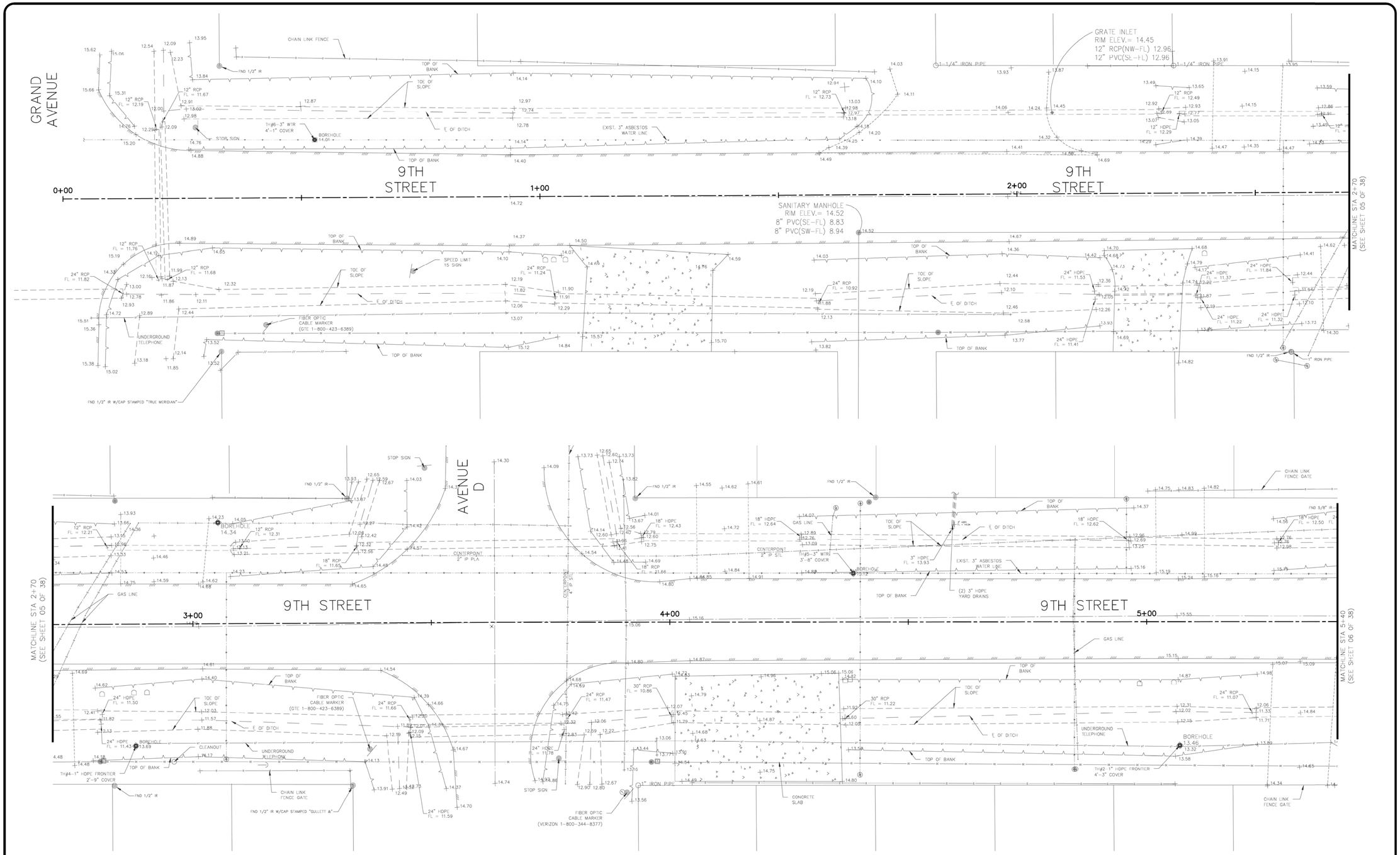

NOTES:

1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE SHEET 07 OF 38 FOR DATUM & TBM INFORMATION.
3. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

9TH ST SURVEY & CONTROL 01 OF 03

9TH & 11TH STREET DRAINAGE RESTORATION

REGISTERED PROFESSIONAL ENGINEER
DAVID E. MIGS
130126
LICENSED
STATE OF TEXAS
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)

DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 05 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\05 - 07 9TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 1, 2019 1:23 PM PLOT DATE: Nov 26, 2019 12:06 PM
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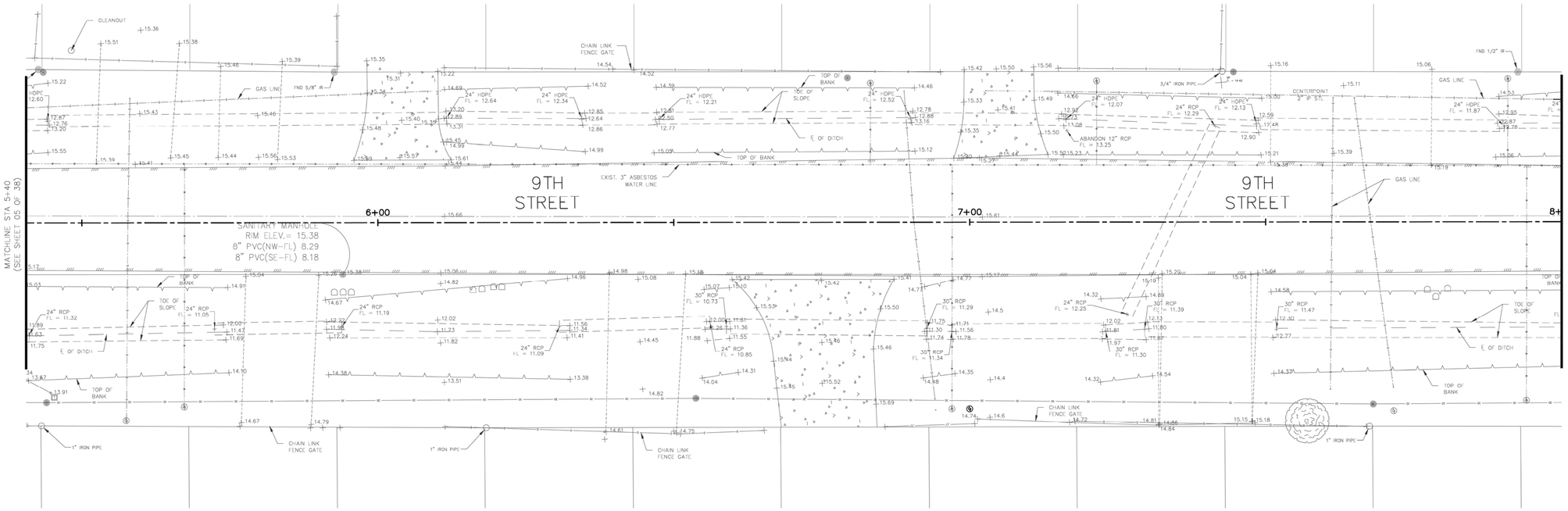

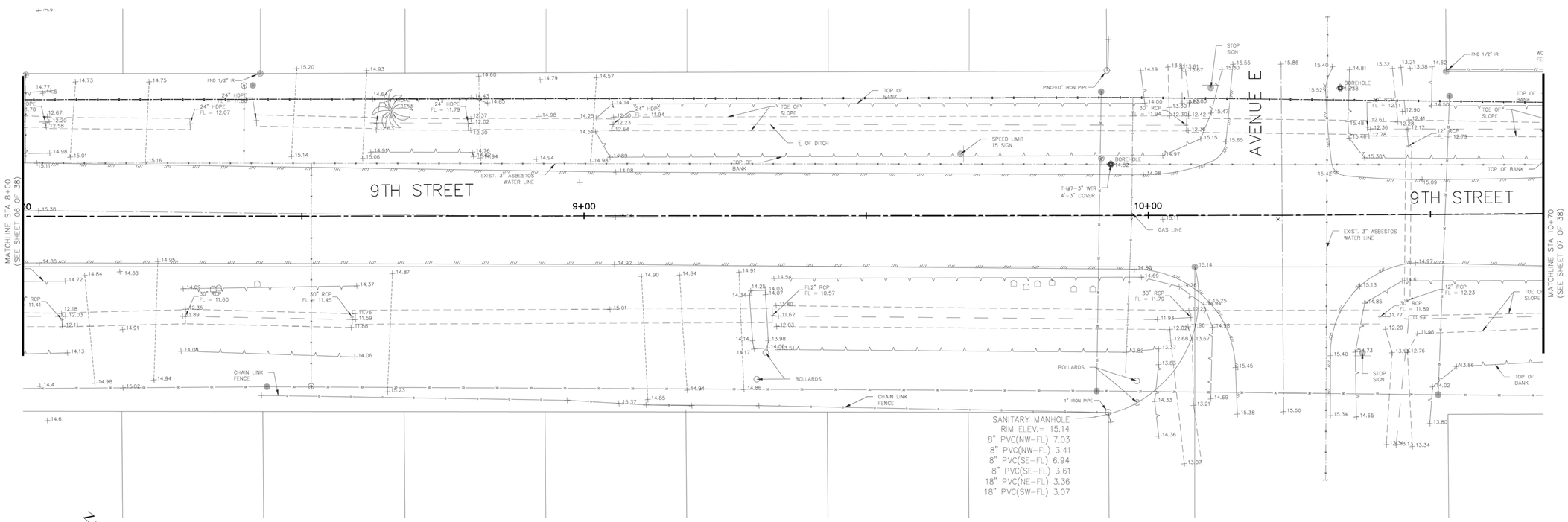

NOTES:

1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE SHEET 07 OF 38 FOR DATUM & TBM INFORMATION.
3. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

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THE STATE OF TEXAS
COUNTY OF GALVESTON

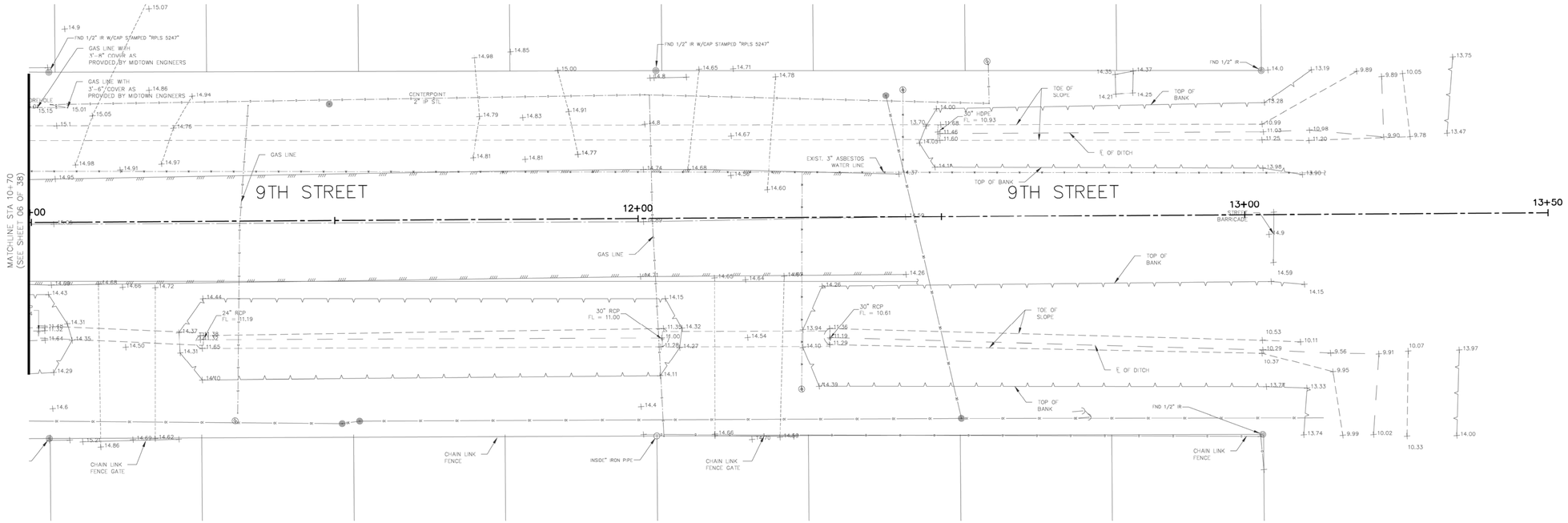
9TH ST SURVEY & CONTROL 02 OF 03

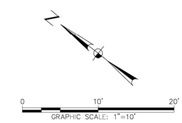
9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 06 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\05 - 07 9TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 1, 2019 1:23 PM BY: Mvega PLOT DATE: Nov 26, 2019 12:06 PM
XREFS:XREF_BORDER XREF_LAYOUTS XREF_SURVEY XREF_BASELINE





NOTE:

ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE PUBLISHED HARRIS COUNTY FLOOD CONTROL DISTRICT REFERENCE MONUMENT 010010

VERTICAL DATUM:

BENCHMARK

HARRIS COUNTY FLOODPLAIN REFERENCE MONUMENT No. 010010, A ALUMINUM DISC FOUND ON THE INTERSECTION OF HWY 146, 2ND STREET AND NASA: TRAVEL ± 0.75 MILES SOUTH EAST ON 2ND STREET TO TODDVILLE ROAD, TURN RIGHT, TRAVEL ± 0.4 MILES SOUTH WEST ON TODDVILLE ROAD TO BRIDGE; MONUMENT IS AT CENTER OF BRIDGE ON THE BAY (EAST) SIDE.
ELEV. 5.89 FEET NAVD 88, GEOID 99 (CONUS), 2001 ADJUSTMENT

T.B.M. #1 (CONTROL POINT #1)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE D AND NINTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.01'

T.B.M. #2 (CONTROL POINT #2)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE E AND NINTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.76'

T.B.M. #3 (CONTROL POINT #3)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE E AND ELEVENTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.79'

T.B.M. #4 (CONTROL POINT #4)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE D AND ELEVENTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.79'

HORIZONTAL AND VERTICAL DATUM

ALL COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON AND REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83), CORS 2011, EPOCH 2010.00.

