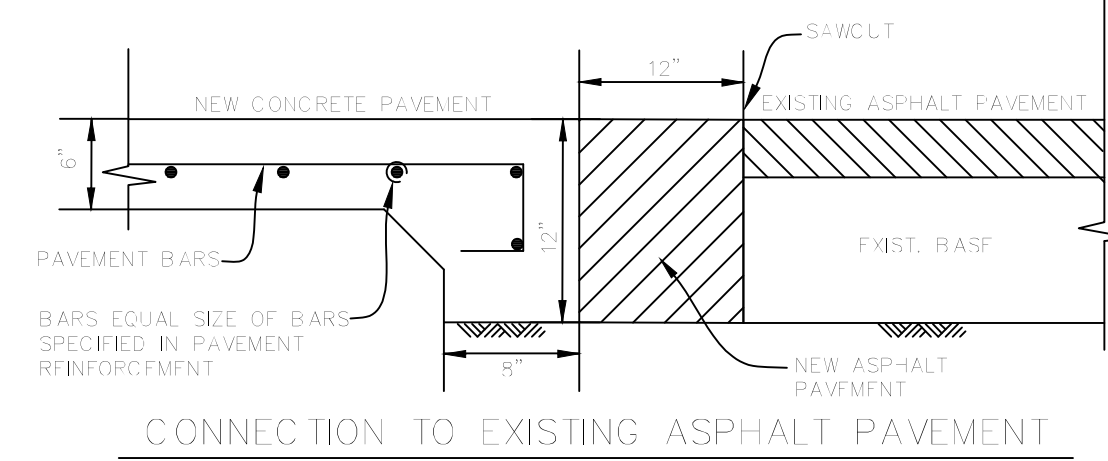
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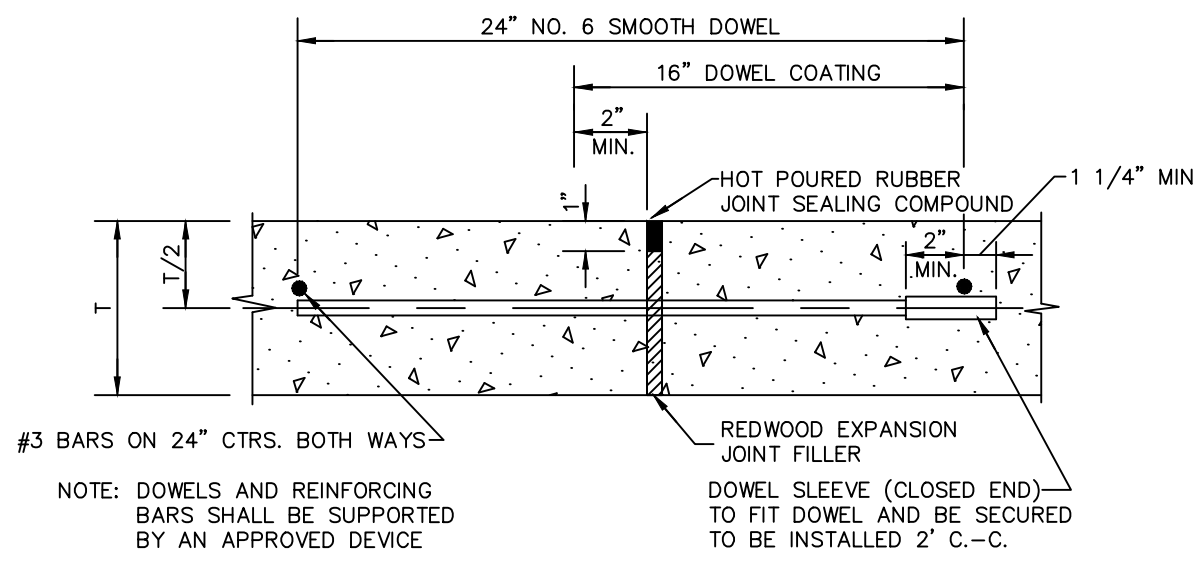
SHEET  
21  
OF  
22



CONSTRUCTION JOINT DETAIL  
N.T.S.