NOTES:
1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
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Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

9TH ST SURVEY & CONTROL 03 OF 03

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 07 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\05 - 07 9TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 1, 2019 1:23 PM BY: Mvega PLOT DATE: Nov 26, 2019 12:06 PM
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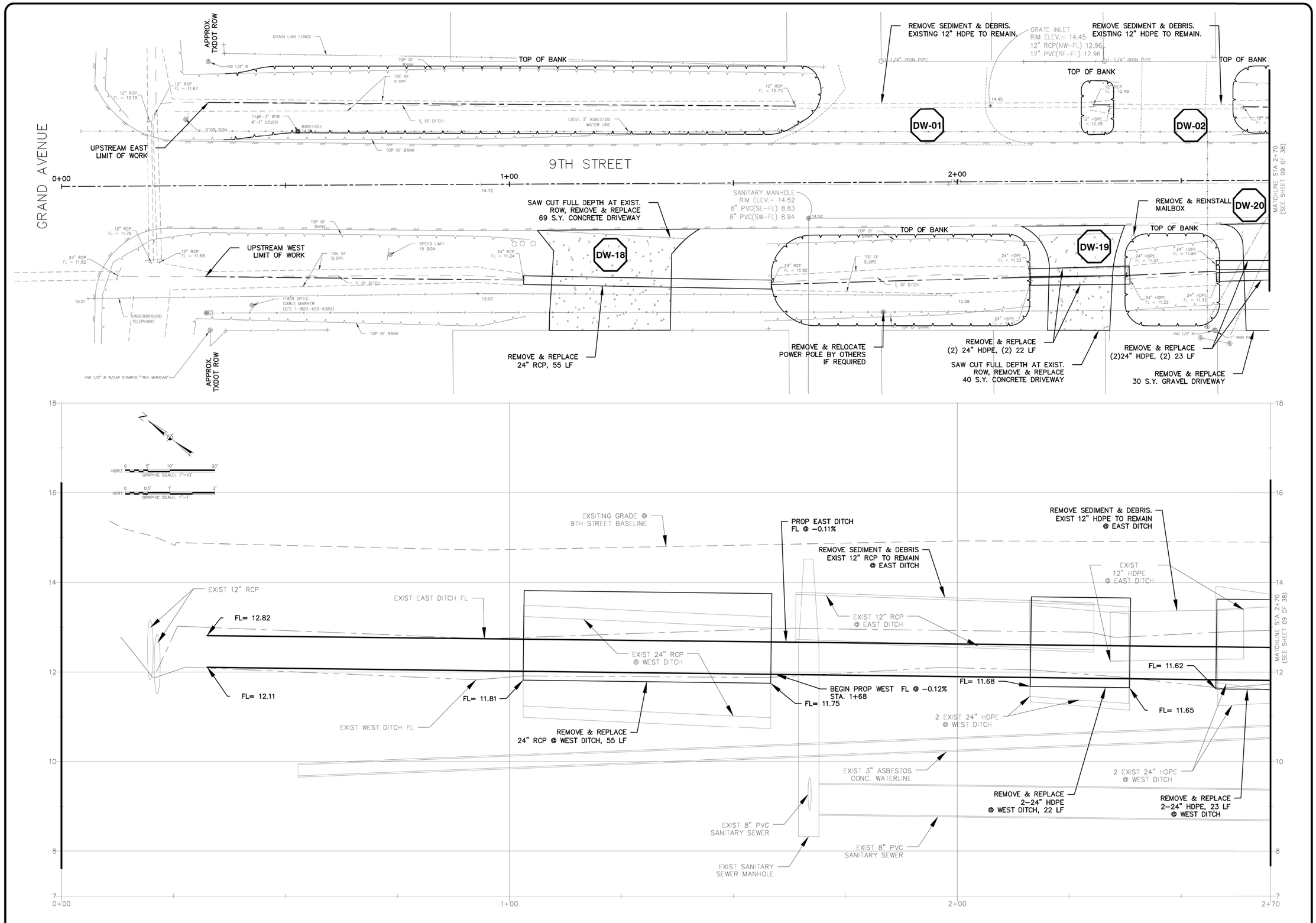

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THE STATE OF TEXAS
COUNTY OF GALVESTON

9TH ST PLAN & PROFILE 01 OF 05

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MOG.
130126
LICENSED
PROFESSIONAL ENGINEER
11-22-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	08 OF 38

DWG FILE: J:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\08 - 13 9TH PLAN & PROFILE.dwg
SAVE DATE: Jul 10, 2019 11:27 AM BY: Dmgl PLOT DATE: Nov 26, 2019 12:07 PM
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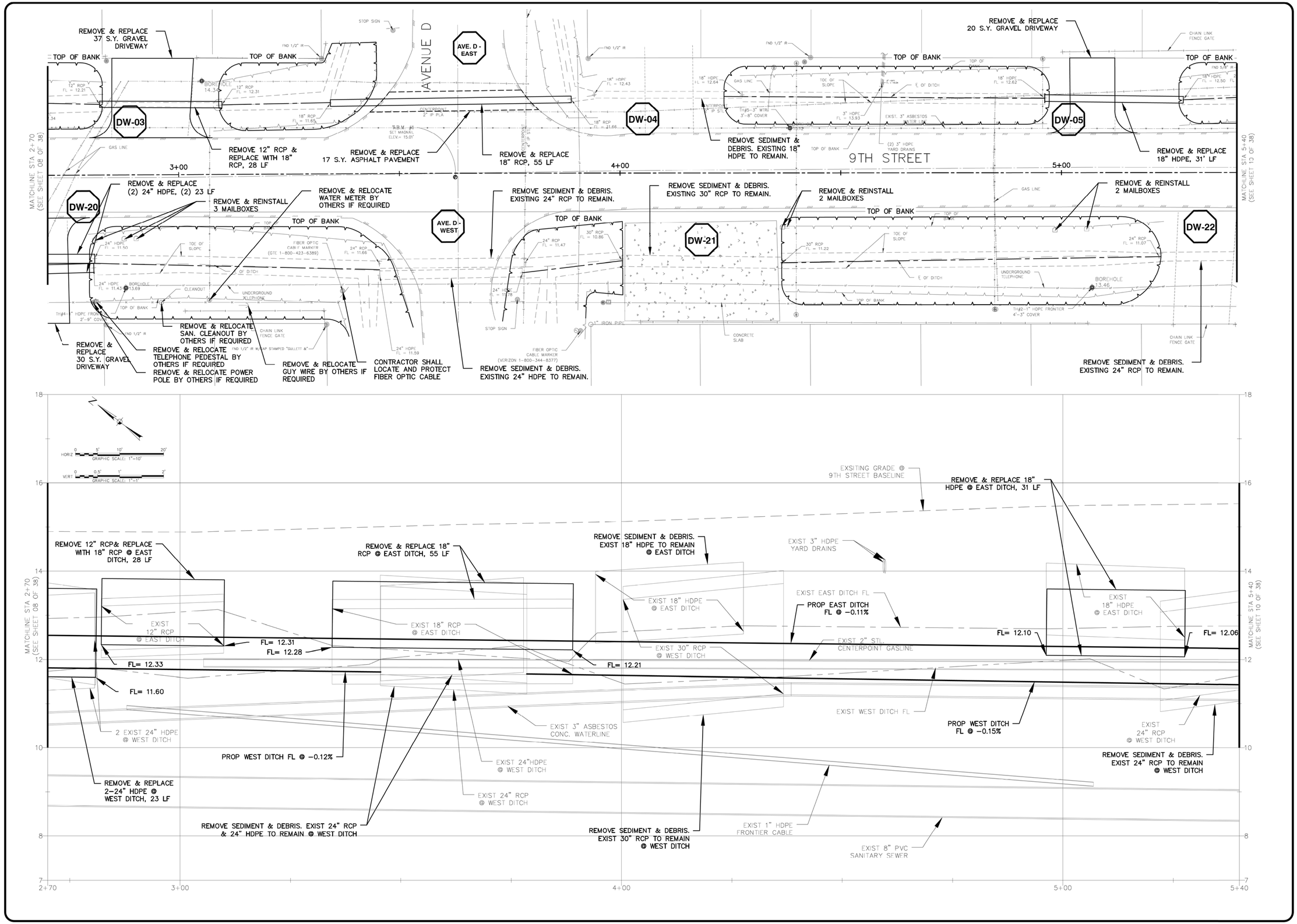

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XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

NO.	REVISION	DATE

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10350 Richmond Ave, Suite 300
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Phone (281) 496-0066
Fax (281) 496-0220

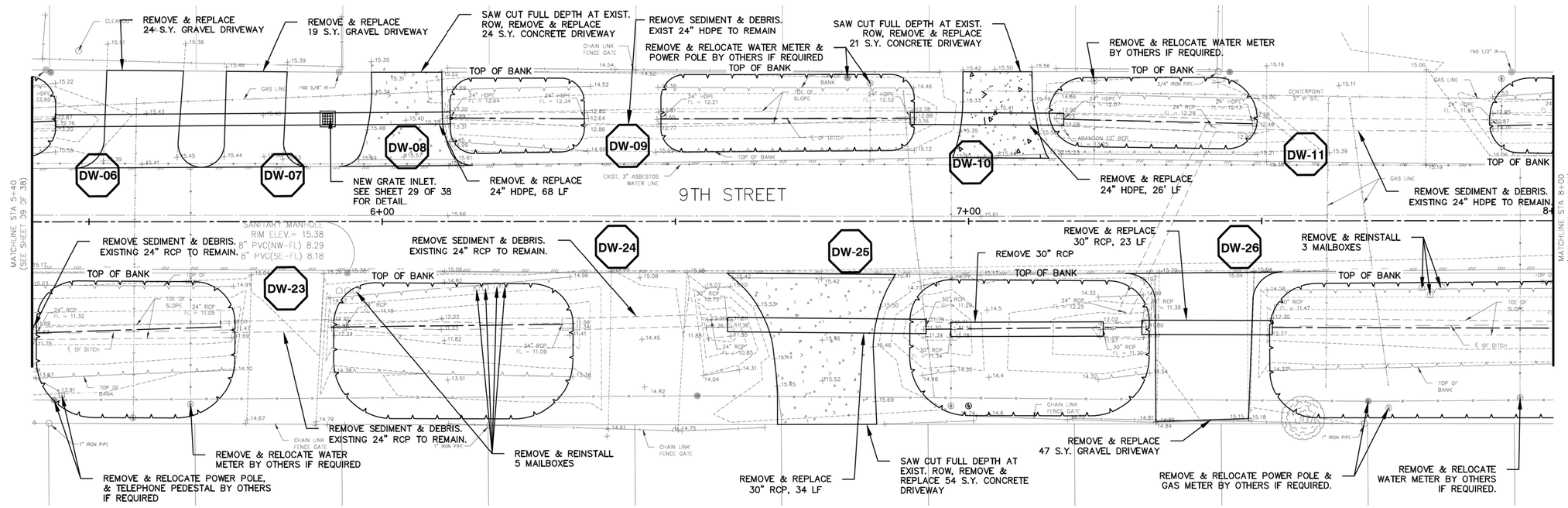
THE STATE OF TEXAS COUNTY OF GALVESTON

9TH ST PLAN & PROFILE 02 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS DAVID E. MOSS 130126 LICENSED PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	09 OF 38



DWG FILE: J:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\08 - 13 9TH PLAN & PROFILE.dwg
SAVE DATE: Jul 10, 2019 11:27 AM BY: Dmgl PLOT DATE: Nov 26, 2019 12:07 PM
XREF S:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

NO.	REVISION	DATE

HUITT-ZOLLARS
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10350 Richmond Ave, Suite 300
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Fax (281) 496-0220

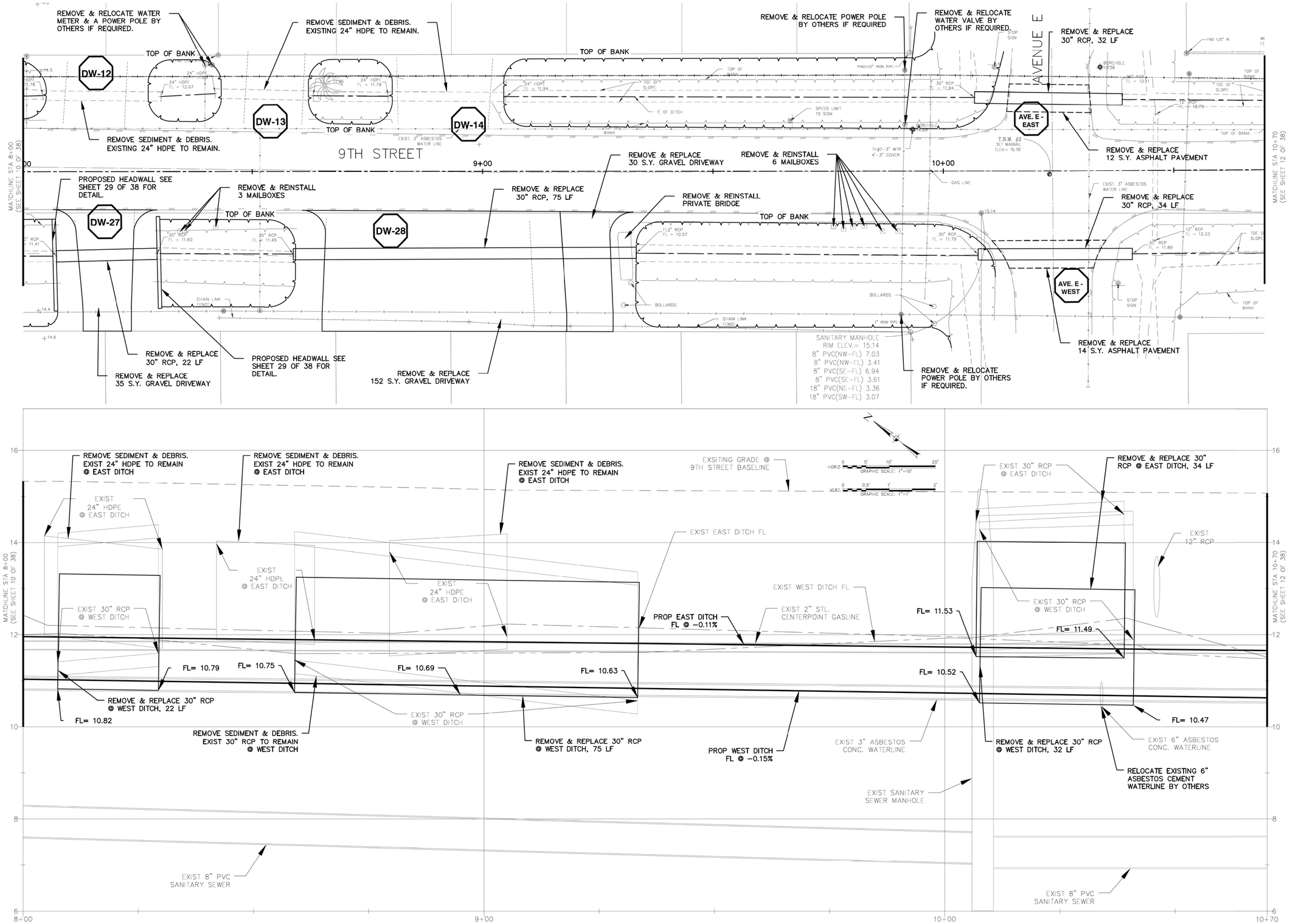
THE STATE OF TEXAS COUNTY OF GALVESTON

9TH ST PLAN & PROFILE 03 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS DAVID E. MIGL 130126 LICENSED PROFESSIONAL ENGINEER
7-12-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	10 OF 38



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10350 Richmond Ave, Suite 300
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THE STATE OF TEXAS
COUNTY OF GALVESTON

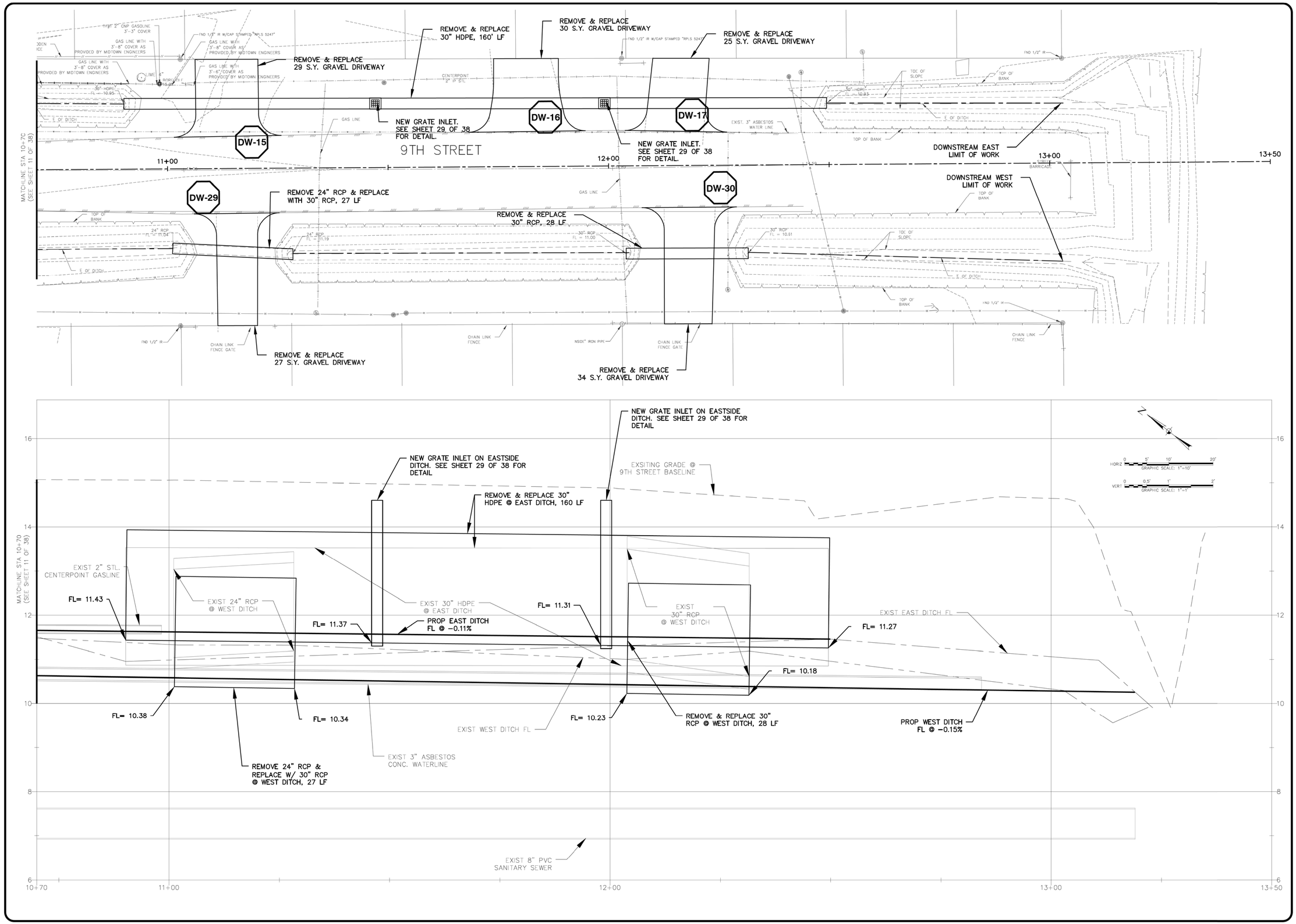
9TH ST PLAN & PROFILE 04 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	11 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\08 - 13 9TH PLAN & PROFILE.dwg
SAVE DATE: Jul 10, 2019 11:27 AM BY: Dmig PLOT DATE: Nov 26, 2019 12:07 PM
XREF'S:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE



NO.	REVISION	DATE

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TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

9TH ST PLAN & PROFILE 05 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MOSS
130126
LICENSED PROFESSIONAL ENGINEER
11-22-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	12 OF 38

DWG FILE: :\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\08 - 13 9TH PLAN & PROFILE.dwg
SAVE DATE: Jul 10, 2019 11:27 AM BY: Dmgl PLOT DATE: Nov 26, 2019 12:08 PM
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

SUMMARY OF DRIVEWAYS FOR 9TH STREET

SHEET NO.	DRIVEWAY NO.	TO BE REPLACED	EXISTING DRIVEWAY MATERIAL	PROPOSED DRIVEWAY MATERIAL	PROPOSED CULVERT LENGTH (LF)	PROPOSED PIPE SIZE (IN)	PROPOSED PIPE MATERIAL	PROPOSED UPSTREAM FL	PROPOSED DOWNSTREAM FL	DRIVEWAYS AREA (SY)
8	1	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	2	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	3	YES	GRAVEL	GRAVEL	28	18	RCP	12.33	12.31	37
9	AVE D EAST	YES	ASPHALT	ASPHALT	55	18	RCP	12.28	12.21	17
9	4	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	5	YES	GRAVEL	GRAVEL	31	18	HDPE	12.10	12.06	20
10	6	YES	GRAVEL	GRAVEL	68	24	HDPE	12.04	11.97	24
10	7	YES	GRAVEL	GRAVEL	SEE DW-06	24	HDPE	12.04	11.97	19
10	8	YES	CONCRETE	CONCRETE	SEE DW-06	24	HDPE	12.04	11.97	24
10	9	NO	EARTHEN	EARTHEN	N/A	N/A	N/A	N/A	N/A	N/A
10	10	YES	CONCRETE	CONCRETE	26	24	HDPE	11.88	11.85	21
10	11	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	12	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	13	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	14	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	AVE E EAST	YES	ASPHALT	ASPHALT	32	30	RCP	11.53	11.49	12
12	15	YES	GRAVEL	GRAVEL	160	30	HDPE	11.43	11.27	29
12	16	YES	GRAVEL	GRAVEL	SEE DW-14	30	HDPE	11.43	11.27	30
12	17	YES	GRAVEL	GRAVEL	SEE DW-14	30	HDPE	11.43	11.27	25
8	18	YES	CONCRETE	CONCRETE	55	24	RCP	11.81	11.75	69
8	19	YES	CONCRETE	CONCRETE	22/22	24.0/24.0	HDPE	11.68	11.65	40
8&9	20	YES	GRAVEL	GRAVEL	23/23	24.0/24.0	HDPE	11.62	11.60	30
9	AVE D WEST	NO	ASPHALT	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	21	NO	CONCRETE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	22	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	23	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	24	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	25	YES	CONCRETE	CONCRETE	34	30	RCP	11.05	11.00	54
10	26	YES	GRAVEL	GRAVEL	23	30	RCP	10.94	10.91	47
11	27	YES	GRAVEL	GRAVEL	22	30	RCP	10.82	10.79	35
11	28	YES	GRAVEL	GRAVEL	75	30	RCP	10.75	10.63	152
11	AVE E WEST	YES	ASPHALT	ASPHALT	34	30	RCP	10.52	10.47	14
12	29	YES	GRAVEL	GRAVEL	27	30	RCP	10.38	10.34	27
12	30	YES	GRAVEL	GRAVEL	28	30	RCP	10.23	10.18	34

NO.	REVISION	DATE

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Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

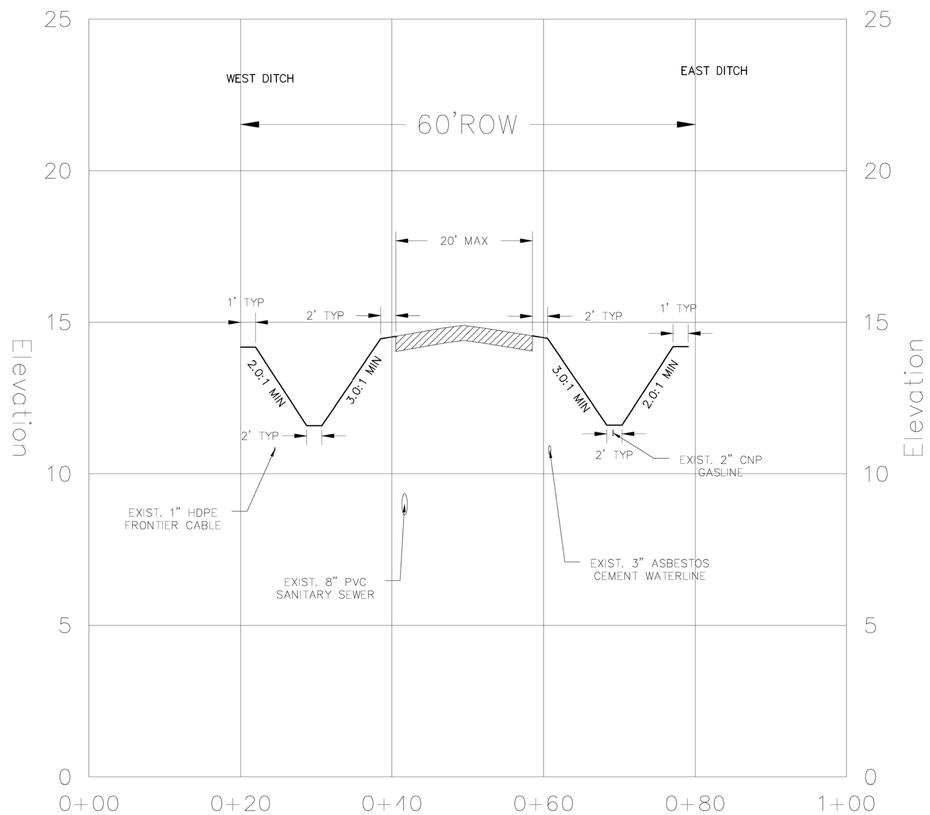
9TH ST DRIVEWAY SUMMARY

9TH & 11TH STREET-
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: NA
NA
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 13 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\08 - 13 9TH PLAN & PROFILE.dwg
SAVE DATE: Jul 10, 2019 11:27 AM BY: Dmigl PLOT DATE: Nov 26, 2019 12:08 PM
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE



1 TYPICAL SECTION 9TH STREET

HORIZ 0 5' 10' 20'
GRAPHIC SCALE: 1"=10'

VERT 0 0.5' 1' 2'
GRAPHIC SCALE: 1"=1'

NO.	REVISION	DATE

HUITT-ZOLLARS
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9TH ST TYPICAL CROSS SECTION

9TH & 11TH STREET
DRAINAGE RESTORATION

DAVID E MIGL
130126
LICENSED PROFESSIONAL ENGINEER
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)
1"=1' (H)
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 14 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\14-15 & 25-26 CROSS-SECTIONS.dwg
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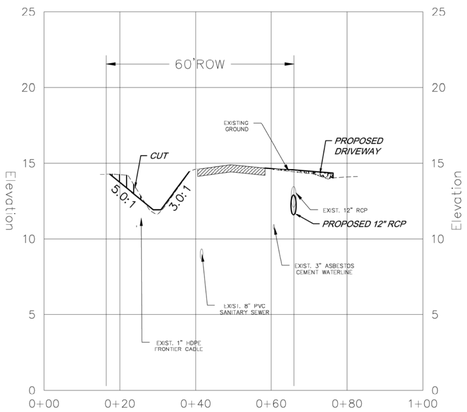
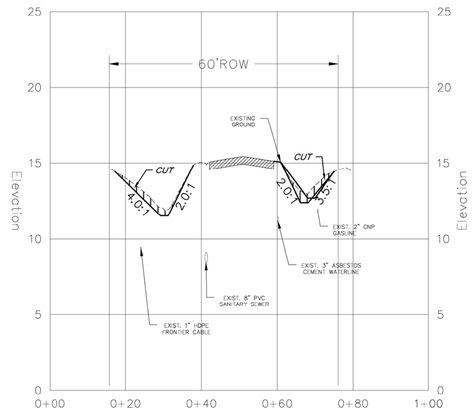
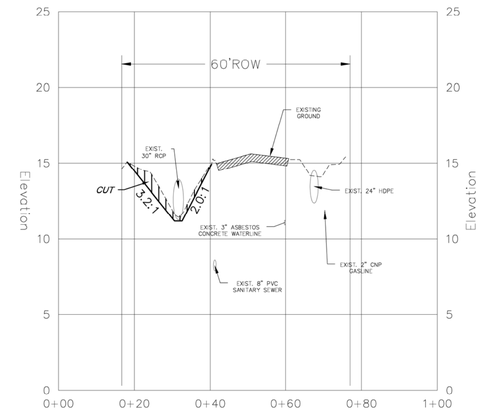