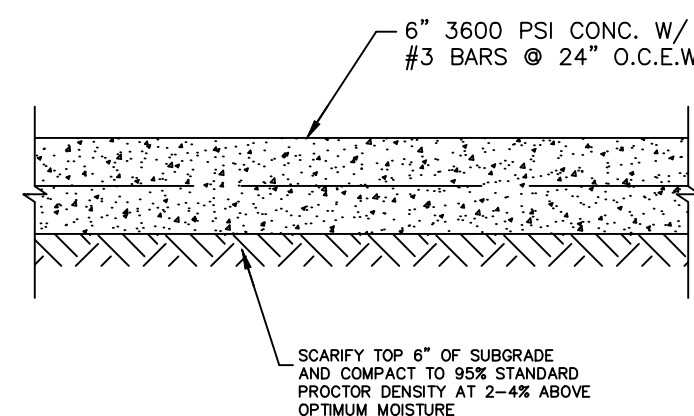


CONNECTION TO EXISTING ASPHALT PAVEMENT  
N.T.S.

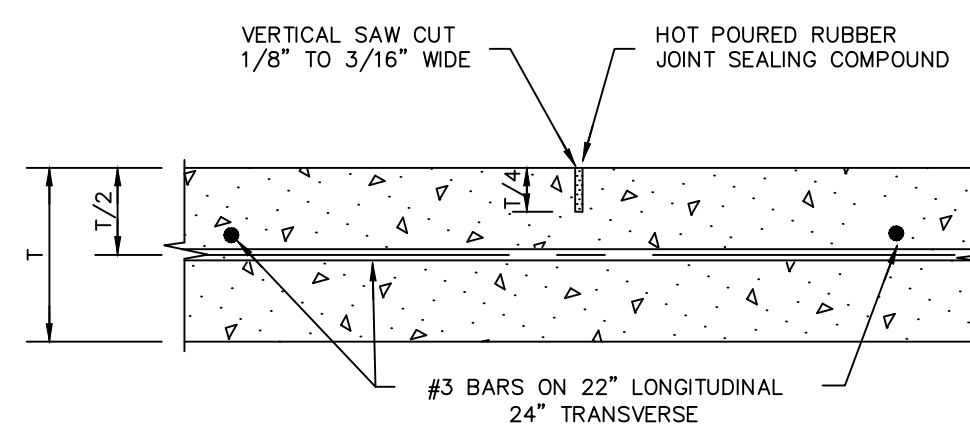


TRANSVERSE EXPANSION JOINT DETAIL  
N.T.S.

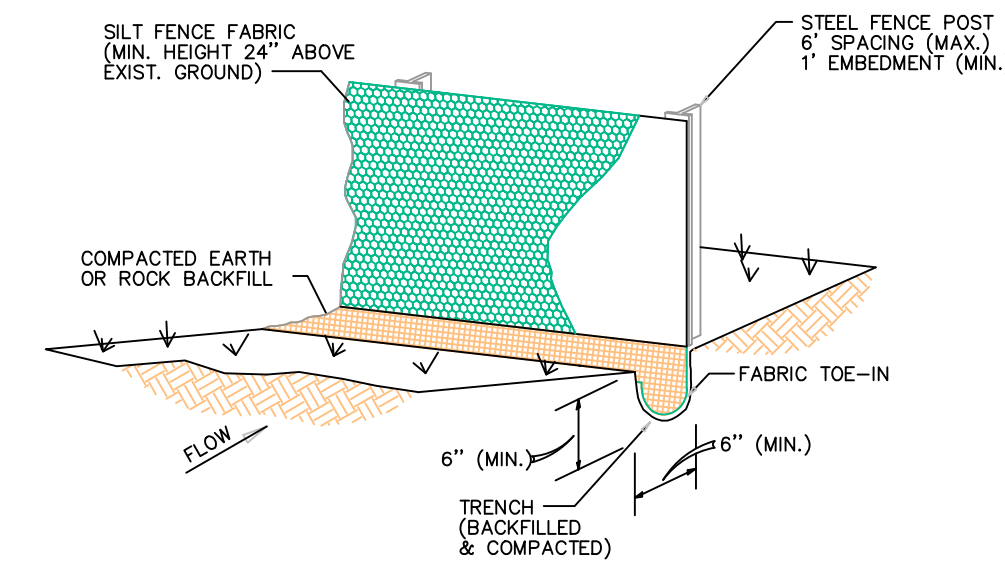
NOTE: SPACE 600' O.C., LOCATE AT INTERSECTIONS