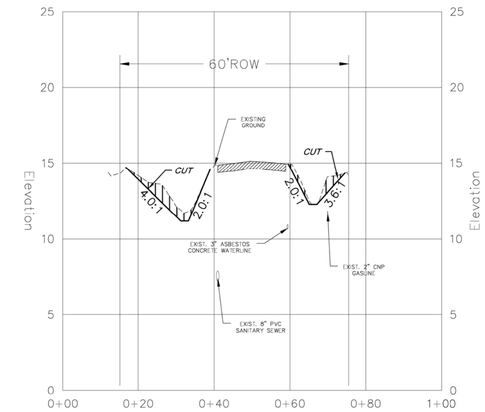
1 SECTION STA 3+00



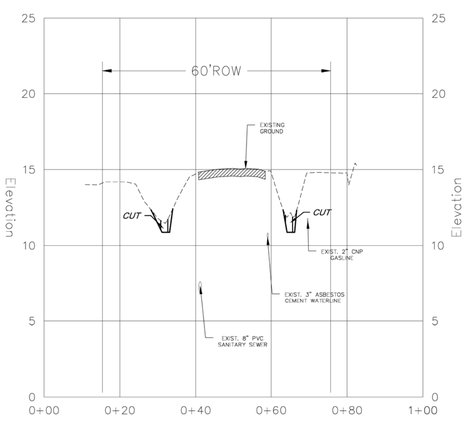
2 SECTION STA 4+75



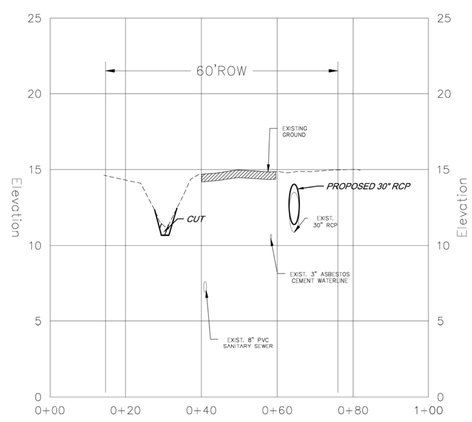
3 SECTION STA 6+95



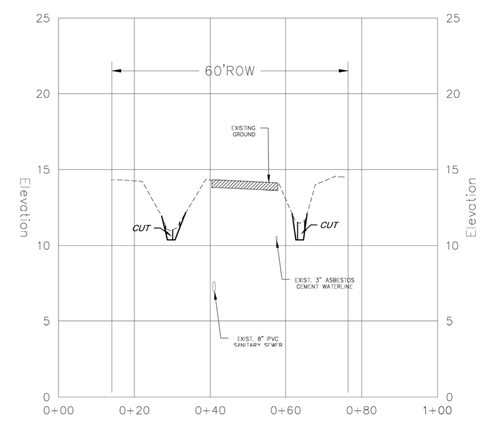
4 SECTION STA 9+50



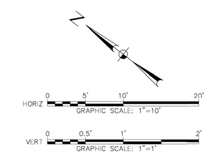
5 SECTION STA 10+75



6 SECTION STA 11+50



7 SECTION STA 12+50



NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

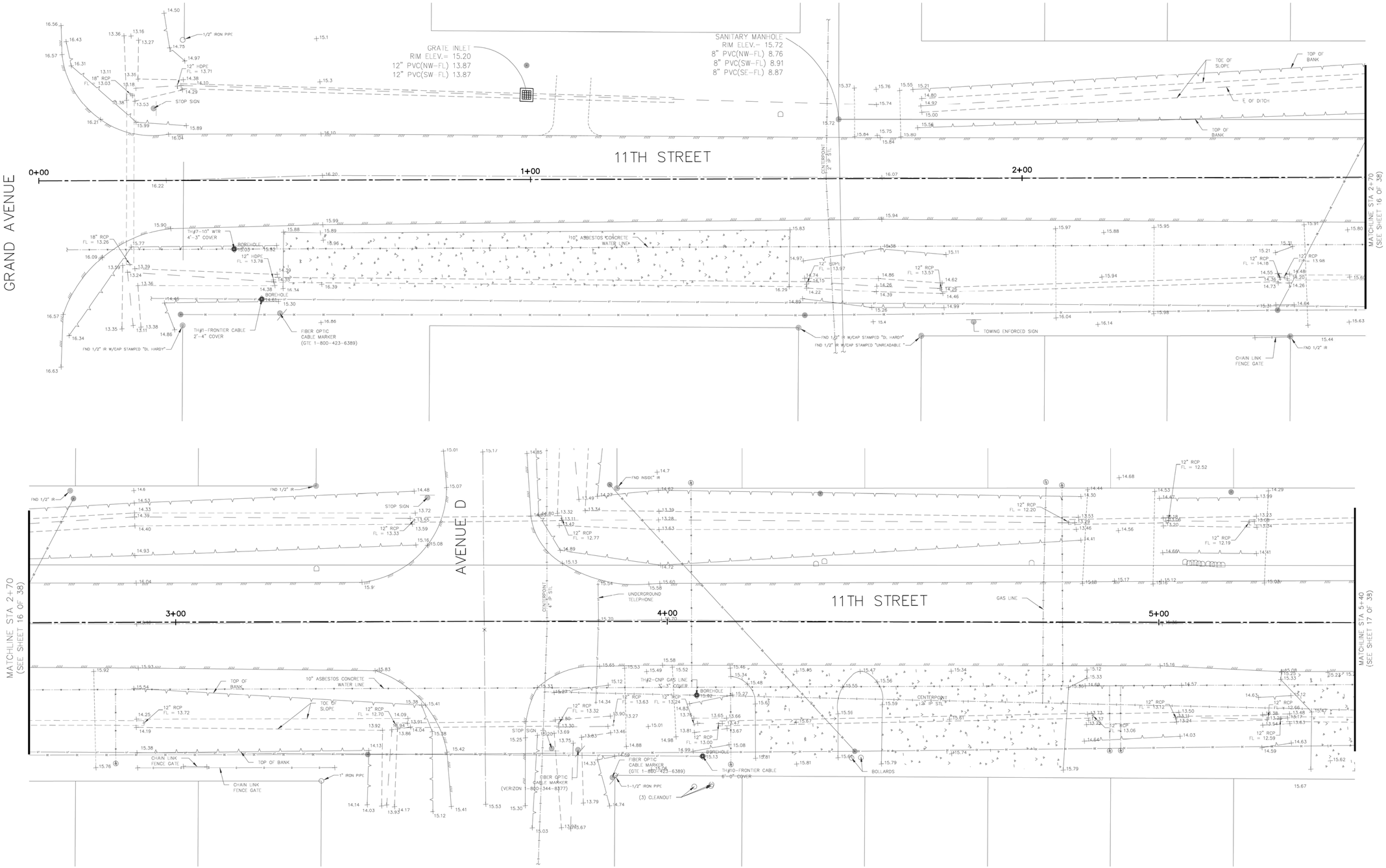
9TH ST CROSS SECTIONS

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	15 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\14-15 & 25-26 CROSS-SECTIONS.dwg
SAVE DATE: Apr 9, 2019 4:30 PM PLOT DATE: Nov 26, 2019 12:09 PM
BY: Mvego
XREFS:XREF_SURVEY XREF_BASELINE XREF_LAYOUTS XREF_BORDER XREF_PROFILE



NOTES:

1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE SHEET 17 OF 38 FOR DATUM & TBM INFORMATION.
3. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
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THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST SURVEY & CONTROL 01 OF 03

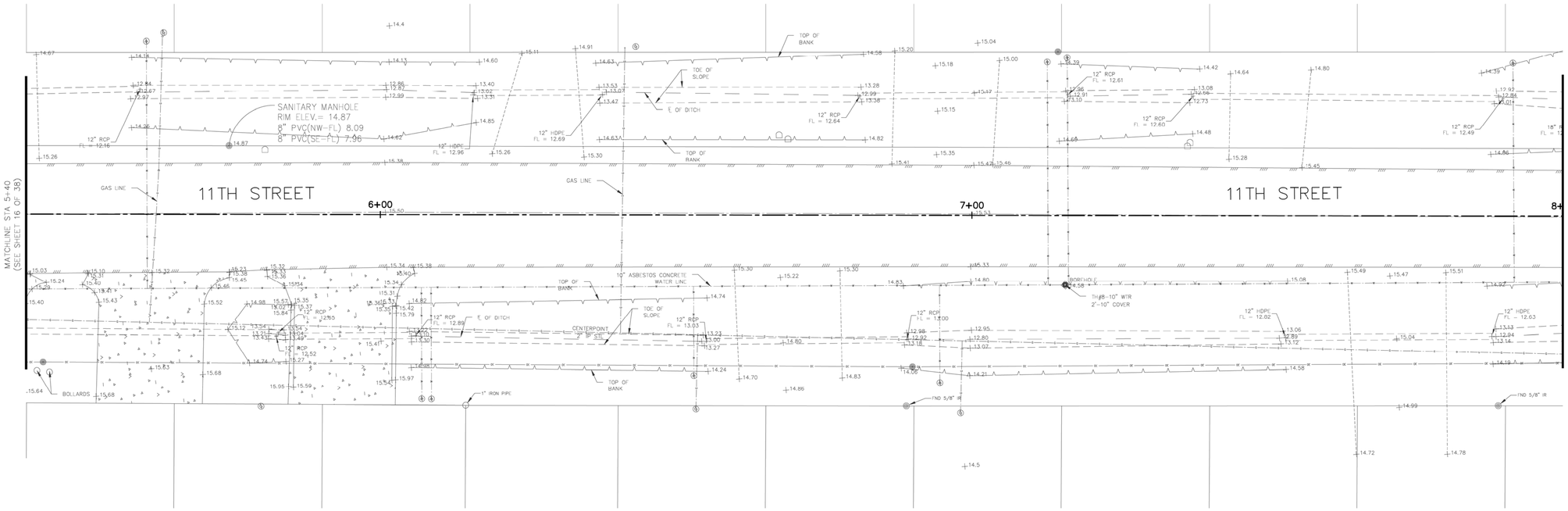
9TH & 11TH STREET
DRAINAGE RESTORATION

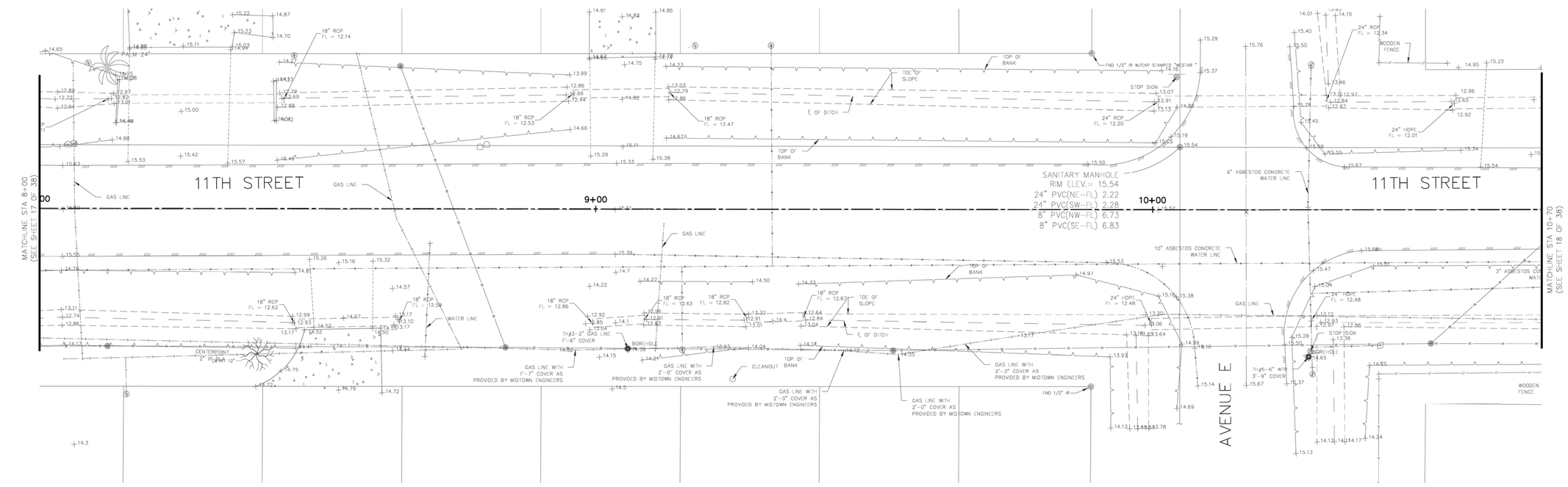
STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-14-19
Huitt-Zollars Inc.
Firm Registration No. F-761

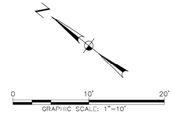
DATE: 07-12-2019
SCALE: 1"=10' (V)

DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 16 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\16 - 18 11TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 4, 2019 1:19 PM PLOT DATE: Nov 26, 2019 12:10 PM
BY: Bhancock
XREF:\XREF_BORDER XREF_LAYOUTS XREF_SURVEY XREF_BASELINE







NOTES:

1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE SHEET 17 OF 38 FOR DATUM & TBM INFORMATION.
3. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

HUITT-ZOLLARS
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TBPE REG NO F-761
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THE STATE OF TEXAS
COUNTY OF GALVESTON

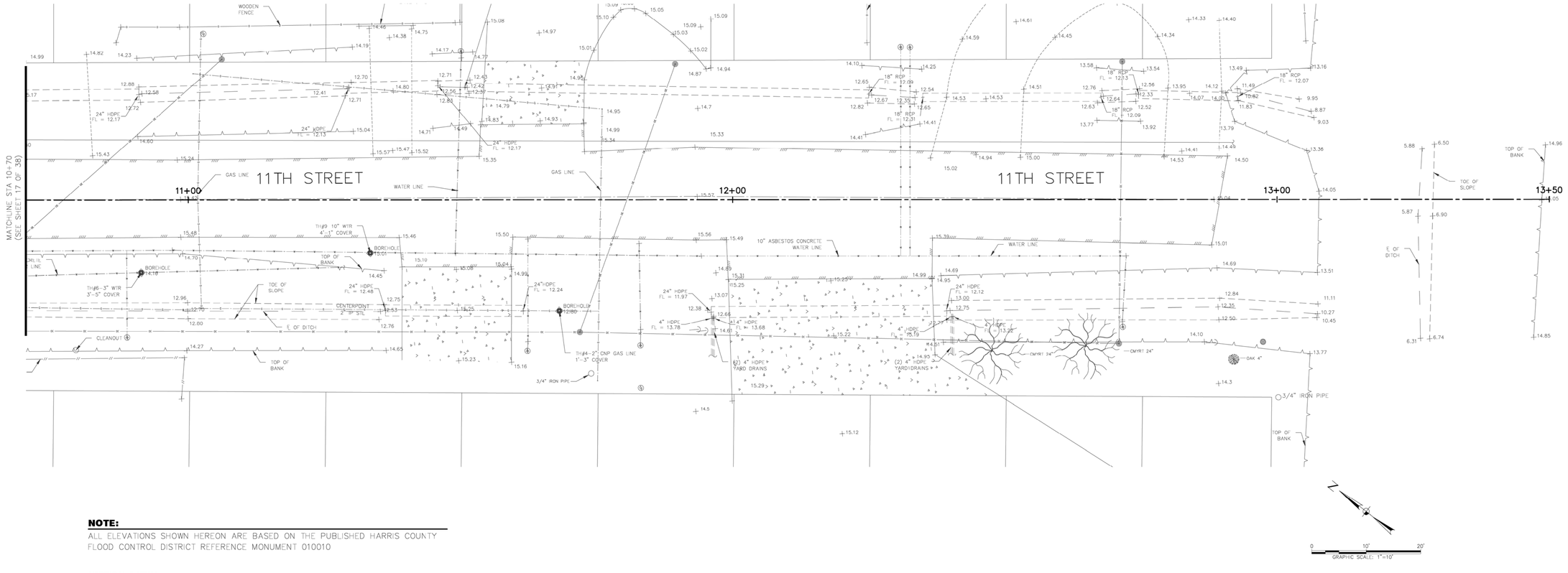
11TH ST SURVEY & CONTROL 02 OF 03

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	17 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\16 - 18 11TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 4, 2019 1:19 PM PLOT DATE: Nov 26, 2019 12:10 PM
BY: Bhancock
XREFS:XREF_BORDER XREF_LAYOUTS XREF_SURVEY XREF_BASELINE



NOTE:

ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE PUBLISHED HARRIS COUNTY FLOOD CONTROL DISTRICT REFERENCE MONUMENT 010010

VERTICAL DATUM:

BENCHMARK

HARRIS COUNTY FLOODPLAIN REFERENCE MONUMENT No. 010010, A ALUMINUM DISC FOUND ON THE INTERSECTION OF HWY 146, 2ND STREET AND NASA: TRAVEL ± 0.75 MILES SOUTH EAST ON 2ND STREET TO TODDVILLE ROAD, TURN RIGHT, TRAVEL ± 0.4 MILES SOUTH WEST ON TODDVILLE ROAD TO BRIDGE; MONUMENT IS AT CENTER OF BRIDGE ON THE BAY (EAST) SIDE.
ELEV. 5.89 FEET NAVD 88, GEOID 99 (CONUS), 2001 ADJUSTMENT

T.B.M. #1 (CONTROL POINT #1)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE D AND NINTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.01'

T.B.M. #2 (CONTROL POINT #2)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE E AND NINTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.76'

T.B.M. #3 (CONTROL POINT #3)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE E AND ELEVENTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.79'

T.B.M. #4 (CONTROL POINT #4)
SET MAGNAIL ON NEAR THE INTERSECTION OF AVENUE D AND ELEVENTH STREET.
(AS SHOWN IN THE DRAWING)
ELEV.= 15.79'

HORIZONTAL AND VERTICAL DATUM

ALL COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON AND REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983 (NAD 83), CORS 2011, EPOCH 2010.00.