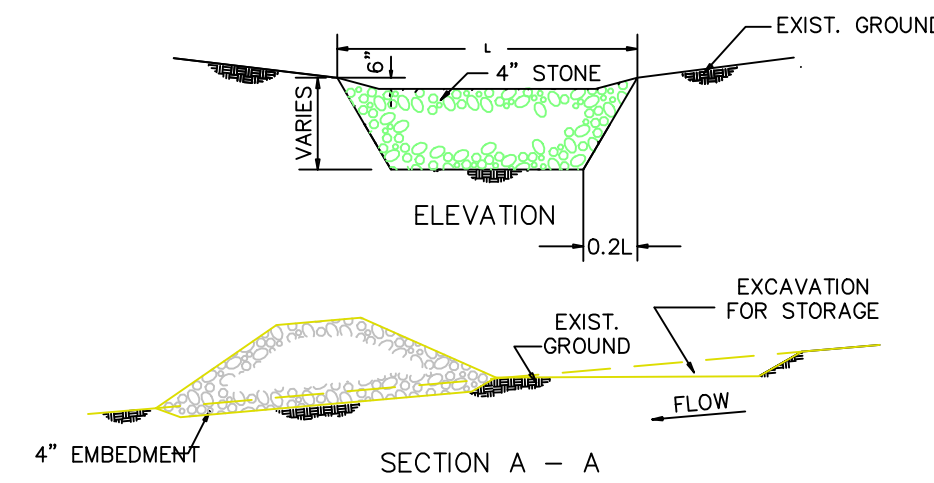
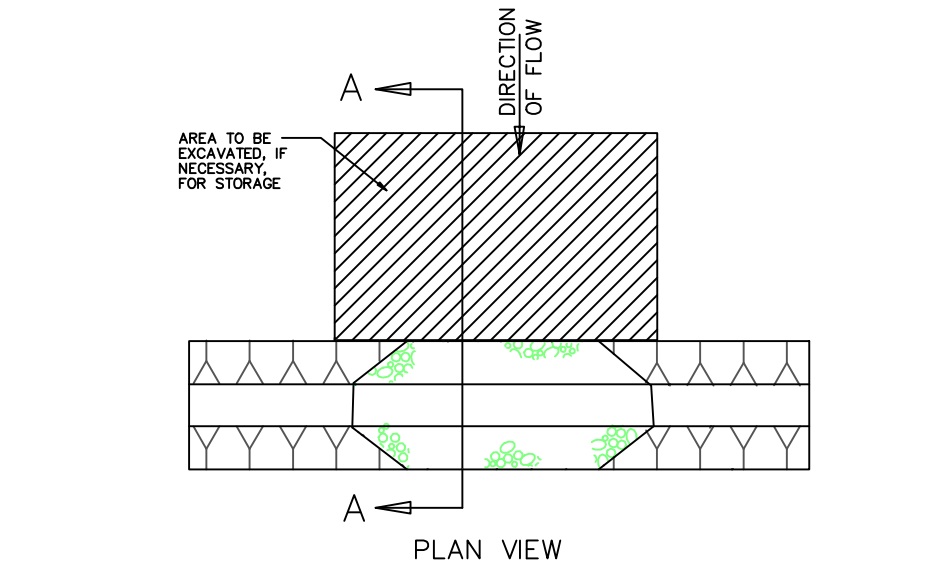
CONCRETE PAVEMENT  
NO SCALE



SAWED DUMMY JOINT DETAIL  
N.T.S.



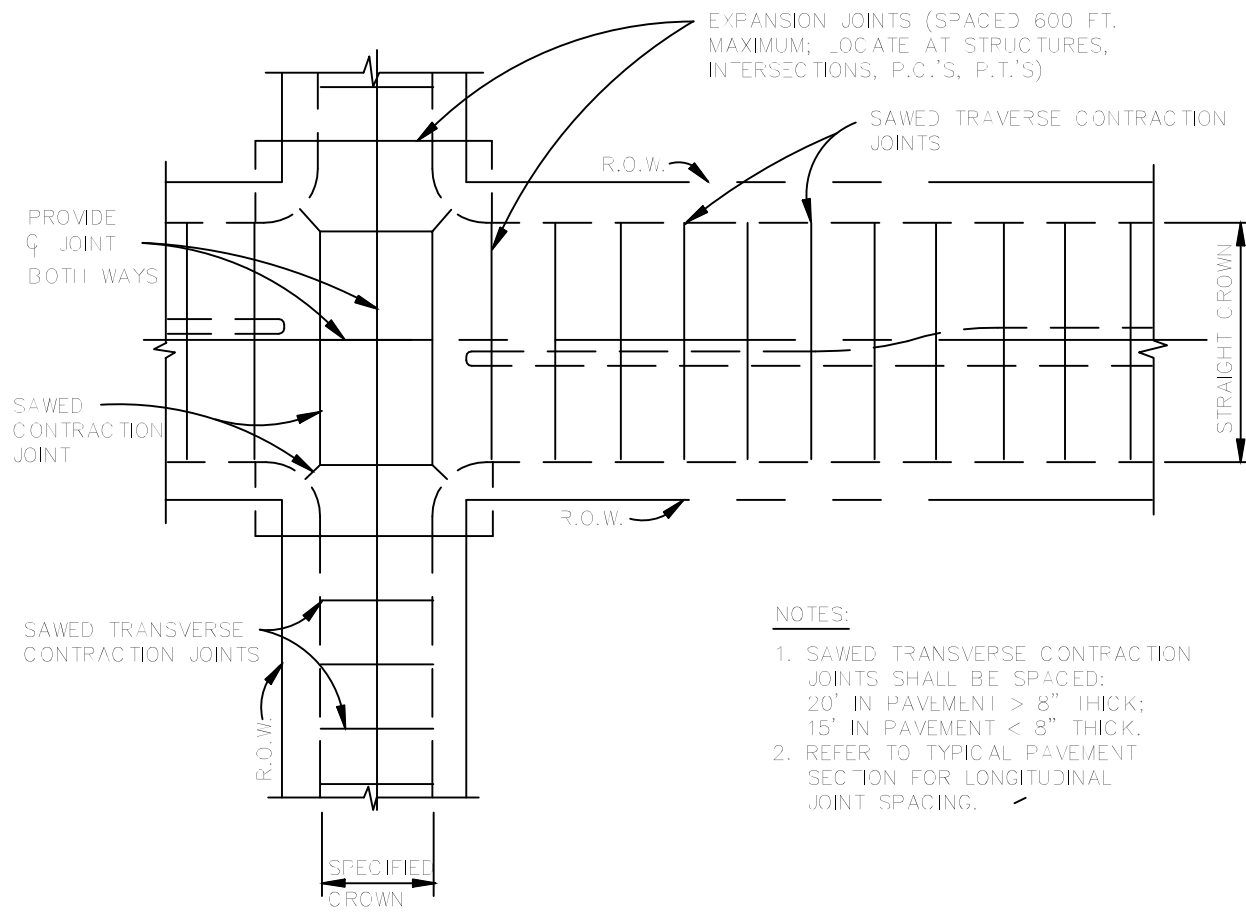
STONE SILTATION STRUCTURE  
N.T.S.  
NCTCOG 02270.B  
STORM WATER QUALITY  
BEST MANAGEMENT PRACTICES  
FOR CONSTRUCTION ACTIVITIES



STONE SILTATION STRUCTURE  
N.T.S.