NOTES:
1. SEE SHEET 03 OF 38 FOR SURVEY LEGEND.
2. SEE NOTE 14 & 15 ON SHEET 03 OF 38 FOR HAND EXCAVATION AND LOCATION OF GAS AND WATER SERVICE LINES.

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
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Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST SURVEY & CONTROL 03 OF 03

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 18 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\16 - 18 11TH ST SURVEY & CONTROL 01 OF 03.dwg
SAVE DATE: Apr 4, 2019 1:19 PM BY: Bhancock PLOT DATE: Nov 26, 2019 12:10 PM
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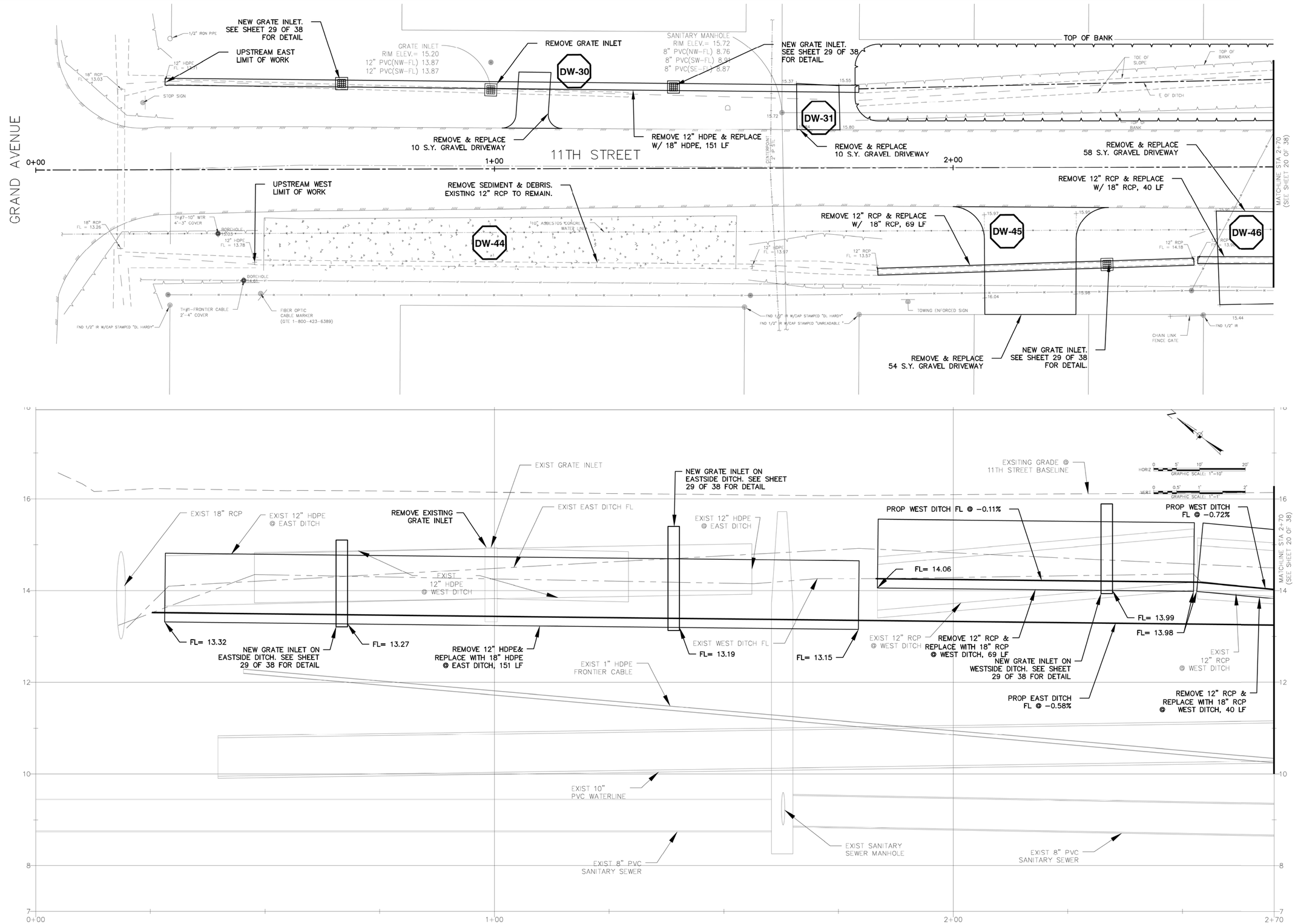

NO.	REVISION	DATE

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Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

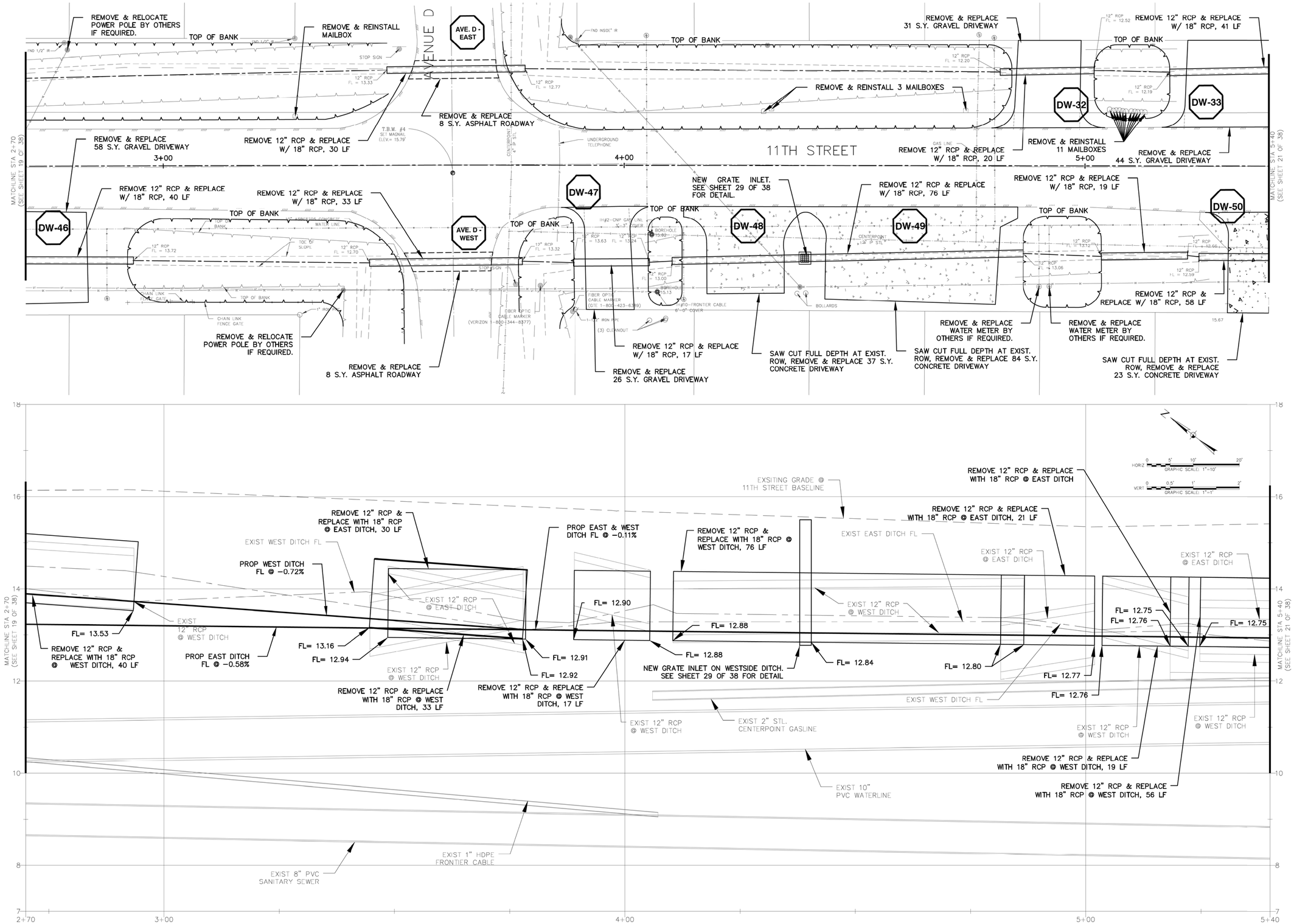
11TH ST PLAN & PROFILE 01 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
7-12-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	19 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM PLOT DATE: Nov 26, 2019 12:11 PM
BY: Dmigl
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE



DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM BY: Dmigl PLOT DATE: Nov 26, 2019 12:11 PM
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

NO.	REVISION	DATE

HUITT-ZOLLARS
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10350 Richmond Ave, Suite 300
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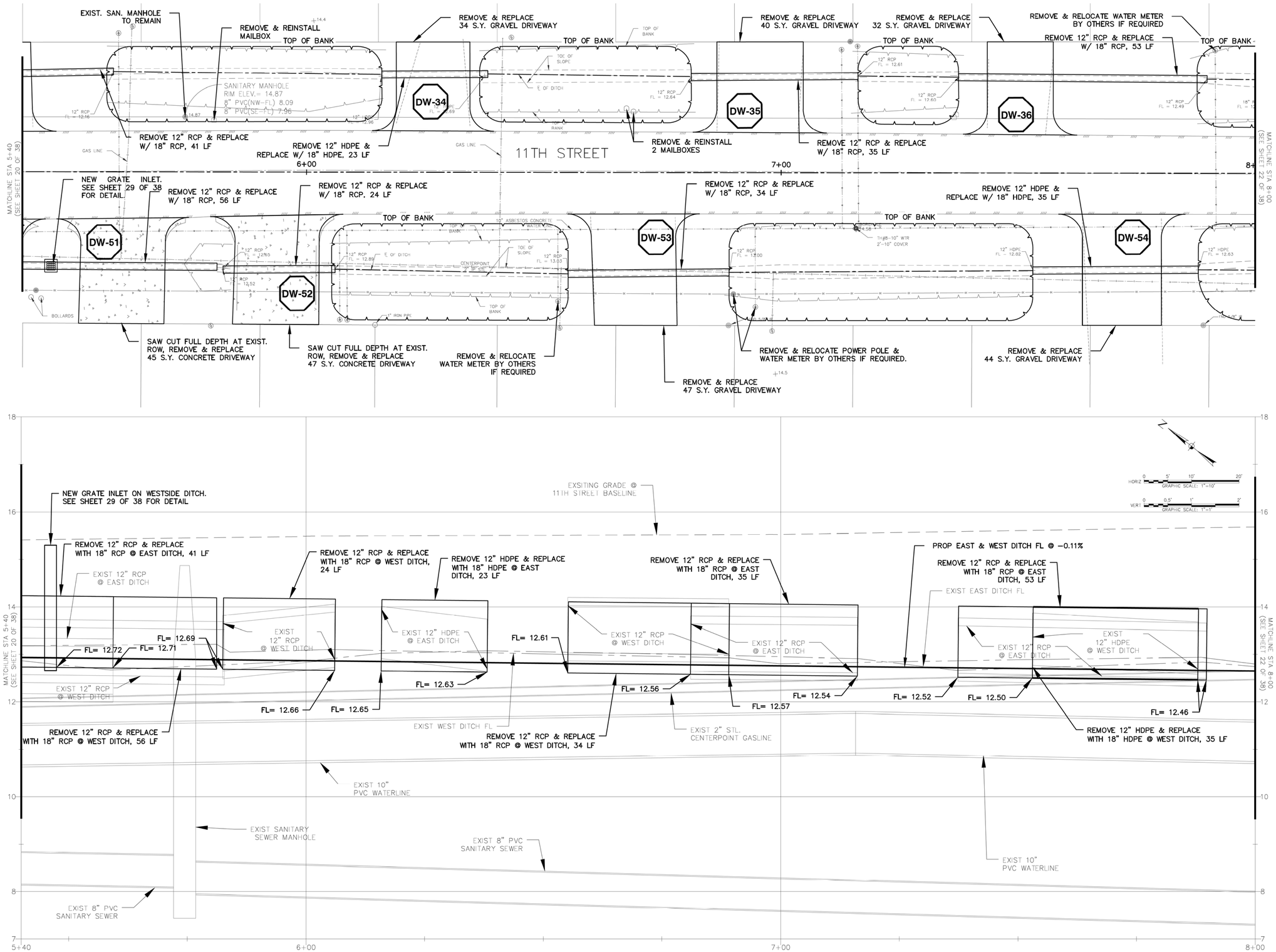
Phone (281) 496-0066
Fax (281) 496-0220

11TH ST PLAN & PROFILE 02 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED PROFESSIONAL ENGINEER
7-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	20 OF 38



DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM PLOT DATE: Nov 26, 2019 12:11 PM
BY: Dmigl
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