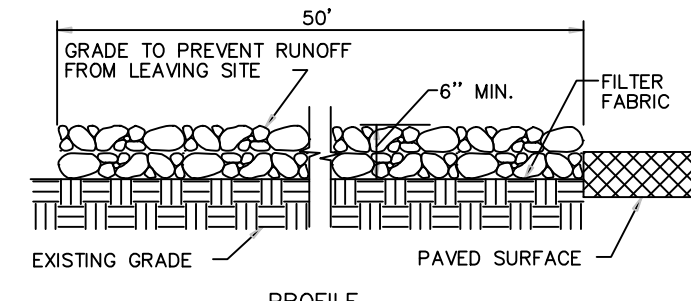
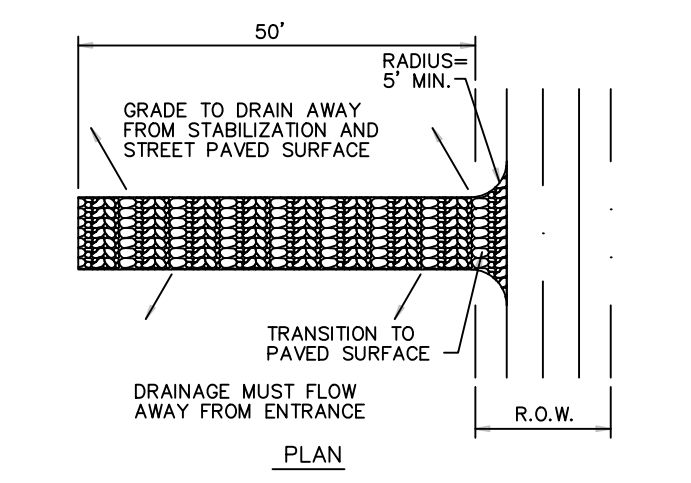
Stone Siltation Structure To Be Installed Prior To Beginning Work On Site.