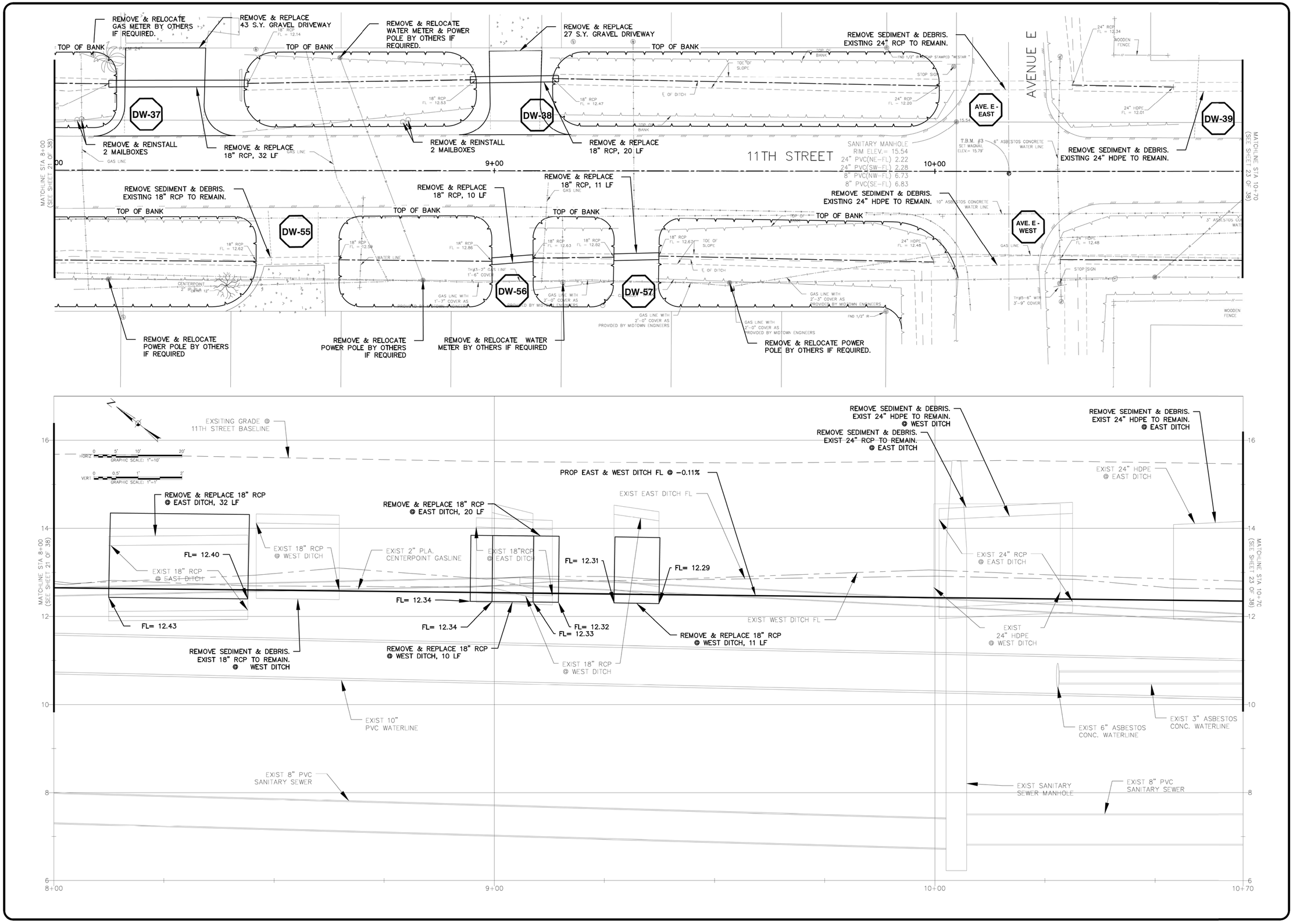
THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST PLAN & PROFILE 03 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED PROFESSIONAL ENGINEER
7-12-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	21 OF 38



NO.	REVISION	DATE

HUITT-ZOLLARS

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TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

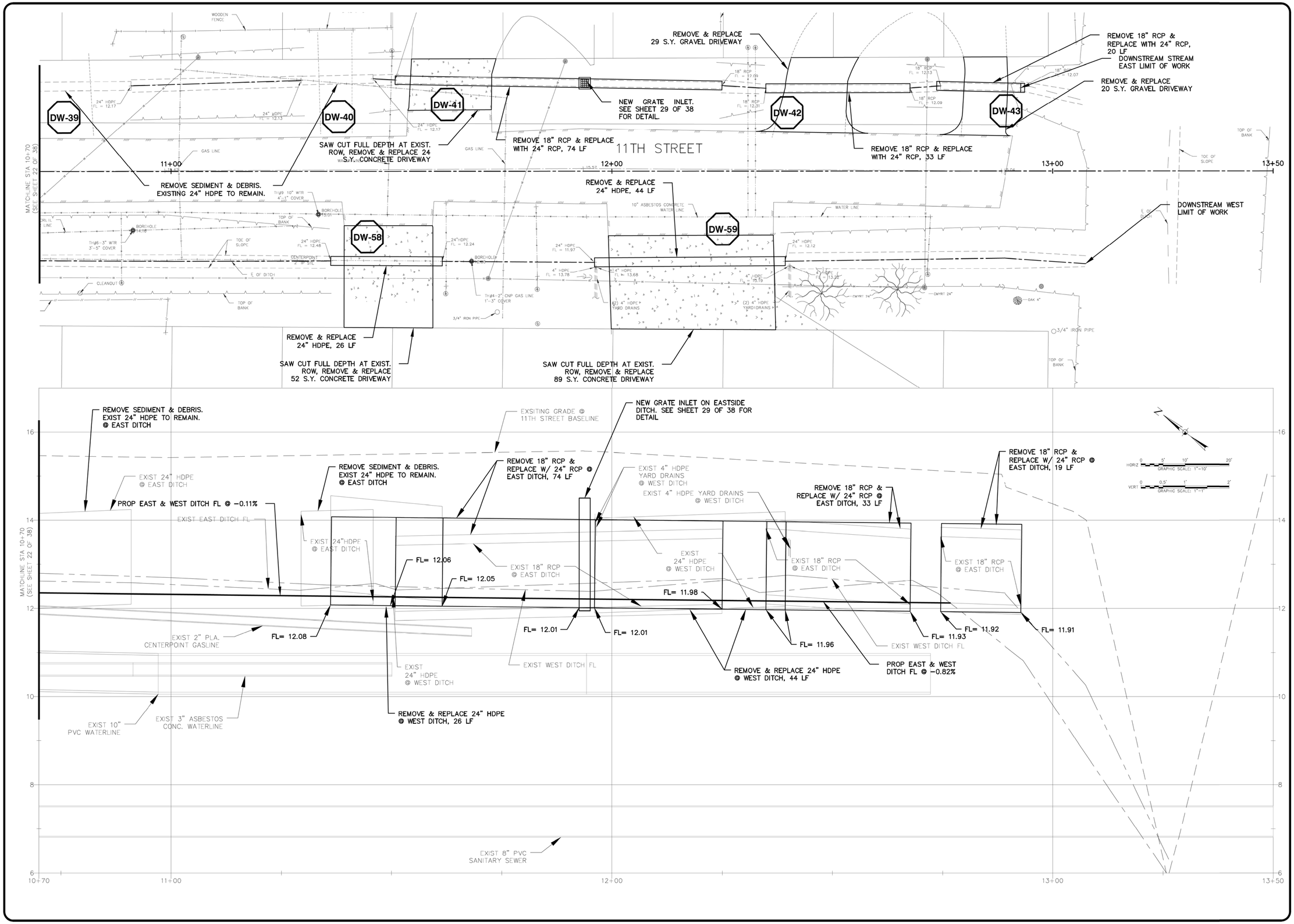
11TH ST PLAN & PROFILE 04 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

DAVID E. MIDL
130126
LICENSED
PROFESSIONAL ENGINEER
7-12-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	22 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM BY: Dmigl PLOT DATE: Nov 26, 2019 12:11 PM
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE



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Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST PLAN & PROFILE 05 OF 05

9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	23 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM PLOT DATE: Nov 26, 2019 12:12 PM BY: Dmigl
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

SUMMARY OF DRIVEWAYS FOR 11TH STREET

SHEET NO.	DRIVEWAY NO.	TO BE REPLACED	EXISTING DRIVEWAY MATERIAL	PROPOSED DRIVEWAY MATERIAL	PROPOSED CULVERT LENGTH (LF)	PROPOSED PIPE SIZE (IN)	PROPOSED PIPE MATERIAL	PROPOSED UPSTREAM FL	PROPOSED DOWNSTREAM FL	DRIVEWAYS AREA (SY)
19	30	YES	GRAVEL	GRAVEL	151	18	HDPE	13.32	13.15	10
19	31	YES	GRAVEL	GRAVEL	SEE DW-30	18	HDPE	13.32	13.15	10
20	AVE D EAST	YES	ASPHALT	ASPHALT	30	18	RCP	12.94	12.91	8
20	32	YES	GRAVEL	GRAVEL	20	18	RCP	12.80	12.77	31
20	33	YES	GRAVEL	GRAVEL	41	18	RCP	12.76	12.71	41
21	34	YES	GRAVEL	GRAVEL	23	18	HDPE	12.65	12.63	34
21	35	YES	GRAVEL	GRAVEL	35	18	RCP	12.56	12.54	40
21	36	YES	GRAVEL	GRAVEL	53	18	RCP	12.52	12.50	32
22	37	YES	GRAVEL	GRAVEL	32	18	RCP	12.43	12.40	43
22	38	YES	GRAVEL	GRAVEL	20	18	RCP	12.34	12.32	27
22	AVE E EAST	NO	ASPHALT	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22&23	39	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23	40	NO	GRAVEL	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23	41	YES	CONCRETE	CONCRETE	74	24	RCP	12.06	11.98	24
23	42	YES	GRAVEL	GRAVEL	33	24	RCP	11.96	11.93	29
23	43	YES	GRAVEL	GRAVEL	20	24	RCP	11.92	11.91	20
19	44	NO	CONCRETE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	45	YES	GRAVEL	GRAVEL	69	18	RCP	14.06	13.98	54
19&20	46	YES	GRAVEL	GRAVEL	40	18	RCP	13.98	13.53	58
20	AVE D WEST	YES	ASPHALT	ASPHALT	33	18	RCP	13.16	12.92	8
20	47	YES	GRAVEL	GRAVEL	17	18	RCP	12.90	12.88	26
20	48	YES	CONCRETE	CONCRETE	76	18	RCP	12.88	12.80	37
20	49	YES	CONCRETE	CONCRETE	SEE DW-49	18	RCP	12.88	12.80	84
20&21	50	YES	CONCRETE	CONCRETE	56	18	RCP	12.75	12.69	23
21	51	YES	CONCRETE	CONCRETE	SEE DW-50	18	RCP	12.75	12.69	45
21	52	YES	CONCRETE	CONCRETE	24	18	RCP	12.69	12.66	47
21	53	YES	GRAVEL	GRAVEL	34	18	RCP	12.61	12.57	47
21	54	YES	GRAVEL	GRAVEL	35	18	HDPE	12.50	12.46	44
22	55	NO	CONCRETE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22	56	YES	EARTHEN	EARTHEN	10	18	RCP	12.34	12.33	N/A
22	57	YES	EARTHEN	EARTHEN	11	18	RCP	12.31	12.29	N/A
22	AVE E WEST	NO	ASPHALT	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23	58	YES	CONCRETE	CONCRETE	26	24	HDPE	12.08	12.05	52
23	59	YES	CONCRETE	CONCRETE	44	24	HDPE	12.01	11.96	89

NO.	REVISION	DATE

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Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST DRIVEWAY SUMMARY

9TH & 11TH STREET-
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

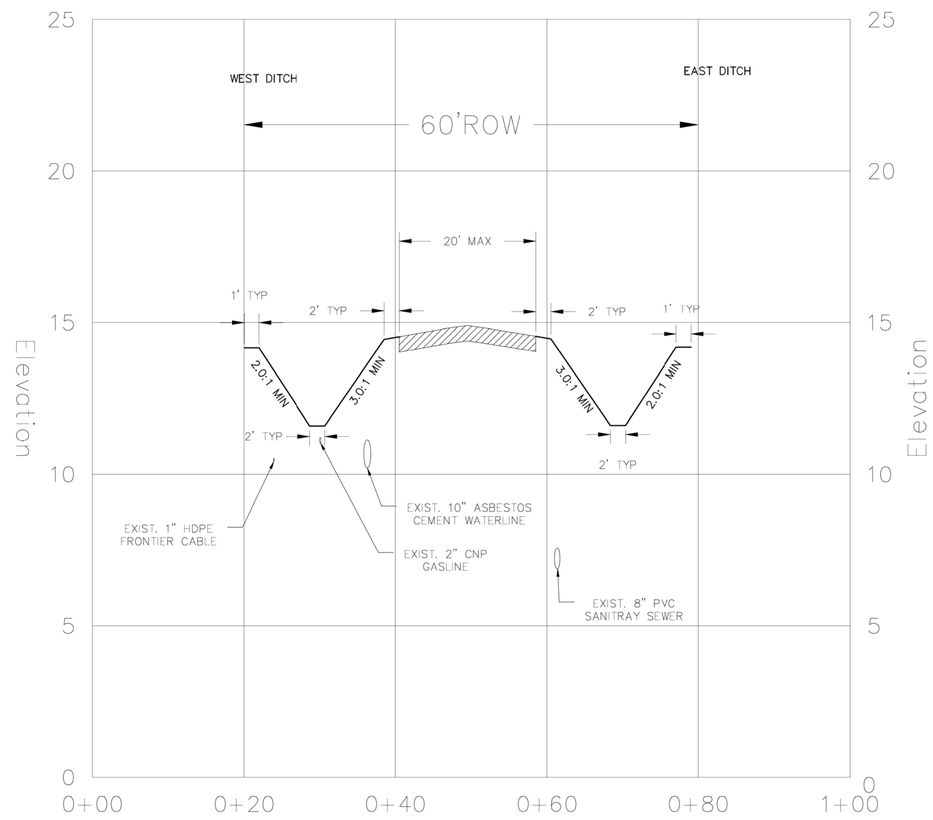
DATE: 07-12-2019
SCALE: NA

DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 24 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\19 - 24 11TH PLAN & PROFILE.dwg
SAVE DATE: Jul 11, 2019 2:32 PM BY: Dmigl PLOT DATE: Nov 26, 2019 12:12 PM
XREFS:XREF_SURVEY XREF_LAYOUTS XREF_PROFILE XREF_BORDER XREF_BASELINE

HORIZ 0 5' 10' 20'
GRAPHIC SCALE: 1"=10'

VERT 0 0.5' 1' 2'
GRAPHIC SCALE: 1"=1'



1 TYPICAL SECTION 11TH STREET

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

11TH ST TYPICAL CROSS SECTION

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	25 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\14-15 & 25-26 CROSS-SECTIONS.dwg
SAVE DATE: Apr 9, 2019 4:30 PM BY: Mvega PLOT DATE: Nov 26, 2019 12:13 PM
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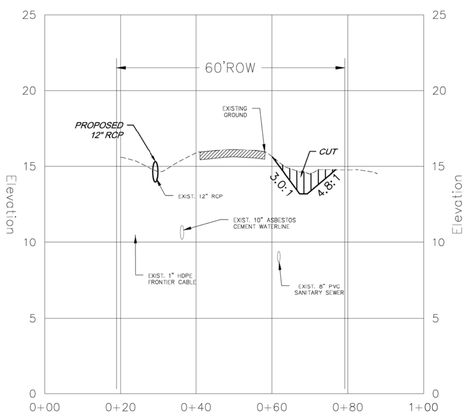
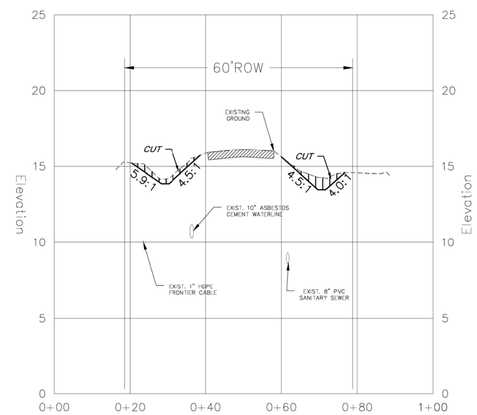
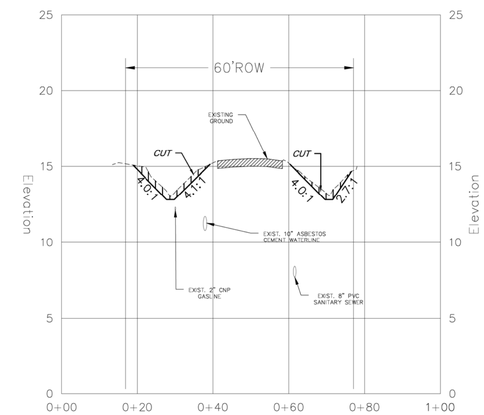


8 SECTION STA 2+50



9 SECTION STA 3+00



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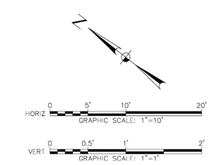
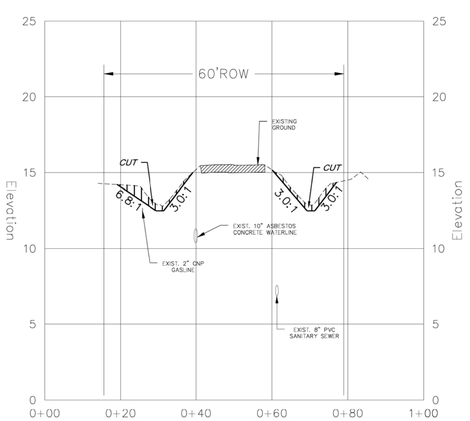
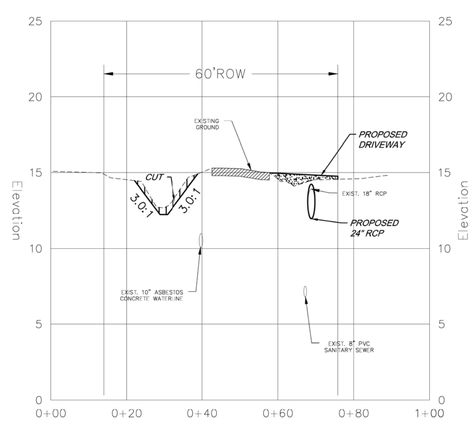




11 SECTION STA 9+50



12 SECTION STA 12+50

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

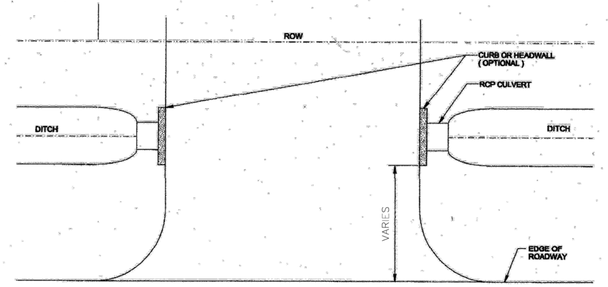
11TH CROSS SECTIONS

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
Huitt-Zollars Inc.
Firm Registration No. F-761

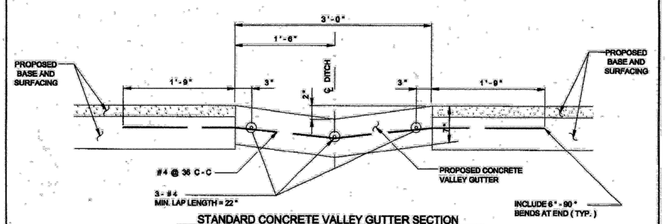
DATE:	07-12-2019
SCALE:	1"=10' (V) 1"=1' (H)
DRAWN:	M.V.
DESIGNED:	D.E.M.
CHECKED:	G.R.W.
PROJ. NO.:	R307771.01
SHEET	26 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\14-15 & 25-26 CROSS-SECTIONS.dwg
SAVE DATE: Apr 9, 2019 4:30 PM BY: Mvega PLOT DATE: Nov 26, 2019 12:13 PM
XREFS:XREF_SURVEY XREF_BASELINE XREF_LAYOUTS XREF_BORDER XREF_PROFILE



STANDARD OPEN DITCH DRIVEWAY - PLAN

NTS



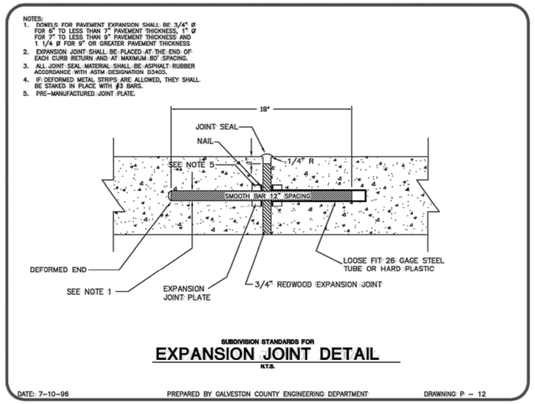
STANDARD CONCRETE VALLEY GUTTER SECTION

NTS

1. REINFORCED CONCRETE PIPE (RCP) CULVERTS AND CONCRETE VALLEY GUTTER GRADES SHALL BE SET BY CITY ENGINEER. PROFILE SHOWING THE PROPOSED AND EXISTING DITCH FLOWLINE WILL BE REQUIRED WHERE CONCRETE VALLEY GUTTERS ARE TO BE CONSTRUCTED IN LIEU OF CULVERTS.
2. CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 18" DIAMETER MINIMUM.
3. SPACING OF TYPE "D" OR "D-1" INLETS SHALL BE DETERMINED BY CITY * ENGINEER. SEE DRAWING NO. 02632-07 FOR TYPE "D" OR DRAWING NO. 02632-08 FOR TYPE "D-1".
4. DRIVEWAY MAY BE CONCRETE, ASPHALT OR ANY OTHER MATERIAL WHICH WILL NOT PERMIT WIND OR WATERBORNE EROSION.
5. A 3-FOOT CONCRETE VALLEY GUTTER SECTION SHALL BE CONSTRUCTED THROUGH THE PROPOSED DRIVEWAY WHERE THE CITY ENGINEER DETERMINES THE INSTALLATION OF DITCH CULVERTS TO BE IMPRACTICAL DUE TO INSUFFICIENT DEPTH. THE VALLEY GUTTER SECTION WILL BE CONSTRUCTED OF 5-1/2 SACK CEMENT PER CUBIC YARD OF CONCRETE.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
DRIVEWAYS WITH CULVERTS OR VALLEY GUTTERS ON OPEN DITCH TYPE STREETS (NOT TO SCALE)	
APPROVED BY CITY ENGINEER	APPROVED BY DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2009	DWG NO: 02754-02

* BY COUNTY ENGINEER

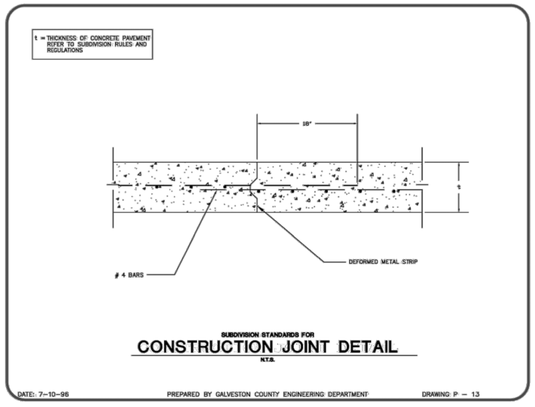


SUBDIVISION STANDARDS FOR

EXPANSION JOINT DETAIL

N.T.S.

DATE: 7-10-96 PREPARED BY GALVESTON COUNTY ENGINEERING DEPARTMENT DRAWING P – 12

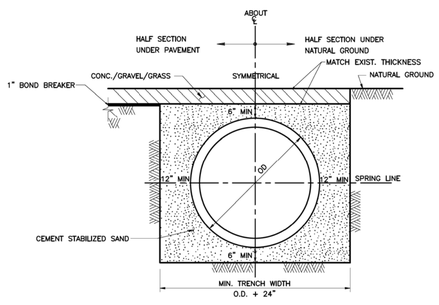


SUBDIVISION STANDARDS FOR

CONSTRUCTION JOINT DETAIL

N.T.S.

DATE: 7-10-96 PREPARED BY GALVESTON COUNTY ENGINEERING DEPARTMENT DRAWING P – 13

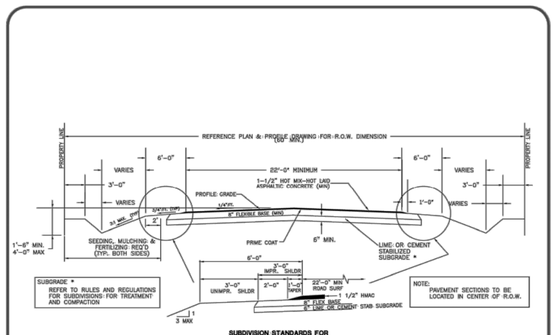


NOTES:

1. WHERE SOIL CONDITIONS REQUIRE, THE ENGINEER MAY ORDER USE OF GRANULAR MATERIAL IN LIEU OF CEMENT STABILIZED SAND BEDDING.
2. MAX TRENCH WIDTH SHALL NOT BE GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.

12 DETAIL–STORM SEWER BEDDING AND BACKFILL

NOT TO SCALE



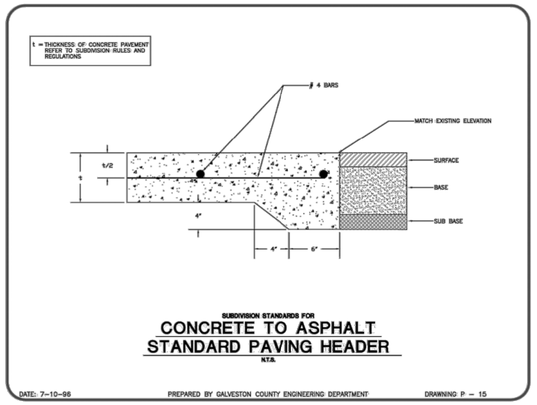
SUBDIVISION STANDARDS FOR

FLEXIBLE BASE PAVEMENT

DITCH SECTION

N.T.S.

DATE: 7-10-96 PREPARED BY GALVESTON COUNTY ENGINEERING DEPARTMENT DRAWING P – 1



SUBDIVISION STANDARDS FOR

CONCRETE TO ASPHALT STANDARD PAVING HEADER

N.T.S.

DATE: 7-10-96 PREPARED BY GALVESTON COUNTY ENGINEERING DEPARTMENT DRAWING P – 15

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

STANDARD DETAIL SHEET 01 OF 03

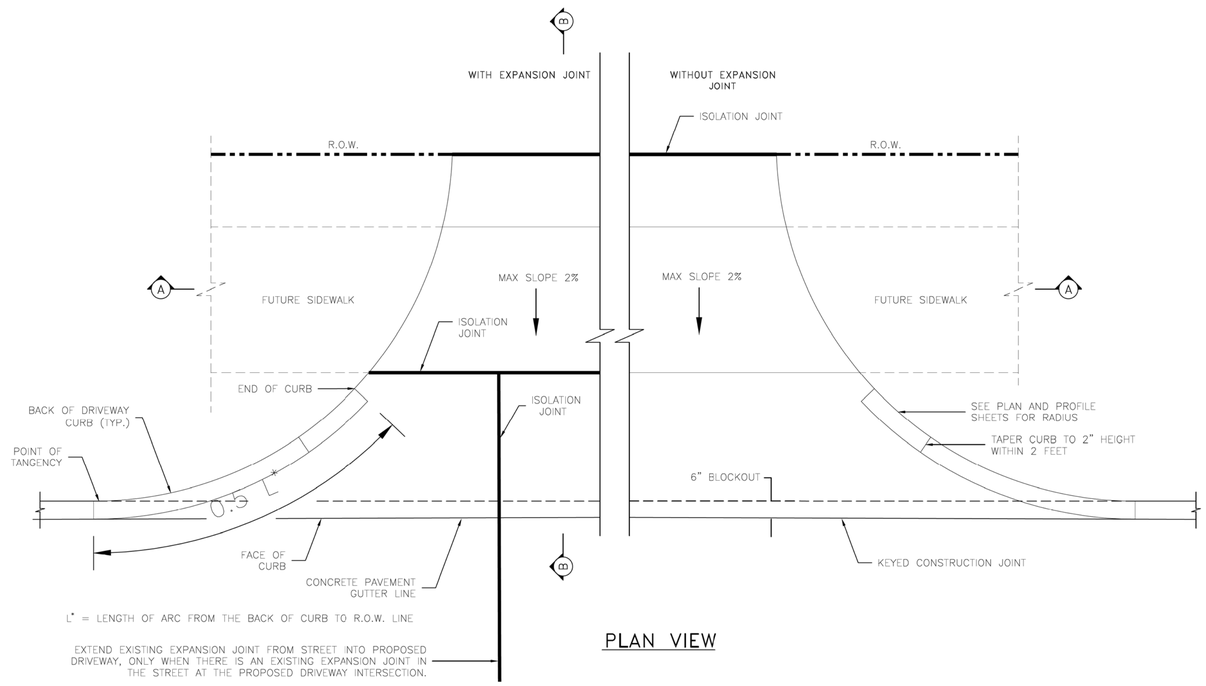
9TH & 11TH STREET DRAINAGE RESTORATION

REGISTERED PROFESSIONAL ENGINEER
DAVID E. MIGL
130126
LICENSED
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

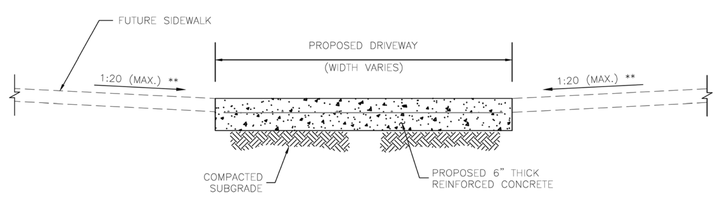
DATE: 07-12-2019
SCALE: 1"=10' (V)

DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 27 OF 38

DWG FILE: \\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\27-29 DETAIL SHEETS.dwg
SAVE DATE: Apr 19, 2019 3:33 PM BY: fsoto
XREFS:XREF_BORD:R
PLOT DATE: Nov 26, 2019 12:13 PM

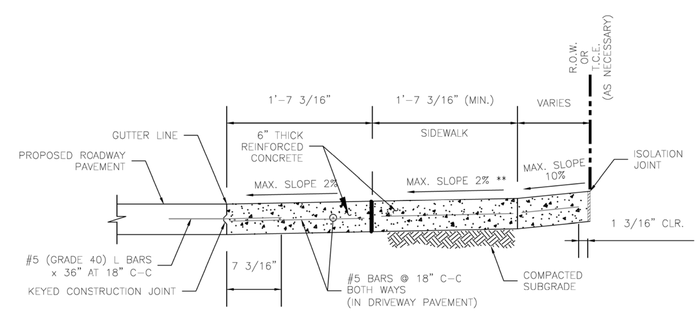


PLAN VIEW



SECTION A–A
SCALE: 1" = 1'–6"

** SIDEWALK SLOPES SHALL NOT EXCEED THE TEXAS ACCESSIBILITY STANDARD 403.3 "SLOPE" REQUIREMENTS.



SECTION B–B
(DRIVEWAY SLOPES TO ROADWAY)

NOTES:

1. THIS DRAWING APPLIES TO BOTH PUBLIC AND PRIVATE PROJECTS.
2. SAWCUT EXISTING DRIVEWAY AT R.O.W. LINE OR AS SHOWN ON DRAWING AND REMOVE EXISTING DRIVEWAY TO SAWCUT LINE.
3. IF THERE IS EXISTING CURB ON DRIVEWAY, CONNECT PROPOSED CURB TO EXISTING CURB; OTHERWISE TAPER CURB HEIGHT AS SHOWN.
4. SEE PAVEMENT DETAIL SHEET FOR CONCRETE CURB REINFORCEMENT.