- NOTES:
1. A STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) INCLUDING NOTICE OF INTENT (N.O.I.) WILL BE PREPARED BY THE GENERAL CONTRACTOR FOR THIS PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE N.P.D.E.S. GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION.
  2. ALL CONTRACTORS WILL COMPLY WITH THE REQUIREMENTS AND INTENT OF THE N.P.D.E.S. GENERAL PERMIT FOR STORM WATER DISCHARGES.
  3. EACH CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (N.O.I.) FOR STORM WATER DISCHARGE PERMIT COVERAGE. THIS SUBMITTAL SHALL BE COORDINATED WITH THE OWNER AND SHALL OCCUR NO LESS THAN 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.
  4. EACH CONTRACTOR SHALL OBTAIN AND SUBMIT TO THE OWNER A POLLUTION PREVENTION CERTIFICATION FROM EACH SUBCONTRACTOR WHOSE WORK IMPACTS THE STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) PRIOR TO THE PERFORMANCE OF ANY WORK BY SAID SUBCONTRACTOR. THESE CERTIFICATIONS SHALL BECOME A PART OF THE STORM WATER POLLUTION PREVENTION PLAN.
  5. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES, AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT, PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. REPAIRS OR MODIFICATIONS TO THE MEASURES WILL BE MADE BY THE CONTRACTOR IF THE CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY.
  6. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PREVENT TRACKING OF MUD AND/OR SOILS ONTO EXISTING AND/OR NEW PAVEMENT. ANY TRACKING THAT OCCURS SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
  7. AT A MINIMUM, PERIMETER CONTROLS SUCH AS SILT FENCE OR STRAW BALES SHALL BE INSTALLED AT ALL DOWN SLOPE BOUNDARIES AND AS WARRANTED WHERE PAVEMENT REMOVAL, UTILITY CONSTRUCTION, GRADING, OR OTHER CONSTRUCTION ACTIVITIES ARE TO BE PERFORMED. THE CONTRACTOR SHALL AT ALL TIMES TAKE SUCH MEASURES AS NECESSARY TO MINIMIZE OFFSITE TRACKING OR TRANSPORT OF SEDIMENT AND DEBRIS.
  8. DAMAGE TO ADJACENT PROPERTY AND/OR TO RECEIVING WATERS CAUSED BY IMPROPERLY INSTALLED OR POORLY MAINTAINED EROSION CONTROL MEASURES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
  9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY SILTATION CAUSED BY HIS OPERATIONS AND/OR FAILURE OF THE EROSION CONTROL MEASURES.
  10. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ACCUMULATED SILT AND SEDIMENT FROM EROSION CONTROL MEASURES WHEN IT REACHES A DEPTH OF SIX (6) INCHES OR IMPAIRS THE EFFECTIVENESS OF THE MEASURES.
  11. THE CONTRACTORS REPRESENTATIVE WILL INSPECT THE PROJECT EVERY SEVEN DAYS, AT A MINIMUM, AND AFTER EVERY RAINFALL OF ONE-HALF INCHES OR GREATER TO DETERMINE THE INTEGRITY AND EFFECTIVENESS OF THE EROSION CONTROL MEASURES. A WRITTEN INSPECTION REPORT WILL BE FILED WITH THE POLLUTION PREVENTION PLAN. THIS INSPECTION DOES NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR INSPECTION AND MAINTENANCE OF THE EROSION CONTROL MEASURES OR HIS DUTY TO COMPLY WITH THE INTENT AND CONDITIONS OF THE N.P.D.E.S. GENERAL PERMIT.
  12. ALL STOCKPILED SOILS WILL BE SURROUNDED BY A STRAW BALE DIKE, SILT FENCE, SEDIMENT CONTROL SWALE, OR EQUIVALENT MEASURE TO PROPERLY CONTROL SEDIMENT RUNOFF, AS APPROVED BY THE OWNER.
  13. CONTRACTOR SHALL STABILIZE ANY AREA WHERE CONSTRUCTION ACTIVITY IS TO BE TEMPORARILY OR PERMANENTLY CEASED FOR MORE THAN 14 DAYS.
  13. ALL DISTURBED AREAS TO BE SEEDDED AND STABILIZED UNTIL GRASS IS ESTABLISHED.



SPACING DIAGRAM FOR TRANSVERSE JOINTS  
N.T.S.

- NOTES:
1. SAWED TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED: 20' IN PAVEMENT > 8" THICK; 15' IN PAVEMENT < 8" THICK.
  2. REFER TO TYPICAL PAVEMENT SECTION FOR LONGITUDINAL JOINT SPACING.



STABILIZED CONSTRUCTION ENTRANCE / EXIT  
N.T.S.

NCTCOG 02270.G  
STORM WATER QUALITY  
BEST MANAGEMENT PRACTICES  
FOR CONSTRUCTION ACTIVITIES

**RECORD DRAWINGS**

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TODD WINTERS DATE

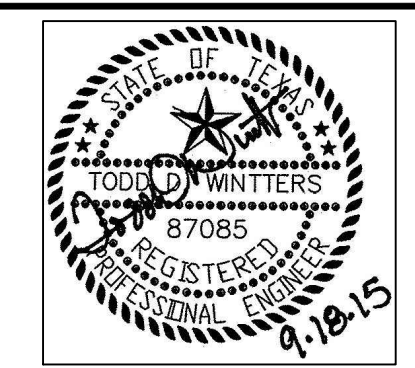
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**PAVING & EROSION CONTROL DETAILS**  
**BRISTOL PARK**  
(PHASE II)

SHEET 22 OF 22