NO.	REVISIONS	DATE	NAME
1	REVISION_TEXT	DATE	INIT
2	REVISION_TEXT	DATE	INIT
3	REVISION_TEXT	DATE	INIT
4	REVISION_TEXT	DATE	INIT
5	REVISION_TEXT	DATE	INIT

HARRIS COUNTY ENGINEERING DEPARTMENT

FOR INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE: NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES
ENGINEER: NAME
P.E. SERIAL No. NUMBER
DATE: / /

PROJECT TITLE:	PROJECT_TITLE–LINE1		
	PROJECT_TITLE–LINE2	CIVIL STANDARD	NO.
SHEET DESCRIPTION:	SHEET_DESCRIPTION–LINE1		
DRAWN BY: DRAWN_BY	SHEET_DESCRIPTION–LINE2	DATE:	DATE
CK'D BY: CK'D_BY	SCALE: SCALE	SHEET NO:	PAGE/PAGE

I:\R307771.01 – 9th and 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\27–29 DETAIL SHEETS.dwg

DWG FILE: I:\R307771.01 – 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\27–29 DETAIL SHEETS.dwg
SAVE DATE: Apr 19, 2019 3:33 PM BY: Fsoto
PLOT DATE: Nov 26, 2019 12:13 PM
XREFS:XREF_BORDER

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt–Zollars, Inc.
TBPE REG NO F–761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496–0066
Fax (281) 496–0220

STANDARD DETAIL SHEET 02 OF 03

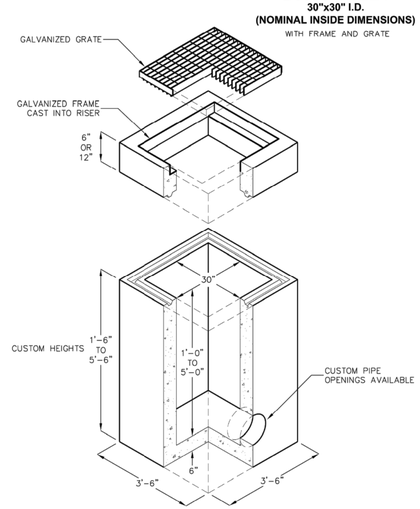
9TH & 11TH STREET DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
11-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07–12–2019
SCALE: 1"=10' (V)
DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 28 OF 38

DROP INLET

30"x30" I.D.
(NOMINAL INSIDE DIMENSIONS)
WITH FRAME AND GRATE



FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

7/28/2014
DI30X30_3030FG_FF_C.DWG
©2014

Jensen Precast reserves the right to make changes to product design and/or dimensions without notice. Please contact Jensen Precast whenever necessary for confirmation or advice on product design.

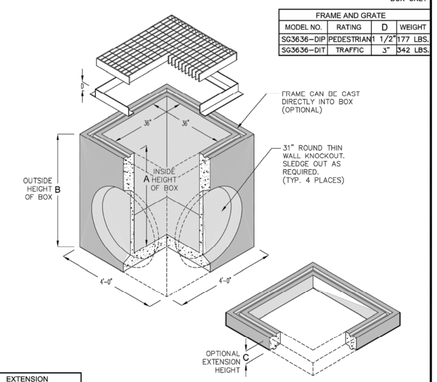
JENSEN PRECAST

GRATE INLET STRUCTURE FOR 18" & 24" PIPE ONLY

DROP INLET			
MODEL NO.	A	B	*WEIGHT
DI363636	36"	42"	3748 LBS.
DI363648	48"	54"	4752 LBS.

*BOX ONLY

FRAME AND GRATE			
MODEL NO.	RATING	D	WEIGHT
SG3636-DIP	PEDESTRIAN	1 1/2"	177 LBS.
SG3636-DIT	TRAFFIC	3"	342 LBS.



EXTENSION		
MODEL NO.	C	WEIGHT
RS363606	6"	525 LBS.
RS363612	12"	1050 LBS.

- FRAME AND GRATE ASSEMBLY AVALIABLE IN TRAFFIC OR PEDESTRIAN MODELS.
- DESIGN FOR H-20-44 BRIDGE LOADING.
- ASSEMBLY TO BE PLACED ON A 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.
- ILLUSTRATION IS TYPICAL ONLY OF GENERAL SERIES CONFIGURATION; FOR SPECIFIC CONFIGURATION, CALL JENSEN PRECAST.

36" X 36" DRAIN INLET

JENSEN PRECAST

ORIG DWG DATE 11-28-00 | REV DWG DATE

DI3636

8.05

GRATE INLET STRUCTURE FOR 30" HDPE ONLY

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (4)

SLOPE	DIA. OF PIPE, D	Values for one Pipe W	Values for one Pipe Reinf (lbs)	Values for one Pipe Conc (CY) (1)	Values to be added for each odd 1' Pipe W	Values to be added for each odd 1' Pipe Reinf (lbs)	Values to be added for each odd 1' Pipe Conc (CY) (1)
2:1	12"	9'- 0"	122	1,1	1'- 9"	15	0,2
	15"	10'- 3"	136	1,3	2'- 2"	16	0,2
	18"	11'- 6"	163	1,5	2'- 8"	19	0,3
	21"	12'- 9"	200	1,8	3'- 1"	31	0,4
	24"	14'- 0"	217	2,1	3'- 7"	34	0,4
	27"	15'- 3"	254	2,4	3'-11"	37	0,5
	30"	16'- 6"	272	2,7	4'- 4"	40	0,6
	33"	17'- 9"	314	3,1	4'- 8"	43	0,6
	36"	19'- 0"	371	3,9	5'- 1"	46	0,8
	42"	21'- 6"	442	4,9	5'-10"	52	1,0
	48"	25'- 0"	569	6,4	6'- 7"	59	1,3
	54"	27'- 6"	701	7,5	7'- 6"	82	1,6
	60"	30'- 0"	794	8,8	8'- 3"	90	1,8
	66"	32'- 6"	894	10,2	8'- 9"	96	2,0
	72"	35'- 0"	1055	11,7	9'- 4"	103	2,3
3:1	12"	13'- 0"	175	1,6	1'- 9"	14	0,2
	15"	14'- 9"	193	1,9	2'- 2"	17	0,2
	18"	16'- 6"	228	2,2	2'- 8"	19	0,3
	21"	18'- 3"	299	2,6	3'- 1"	31	0,4
	24"	20'- 0"	323	3,0	3'- 7"	33	0,4
	27"	21'- 9"	371	3,5	3'-11"	37	0,5
	30"	23'- 6"	415	4,0	4'- 4"	40	0,5
	33"	25'- 3"	469	4,6	4'- 8"	43	0,6
	36"	27'- 0"	556	5,7	5'- 1"	46	0,8
	42"	30'- 6"	675	7,1	5'-10"	52	1,0
	48"	35'- 6"	837	9,2	6'- 7"	59	1,3
	54"	39'- 0"	1015	11,0	7'- 6"	84	1,6
	60"	42'- 6"	1171	12,9	8'- 3"	91	1,8
	66"	46'- 0"	1298	14,9	8'- 9"	98	2,0
	72"	49'- 6"	1561	17,1	9'- 4"	103	2,3
4:1	12"	17'- 0"	229	2,0	1'- 9"	15	0,2
	15"	19'- 3"	266	2,4	2'- 2"	17	0,2
	18"	21'- 6"	308	2,9	2'- 8"	19	0,3
	21"	23'- 9"	382	3,5	3'- 1"	31	0,3
	24"	26'- 0"	430	3,9	3'- 7"	34	0,4
	27"	28'- 3"	486	4,7	3'-11"	37	0,5
	30"	30'- 6"	539	5,2	4'- 4"	40	0,6
	33"	32'- 9"	603	6,0	4'- 8"	42	0,6
	36"	35'- 0"	738	7,5	5'- 1"	47	0,8
	42"	39'- 6"	881	9,3	5'-10"	52	1,0
	48"	46'- 0"	1102	12,1	6'- 7"	61	1,3
	54"	50'- 6"	1364	14,4	7'- 6"	84	1,6
	60"	55'- 0"	1547	16,9	8'- 3"	91	1,8
	66"	59'- 6"	1741	19,5	8'- 9"	98	2,0
	72"	64'- 0"	2069	22,4	9'- 4"	102	2,3
6:1	12"	25'- 0"	336	3,0	1'- 9"	14	0,2
	15"	28'- 3"	384	3,6	2'- 2"	17	0,2
	18"	31'- 6"	452	4,2	2'- 8"	19	0,3
	21"	34'- 9"	581	5,1	3'- 1"	31	0,4
	24"	38'- 0"	644	5,8	3'- 7"	34	0,4
	27"	41'- 3"	737	6,9	3'-11"	37	0,5
	30"	44'- 6"	807	7,7	4'- 4"	39	0,6
	33"	47'- 9"	912	8,9	4'- 8"	44	0,6
	36"	51'- 0"	1108	11,0	5'- 1"	48	0,8
	42"	57'- 6"	1318	13,7	5'-10"	54	1,0
	48"	67'- 0"	1674	17,9	6'- 7"	59	1,3
	54"	73'- 6"	2064	21,3	7'- 6"	83	1,6
	60"	80'- 0"	2343	24,9	8'- 3"	89	1,8
	66"	86'- 6"	2635	28,9	8'- 9"	96	2,0
	72"	93'- 0"	3123	33,1	9'- 4"	101	2,3

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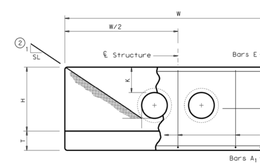
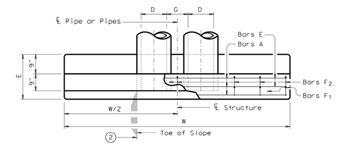
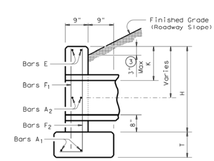


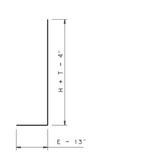
ELEVATION



PLAN OF NON-SKEWED PIPES



℄ SECTION



BARS F2

GENERAL NOTES:
Designed according to AASHTO LRFD Specifications.
Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.
All reinforcing steel shall be Grade 60.
All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.
No bridge rails of any type may be mounted directly to these culvert headwalls.

TABLE OF CONSTANT DIMENSIONS

DIA. OF PIPE, D	G	K	H	T	E
12"	9"	1'- 0"	2'- 8"	9"	1'- 9"
15"	11"	1'- 0"	2'-11"	9"	1'- 9"
18"	1'- 2"	1'- 0"	3'- 2"	9"	1'- 9"
21"	1'- 4"	1'- 0"	3'- 5"	9"	2'- 0"
24"	1'- 7"	1'- 0"	3'- 8"	9"	2'- 0"
27"	1'- 8"	1'- 0"	3'-11"	9"	2'- 3"
30"	1'-10"	1'- 0"	4'- 2"	9"	2'- 3"
33"	1'-11"	1'- 0"	4'- 5"	9"	2'- 6"
36"	2'- 1"	1'- 0"	4'- 8"	1'- 0"	2'- 6"
42"	2'- 4"	1'- 0"	5'- 2"	1'- 0"	2'- 9"
48"	2'- 7"	1'- 3"	5'-11"	1'- 0"	3'- 0"
54"	3'- 0"	1'- 3"	6'- 5"	1'- 0"	3'- 3"
60"	3'- 3"	1'- 3"	6'-11"	1'- 0"	3'- 6"
66"	3'- 3"	1'- 3"	7'- 5"	1'- 0"	3'- 9"
72"	3'- 4"	1'- 3"	7'-11"	1'- 0"	4'- 0"

TABLE OF REINFORCING STEEL

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

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
(2) Indicated slope is perpendicular to centerline Pipe or Pipes.
(3) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
(4) Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation | Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE:	ch pw0ste.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: GAF
©TxDOT	February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS					
		DIST		COUNTY	SHEET NO.

DATE REVISION

NO.	REVISION	DATE

HUITT-ZOLLARS
Huitt-Zollars, Inc.
TBPE REG NO F-761
10350 Richmond Ave, Suite 300
Houston, Texas 77042
Phone (281) 496-0066
Fax (281) 496-0220

THE STATE OF TEXAS
COUNTY OF GALVESTON

STANDARD DETAIL SHEET 03 OF 03

9TH & 11TH STREET
DRAINAGE RESTORATION

STATE OF TEXAS
DAVID E. MIGL
130126
LICENSED
PROFESSIONAL ENGINEER
7-26-19
Huitt-Zollars Inc.
Firm Registration No. F-761

DATE: 07-12-2019
SCALE: 1"=10' (V)

DRAWN: M.V.
DESIGNED: D.E.M.
CHECKED: G.R.W.
PROJ. NO.: R307771.01
SHEET 29 OF 38

DWG FILE: I:\R307771.01 - 9th And 11th Avenue Drainage Restoration\10 CADD & BIM\10.1 AutoCAD\SHEET FILES\27-29 DETAIL SHEETS.dwg
SAVE DATE: Apr 19, 2019 3:33 PM BY: fscto PLOT DATE: Nov 26, 2019 12:13 PM
XREFS:XREF_BORDER